William P. Kenoi
Mayor

Clayton S. Honma
Director

Kenneth J. Van Bergen
Deputy Director

FILE COPY
NOV 08 2015

County of Hawai`i

DEPARTMENT OF PARKS AND RECREATION
101 Pauahi Street, Suite 6 • Hilo, Hawai'i 96720
(808) 961-8311 • Fax (808) 961-8411

RECEIVED
'15 OCT 28 P3:25
OFC. OF ENVIRONMENTAL QUALITY CONTROL

October 26, 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Jessica Wooley, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu HI 96813

Dear Ms. Wooley:

Subject: **Draft Environmental Assessment for Kukuihaele Park Improvements, TMK (3rd.) 4-8-006:010, Hāmākua District, Island of Hawai'i**

The County of Hawai'i, Department of Parks and Recreation, has prepared the draft environmental assessment for the subject project and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability for the EA for this project in the next available edition of the Environmental Notice. We have enclosed the following:

- One paper copy of the Draft EA;
- A CD containing the .pdf file for the EA and a WORD file with the OEQC Environmental Notice Publication Form; and
- A hardcopy of the OEQC publication form

Please contact James Komata at 961-8311 if you have any questions.

Sincerely,

Clayton S. Honma, Director
County of Hawai'i, Department of Parks and Recreation

Attach: As noted above

Cc: (w/o attach) Ron Terry, Ph.D, Project Environmental Consultant

County of Hawai'i is an Equal Opportunity Provider and Employer.

AGENCY ACTION
SECTION 343-5(b), HRS
PUBLICATION FORM

Project Name Kukuihaele Park Improvements
HRS §343-5 Trigger(s) Use of County land and County funds
Island: Hawai‘i
District: Hāmākua
TMK: (3rd) 4-8-006:010
Permits:

National Pollutant Discharge Elimination System Permit (State DOH)
Individual Wastewater System Permit (IWS) (State DOH)
Grading, Grubbing and Work Within County Right-of-Way Permits (County DPW)
Building Permits and Plan Approval (County DPW and Planning)
Chapter 6e, HRS, determination from State Historic Preservation Division on historic property effects
Disability and Communication Access Board (DCAB) plan review and approval

Proposing/Determination Agency:

County of Hawai‘i
Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, Hawai‘i 96720
James Komata, 961-8311

Consultant:

Geometrician Associates
PO Box 396
Hilo HI 96721
Ron Terry Ph. (808) 969-7090 rterry@hawaii.rr.com

Status (check one only):

_**x**_DEA-AFNSI — Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.

__FEA-FONSI — Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

__FEA-EISPN — Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.

__Act 172-12 EISPN — Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

__DEIS — The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqchawaii@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.

__FEIS — The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list,

along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

__ Section 11-200-23 Determination

The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.

__Section 11-200-27 Determination

The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

__Withdrawal (explain)

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page)**:**

The County of Hawai‘i Department of Parks and Recreation proposes to improve and expand the facilities at Kukuihaele Park. Although Kukuihaele Park is a valued asset in this small, rural community, it lacks needed recreational facilities. P&R has designed improvements to help meet these recreational needs while still maintaining much of the open space that is currently present and not overtaxing local roads. The project involves a new 27-space parking lot, including four ADA accessible stalls; a new comfort station; a new pavilion; an improved basketball court; a new softball/Little League baseball field with backstops, dugouts, bleachers, and fencing; a jogging path that winds around the baseball field; and removal of various trees to accommodate site features and new landscaping with *koa* and palm trees, among others. No impacts to any biological or water resources would occur. No archaeological sites are present and no cultural uses would be affected. Mitigation includes timing of clearing to avoid impacts to listed vertebrate species, NPDES and grading permits with best management practices during construction to avoid erosion and sedimentation, consultation of DOH concerning the need for a community noise control permit during construction, a dust control plan and precautionary conditions related to inadvertent finds of cultural materials. Minor traffic increases related to use by residents and drive-by visits by tourists seeking a restroom are expected to occur.

Kukuihaele Park Improvements

Draft Environmental Assessment

TMK (3rd) 4-8-006:010
Hāmākua District, Hawai‘i Island, State of Hawai‘i

November 2015

Prepared for:
Hawai‘i County
Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, Hawai‘i 96720

Kukuihaele Park Improvements
Draft Environmental Assessment

TMK (3rd) 4-8-006:010
Hāmākua District, Hawai‘i Island, State of Hawai‘i

PROPOSING/
APPROVING AGENCY:

County of Hawai‘i
Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, Hawai‘i 96720

CONSULTANT:

Geometrician Associates LLC
P.O. Box 396
Hilo Hawai‘i 96721

CLASS OF ACTION:

Use of State/County Land and County Funds

This document is prepared pursuant to:
The Hawai‘i Environmental Protection Act,
Chapter 343, Hawai‘i Revised Statutes (HRS), and
Title 11, Chapter 200, Hawai‘i Department of Health Administrative Rules (HAR).

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SUMMARY OF THE PROPOSED ACTION, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The County of Hawai‘i Department of Parks and Recreation (P&R) proposes to improve and expand the facilities at Kukuihaele Park. Although Kukuihaele Park is a valued asset in this rural and somewhat isolated community of about 350 inhabitants, it lacks needed recreational facilities. P&R has designed improvements to help meet these recreational needs while still maintaining much of the open space that is currently present and not overtaxing local roads. The project involves a new 27-space parking lot, including four ADA accessible stalls; a new comfort station; a new pavilion; an improved basketball court; a new softball/Little League baseball field with backstops, dugouts, bleachers, and fencing; a jogging path that winds around the baseball field; and removal of various trees to accommodate site features and new landscaping with *koa* and palm trees, among others. The project will be prepared with a base bid and one or more alternate bid items based on priority level, and the project may be phased.

No impacts to any biological or water resources would occur. No archaeological sites are present and no cultural uses would be affected. Mitigation includes timing of clearing to avoid impacts to listed vertebrate species, NPDES and grading permits with best management practices during construction to avoid erosion and sedimentation, consultation of DOH concerning the need for a community noise control permit during construction, a dust control plan and precautionary conditions related to inadvertent finds of cultural materials. Minor traffic increases related to use by residents and drive-by visits by tourists seeking a restroom are expected to occur.

PART 1: PROJECT DESCRIPTION, PURPOSE AND NEED AND ENVIRONMENTAL ASSESSMENT PROCESS

1.1 Project Location, Purpose and Need and Description

The County of Hawai‘i Department of Parks and Recreation (P&R) proposes to improve and expand the facilities at Kukuihaele Park, which is located in the village of Kukuihaele about a mile from the Waipi‘o Lookout (Figures 1-4). The park is State of Hawai‘i land that was encumbered under Executive Order 3990 to P&R. The improvements are being funded through Ordinance No. 15-58, which was passed unanimously by the Hawai‘i County Council on June 2, 2015.

Although Kukuihaele Park is a valued asset in this rural and somewhat isolated community of about 350 inhabitants, there is currently a lack of needed recreational facilities. Residents have repeatedly expressed to their elected representatives and P&R the desire to have better facilities along with the socioeconomic benefits that accrue from recreational activities. Among these efforts, longtime resident Paul Christensen, who started the senior softball league in Hāmākua, led a drive in 1978 that resulted in hundreds of petition signatures to build tennis courts below the old teachers’ cottages. Playground equipment was installed by a group of citizens led by Alberta Mock Chew in 1990. Despite a history of citizen interest, the park lacks some critical facilities. In particular, there is no regulation Little League or senior softball field within almost 10 miles. Similarly, the area lacks a pavilion for community events or family parties such as first birthday luaus. The park has no comfort station and the basketball court is substandard.

P&R has designed the improvements to help meet these recreational needs while still maintaining much of the open space that is currently present and not overtaxing local roads. As shown in the Site Plans in Figure 4, the project involves the following:

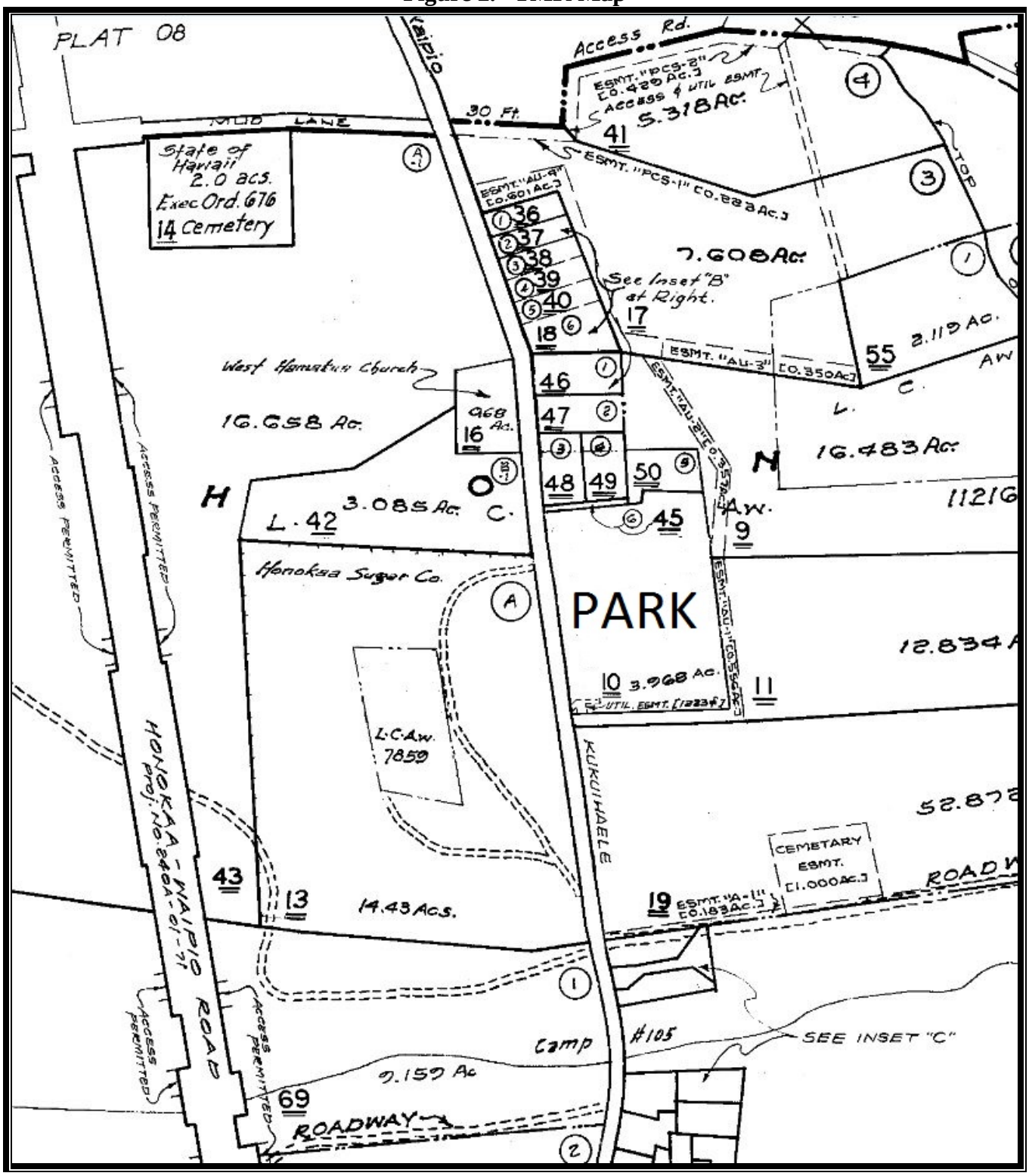
- A new parking lot for approximately 27 vehicles, including four ADA accessible stalls
- A new 1,152- square foot pavilion and an adjacent comfort station with an approved IWS
- An improved basketball court
- A new softball/Little League baseball field, which will include backstops, dugouts, bleachers, and fencing
- A jogging path that winds around the baseball field
- Removal of various trees to accommodate site features and landscaping with *koa* and palm trees as well as hardscape features including benches and walkways (see black and white Site Plan, Fig. 4)

1.2 Environmental Assessment Process

This Environmental Assessment (EA) is being conducted in accordance with Chapter 343 of the Hawai‘i Revised Statutes. This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai‘i Administrative Rules, is the basis for the environmental impact process in the State of Hawai‘i. According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria. Part 4 of this document states the anticipated finding that no significant impacts are expected to occur; Part 5 lists each criterion and presents the preliminary findings for each made by the Hawai‘i County Department of Parks and Recreation, the proposing and approving agency. If, after

Figure 1. Location Map

Figure 2. TMK Map



Portion TMK Plat 8-4-002. Source: County of Hawai‘i Real Property Tax Maps.

Figure 3. Project Site Photos

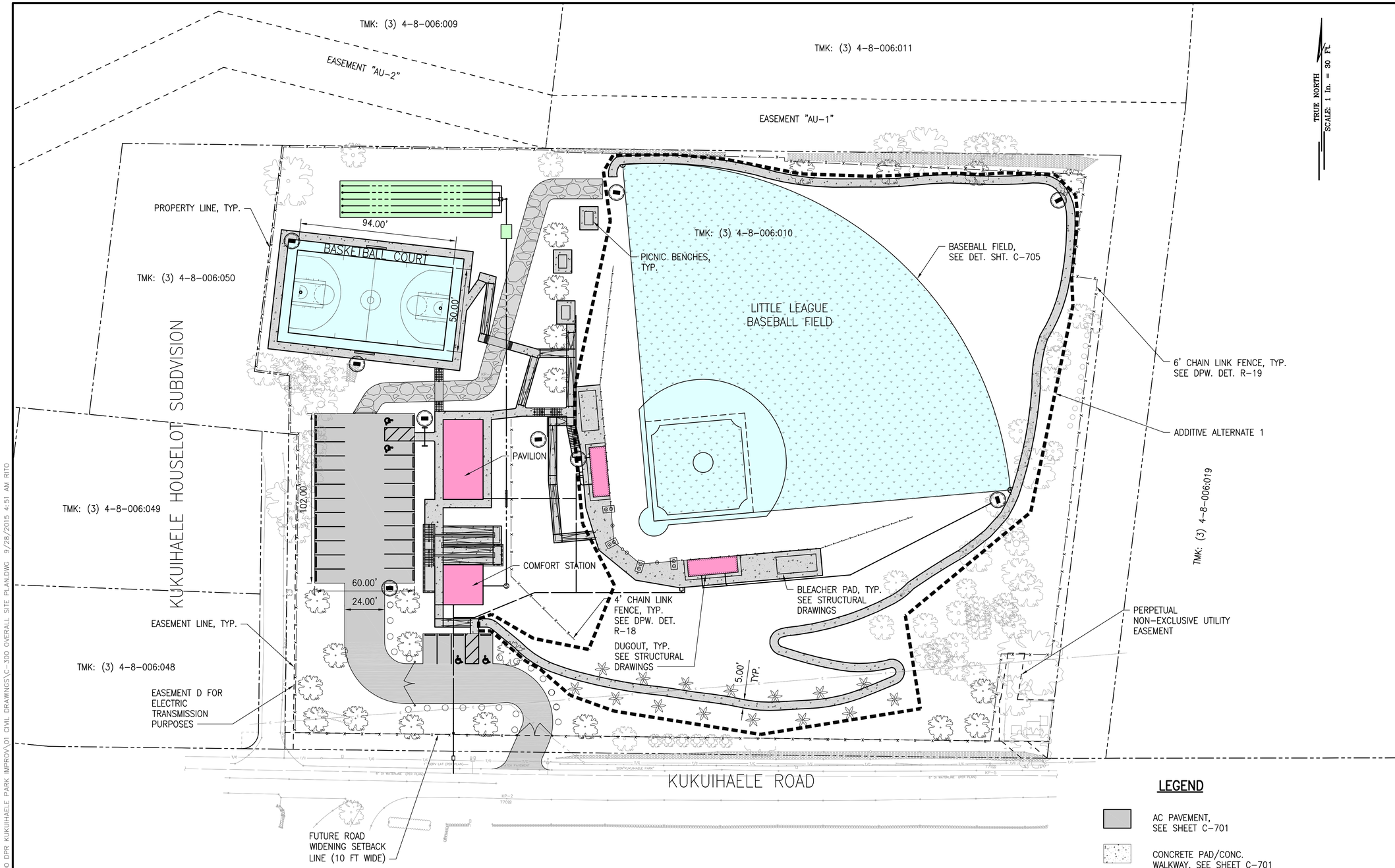
3a: Park entrance▲ ▼ 3b. Southeastern portion of park, with baseball field on left

Figure 3. Project Site Photos

3c. Former site of teachers' cottages ▲ ▼ 3d. View to southeast within park

Figure 3. Project Site Photos

3e. Driveway along northern boundary of park, view to west. ▲ ▼ 3f. Basketball court



NEW STRUCTURES

NEW BASKETBALL COURT, NEW BASEBALL FIELD

NEW WALKWAYS, RAMPS, PARKING LOT, SLABS, AND ROADS

IMPROVED WASTEWATER SYSTEM

OVERALL SITE PLAN

SCALE: 1" = 30'

LEGEND

- AC PAVEMENT, SEE SHEET C-701
- CONCRETE PAD/CONC. WALKWAY, SEE SHEET C-701
- CHAIN LINK FENCE
- BASEBALL BACKSTOP PROTECTIVE FENCE, SEE SHEET C-702

GRAPHICAL SCALE:

30' 15' 0 30' 60'

SCALE: 1" = 30'

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ALISTAIR W. DRAKE LICENSED PROFESSIONAL ENGINEER NO. 13059-C HAWAII USA

EXPIRATION DATE: 04.30.16

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND WILL BE UNDER MY OBSERVATION DURING CONSTRUCTION OF THIS PROJECT. OBSERVATION OF CONSTRUCTION AS PER DEFINED IN SECTION 13N OF THE RULES OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS OF THE STATE OF HAWAII.

MARK	DATE	DESCRIPTION

REVIEWED:

DEPARTMENT OF PARKS AND RECREATION DATE

COUNTY OF HAWAI'I
DEPARTMENT OF PARKS AND RECREATION
AUPUNI CENTER, 101 PAUAHI STREET, SUITE 6, HILO, HAWAII

KUKUIHAELE PARK IMPROVEMENTS

HAMAKUA, HAWAII

TMK: (3) 4-8-006:010

JOB NO.: PR-4342

OVERALL SITE PLAN

DESIGNED BY: RM
DRAWN BY: KS
CHECKED BY: AWD

SHEET NO. C-300

8 OF 77 SHEETS

DATE: 09/29/15

W:_CIVIL 3D PROJECTS\2015_096.000 DPR KUKUIHAELE PARK IMPROV\01 CIVIL DRAWINGS\C-300 OVERALL SITE PLAN.DWG 9/28/2015 4:51 AM RITO

This plan illustrates locations of trees to be removed and new trees to be planted.
Refer to main, colored plan for proposed feature locations.

TMK: (3) 4-8-006:009

EASEMENT "AU-2"

RELOCATE BOULDERS PER LANDSCAPE PLAN

PROPERTY LINE, TYP.

TMK: (3) 4-8-006:050

NEW BASKETBALL COURT

KUKUIHAELE HOUSELOT SUBDIVISION

TMK: (3) 4-8-006:049

PAVILION

COMFORT STATION

EASEMENT LINE, TYP.

TMK: (3) 4-8-006:048

EASEMENT D FOR ELECTRIC TRANSMISSION PURPOSES

PROTECT EXIST. UTILITY POLE

PICNIC BENCHES, TYP.

TMK: (3) 4-8-006:010

LITTLE LEAGUE BASEBALL FIELD

RELOCATE BOULDERS, PER LANDSCAPE PLAN

4' CHAIN LINK FENCE

DUGOUT, TYP.

JOGGING PATH, TYP.

RELOCATE 7 BOULDERS PER LANDSCAPE PLAN

EXISTING RIP RAP TO REMAIN, TYP.

6' CHAIN LINK FENCE, TYP.

RELOCATE 10 BOULDERS PER LANDSCAPE PLAN

BLEACHERS, TYP.

TMK: (3) 4-8-006:019

KUKUIHAELE ROAD

PERPETUAL NON-EXCLUSIVE UTILITY EASEMENT

EXIST. UTILITY CABINETS CONCRETE PADS, AND WALL ENCLOSURE TO REMAN

FUTURE ROAD WIDENING SETBACK LINE (10 FT WIDE)

TRUE NORTH

SCALE: 1 in. = 60 FT.

LEGEND

- NEW PALM TREE
- NEW KOA TREE
- PROPERTY LINE/RIGHT-OF-WAY
- EXIST. TREES TO BE REMOVED
- AC PAVEMENT
- CONCRETE PAD/CONC. WALKWAY
- CHAIN LINK FENCE
- 6' BASEBALL BACKSTOP PROTECTIVE FENCE

GRAPHICAL SCALE:

60' 30' 0 60' 120'

SCALE: 1" = 60'

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www.ssfm.com

EXPIRATION DATE: 04.30.16

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND THE CONSTRUCTION OF THIS PROJECT WILL BE OBSERVED BY ME OR MY REPRESENTATIVE TO ASSURE COMPLIANCE WITH THE PLANS, SPECIFICATIONS, AND SURVEYS OF THE ARCHITECTS AND SURVEYORS OF THE STATE OF HAWAII.

MARK	DATE	DESCRIPTION

REVIEWED: DEPARTMENT OF PARKS AND RECREATION DATE

COUNTY OF HAWAI'I
DEPARTMENT OF PARKS AND RECREATION
AUPUNI CENTER, 101 PAUAHI STREET, SUITE 6, HILO, HAWAII

KUKUIHAELE PARK IMPROVEMENTS

HAMAKUA, HAWAI'I

TMK: (3) 4-8-006:010

JOB NO.: PR-

DESIGNED BY: RM
DRAWN BY: KS
CHECKED BY: AWD
SHEET NO.

1 OF 1 SHEETS

DATE: 09/20/15

W:_Civil 3D Projects\2015_096.000 DPR Kukuihaele Park Improv\02 Exhibits\Landscape Exhibit.dwg, 9/20/2015 9:05:12 AM, rito

considering comments to the Draft EA, the approving agency concludes that no significant impacts would be expected to occur, then the agency will issue a Finding of No Significant Impact (FONSI), and the action will be permitted to proceed to other appropriate approval and permit processes. If the agency concludes that significant impacts are expected to occur as a result of the Proposed Action, then an Environmental Impact Statement (EIS) will be prepared.

1.3 Public Involvement and Agency Coordination

The following agencies and organizations were consulted by letter during development of the Environmental Assessment.

State:

- Department of Health, Environmental Health Administration
- Department of Land and Natural Resources, Chairperson and State Historic Preservation Division
- Department of Transportation, Highways Division
- Office of Hawaiian Affairs

County:

- Civil Defense Agency
- County Councilmember Valerie Poindexter
- Department of Public Works
- Department of Water Supply
- Fire Department
- Planning Department
- Police Department

Private:

- Sierra Club
- Six adjacent property owners

Responses received from early consultation are contained in Appendix 1a.

1.4 Cost and Schedule

Shortly after the EA is complete and necessary permits are obtained, construction will begin. The improved facility is scheduled to be completed by late 2016. The cost of of the improvements is currently estimated at $2.5 million, a figure which will be refined as part of final design. The project may include phasing of certain improvements to ensure the project's viability should actual constructions exceed available funding. While the goal is to construct the improvements in their totality via one project, a disadvantageous bidding environment combined with limited funding may necessitate the project being delivered via a phased approach over several years. It is anticipated that the project will be prepared with a base bid and one or more alternate bid items representing distinct scopes of work based on priority of need.

PART 2: ALTERNATIVES

2.1 No Action Alternative

Under the No Action Alternative, the County of Hawai‘i would not provide any improvements at Kukuihaele Park. Recreational facilities in this community, which currently also help service the larger town of Honokaa and the villages in between, would continue to be substandard. No regulation Little League or senior softball games could take place and the basketball court would be substandard. No pavilion for community events would be provided. There would be no comfort station to replace the portable toilets. Although the park would still have value for passive recreation such as dog-walking, picnicking and events where residents provided their own portable shelters, it would not fulfill the needs of recreational users who have repeatedly requested improvements of the County. Under the No Action Alternative, this relatively unimproved park would continue to be inaccessible to persons with disabilities. The improvements associated with making a park accessible that also directly benefit families with small children in strollers, temporarily disabled persons, and others, would not occur. The socioeconomic benefits that ensue from needed recreational facilities would fail to accrue. Conversely, there would be no disturbance of the existing ground surface or vegetation, no impacts to traffic in the area, and no disturbance to neighbors. The No Action Alternative provides a basis for comparing the impacts of the proposed project.

2.2 Alternative Locations

If the proposed improvements planned for Kukuihaele Park were not built here, it is not infeasible that another site could be developed with similar facilities. P&R understands that residents are concerned about the improved park potentially diverting tourists drawn by the Waipi‘o Lookout who require restrooms into the community, bringing undesired traffic, a subject that is discussed in Sections 3.2.1 and 3.3.2, below. One way to avoid this possible adverse effect would be to develop a new park in an area outside the village, where land is available. However, there are many disadvantages to having such facilities elsewhere that have led P&R to not seek other sites. First, the County does not have other existing property in the area and would need to acquire the property to build another park. This process would require more funding and could take a number of years to complete. Second, it would be difficult to justify another community park facility in an area with the limited population of roughly 500 that would be served by the park. Kukuihaele Park has provided a recreational function for this community for at least eight decades and is cherished by its residents, particularly those born and raised here, some of whom attended school next door. It is P&R’s policy to emphasize more intensive use of valued existing recreational properties in order to save money in development costs and maintenance. Two parks would be inefficient to fund and maintain. The high costs of developing another new park would likely mean that Kukuihaele Park itself would lack facilities. That would mean that the park that currently exists in the center of the community would be neglected in favor of a park that would be accessible mainly to motorists. Rather than relocate the primary recreational facility outside the community, P&R believes that it is more cost-effective and rational to continue to seek funding for development of the Waipi‘o Lookout facilities and particularly an interpretive center at the former Rice Property near the lookout. Ultimately, the needs of both residents and visitors would be better served by this strategy.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

The location for the Proposed Action is referred to throughout this EA as the *project site* (see Figures 1-3). The term *project area* refers generally to this part of the Hāmākua District.

3.1 Physical Environment

3.1.1 Climate, Geology, Soils and Geologic Hazards

Environmental Setting

The climate at the project site, which is 700 feet above sea level, is warm and humid. The average annual rainfall is about 80 inches and the mean annual temperature is approximately 74 degrees F. (Giambelluca et al 2013; UH Hilo-Geography 1998). Geologically, the project area is located on the lower flank of Mauna Kea volcano, on weathered basalts from Pleistocene-era lava flows of the Hāmākua Volcanic series (Wolfe and Morris 1996). The well-weathered soil on the project site is classified by the U.S. Natural Resources Conservation Service (formerly Soil Conservation Service) as Paauhau medial silty clay loam, 10 to 20 percent slopes. This soil is permeable and well-drained. In a representative profile, the surface layer is silty clay loam underlain by layers of hydrous clay loam and then bedrock at about four feet. This soil is currently used for grazing and vegetable crops and was formerly used extensively for irrigated sugarcane (U.S. Soil Conservation Service 1973). Specific laboratory testing of soil borings by a geotechnical firm revealed relatively high in-situ moisture contents and low dry densities. Underlying the soil was completely to moderately weathered bedrock, and no seepage or evidence of groundwater was encountered.

The entire Island of Hawai‘i is subject to geologic hazards, especially lava flows and earthquakes. The U.S. Geological Survey assesses volcanic hazard in this area of Hāmākua as Zone 8, on a scale of ascending risk from 9 to 1 (Heliker 1990:23). The low hazard risk is based on the fact that Mauna Kea is presently considered a dormant volcano. Only a few percent of Zone 8 areas have been covered by lava in the past 10,000 years, the zone is thus considered among the least hazardous areas on the island. As such, there is negligible risk of lava inundation over relatively short time scales in the project area.

The Island of Hawai‘i experiences high seismic activity and is at risk from major earthquake damage (USGS 2000), especially to structures that are poorly designed or built, as the 6.7-magnitude quake of October 15, 2006 demonstrated. The portion of the project site proposed for improvements is graded and flat to moderately sloping. There are appropriate setbacks to surrounding steeper slopes. No evidence of mass wasting is apparent, and P&R has no records of occurrences, including after the 2006 earthquake. There does not appear to be any risk to damage on the site from subsidence, landslides or other forms of mass wasting.

Impacts and Mitigation Measures

Geologic conditions impose no constraints on the Proposed Action, and the continued utilization and improvement of the area for recreational purposes is not imprudent to undertake. The results of fieldwork and laboratory testing indicated that from a geotechnical viewpoint, the site can generally be developed as planned. Conventional shallow foundations, such as spread footings or thickened slab foundations, may be used to support the proposed structures. Most of the surface of Hawai‘i Island is subject to eventual lava inundation, and all recreational facilities face some level of risk. Given the need for improved sports and gathering space facilities in the area, the County has determined that it is sensible to improve the park. All facilities will be designed based on requirements of the 2006 International Building Code as adopted and amended by Chapter 5 (Building) of the Hawai‘i County Code to ensure appropriate design. No mitigation measures related to geologic conditions are expected to be required.

3.1.2 Drainage, Water Features and Water Quality

Existing Environment

The Hāmākua District is heavily dissected by a radial network of sub-parallel permanent and intermittent streams, typical of weathered volcanoes in humid climates. The project site is about 0.3 miles from the shoreline and over 500 feet from any permanent or intermittent streams. No ponds, lakes, wetlands or other water bodies are on or near the site. According to official flood maps (FEMA FIRM Panel 1551660200 C, dated September 16, 1988), the project site is within Flood Zone X, outside of the 100-year or 500-year floodplain.

Impacts and Mitigation Measures

Land clearing and construction activities, including parking, would occur in an area greater than one acre, and thus will require a National Pollutant Discharge Elimination System (NPDES) permit to ensure that erosion and sedimentation impacts to adjacent waters will be minimized. Plans submitted as part of the application for this permit and a County grading permit will specify practices to minimize the potential for sedimentation, erosion and pollution of coastal waters. The County will ensure that its contractor shall perform all earthwork and grading in conformance with:

(a) “Storm Drainage Standards,” County of Hawai‘i, October, 1970, and as revised.
(b) Applicable standards and regulations of Chapter 27, “Flood Control,” and Chapter 10, “Erosion and Sedimentation Control,” of the Hawai‘i County Code.
(c) Conditions of an NPDES permit.

Best Management Practices will include, but may not be limited to, the following practices:

- The contractor will install compost filter socks at certain areas of the construction site to restrict sediment movement.
- The contractor will construct and utilize a stabilized construction entrance to minimize tracking material offsite onto the adjacent road.

- Construction activities with the potential to produce polluted runoff will not be allowed during unusually heavy rains or storm conditions that might generate storm water runoff.

3.1.3 Flora, Fauna and Ecosystems

Existing Environment

The natural vegetation of this part of Hāmākua was most likely sub-montane rain forest dominated by *ʻōhiʻa* (*Metrosideros polymorpha*) and *koa* (*Acacia koa)* (Gagne and Cuddihy 1990). These original communities were long ago eradicated or heavily degraded by sugar cane cultivation, cattle grazing, and clearing for small farms and residences. The vegetation of communities like Kukuihaele is now either managed (i.e., farms, pasture or landscaped grounds) or adventive "communities" of various alien weeds. Small remnants of native forest remain only in the far *mauka* areas of Hāmākua.

All locations on the project site have been utilized as a school and/or County park for up to a century, and the terrain and vegetation of the park have both been heavily modified. Most of the vegetation is managed park landscaping, primarily lawn grasses and ornamental trees and shrubs. Several areas that are not utilized for recreational purposes contain weedy herbaceous or woody vegetation; it appears that community planting efforts have landscaped some of the park with ornamental and fruit-bearing species, some of them Polynesian. Trees and shrubs are almost all non-native and include avocado (*Persea Americana*), Chinese banyan (*Ficus microcarpa*), octopus tree (*Schefflera actinophylla*) and various palms in the genera *Livistona*, *Roystonea* and A*rchontophoenix* (Chinese fan, royal and king palms). Only three native plants were observed, all of them species that are considered common (the native *koa* tree was planted on the site). No rare threatened or endangered plant species were observed. A full list of plants observed on the site is included as Table 1.

The project site is not valuable habitat for native fauna. The six species of birds observed on the site during two visits totaling approximately 3 hours are listed in Table 2. All were non-native, and the most abundant during observation were Common Myna (*Acridotheres tristis*) and Japanese White-eye (*Zosterops japonicus*). A larger number of non-native bird species would probably be observed during additional observations. Only two native birds are highly likely to utilize the park. The Pacific Golden-Plover or *kolea* (*Pluvialis fulva*) is a migratory bird that resides in Hawaiʻi from September to April and commonly forages or rests in grassy areas, particularly favoring the mown grasses of parks. Also known to be present in the area is the endangered Hawaiian Hawk (*Buteo solitarius*), which is found throughout wild, agricultural and urban landscapes on the Big Island wherever trees are present. Although they would unlikely to ever be observed at the site, it is also possible that the endangered Hawaiian Petrel (*Pterodroma sandwichensis*), and the threatened Newell's Shearwater (*Puffinus auricularis newelli*) may occasionally overfly the site at altitudes of about 100 feet as they pass between nesting areas on high mountains to foraging grounds in the ocean. No suitable nesting habitat for these seabird species is present at or near the project site.

Table 1 Plants Observed at Kukuihaele Park August 2015

Scientific Name	Family	Common Name	Life Form	Status*
Acacia confusa	Fabaceae	Formosan Koa	Tree	A
Acacia koa	Fabaceae	Koa	Tree	E
Acalypha hispida	Euphorbiaceae	Chenille Plant	Shrub	A
Ageratum conyzoides	Asteraceae	Ageratum	Herb	A
Ageratum houstonianum	Asteraceae	Ageratum	Herb	A
Albizia chinensis	Fabaceae	Silk tree	Tree	A
Aleurites moluccana	Euphorbiaceae	Kukui	Tree	A
Alocasia macrorrhizos	Araceae	‘Ape	Shrub	A
Aloe vera	Agavaceae	Aloe	Shrub	A
Alpinia zerumbet	Zingiberaceae	Shell Ginger	Herb	A
Ananas comosus	Bromeliaceae	Pineapple	Shrub	A
Archontophoenix alexandrae	Arecaceae	King Palm	Tree	A
Artocarpus altilis	Moraceae	Breadfruit	Tree	A
Artocarpus heterophyllus	Moraceae	Jackfruit	Tree	A
Begonia sp.	Begoniaceae	Begonia	Herb	A
Bidens alba	Asteraceae	Bidens	Herb	A
Bidens pilosa	Asteraceae	Spanish Needle	Herb	A
Bougainvillea sp.	Nyctaginaceae	Bougainvillea	Shrub/ Vine	A
Breynia disticha	Phyllanthaceae	Snowbush	Shrub	A
Buddleia asiatica	Buddleiaceae	Dog Tail	Shrub	A
Cajanus cajan	Fabaceae	Pigeon Pea	Shrub	A
Canavalia cathartica	Fabaceae	Maunaloa	Vine	A
Carica papaya	Caricaceae	Papaya	Tree	A
Chamaecrista nictitans	Fabaceae	Partridge Pea	Herb	A
Chamaesyce hirta	Euphorbiaceae	Hairy Spurge	Herb	A
Colocasia esculenta	Araceae	Taro	Shrub	A
Commelina diffusa	Commelinaceae	Honohono	Herb	A
Conyza bonariensis	Asteraceae	Conyza	Herb	A
Cordyline fruticosa	Agavaceae	Ti	Shrub	A
Crinum sp.	Amaryllidaceae	Spider Lily	Herbs	A
Crotalaria incana	Fabaceae	Rattlepod	Herb	A
Cyperus polystachyos.	Cyperaceae	Pycreus	Herb	I
Delonix regia	Fabaceae	Royal Poinciana	Tree	A
Desmodium triflorum	Fabaceae	Desmodium	Herb	A
Dichorisandra thyrsiflroa	Commelinaceae	Blue Ginger	Herb	A
Dracaena marginata	Agavaceae	Dracena	Shrub	A
Drymaria cordata	Caryophyllaceae	Drymaria	Herb	A
Eleusine indica	Poaceae	Wiregrass	Herb	A
Emilia sonchifolia	Asteraceae	Flora’s Paintbrush	Herb	A
Epipremnum pinnatum	Araceae	Pothos	Vine	A
Eragrostis tenella	Poaceae	Love Grass	Herb	A
Erechtites hieracifolia	Asteraceae	Fireweed	Herb	A
Eucalyptus saligna	Myrtaceae	Eucalyptus	Tree	A
Euphorbia heterophylla	Euphorbiaceae	Kaliko	Shrub	A
Falcataria moluccana	Fabaceae	Albizia	Tree	A
Ficus microcarpa	Moraceae	Chinese Banyan	Tree	A
Ficus sp.	Moraceae	Ficus	Tree	A

Table 1, continued				
Scientific Name	**Family**	**Common Name**	**Life Form**	**Status***
Grevillea robusta	Proteaceae	Silver Oak	Tree	A
Indigofera suffruticosa	Fabaceae	Indigo	Herb	A
Justicia betonica	Acanthaceae	White Shrimp Plant	Shrub	A
Kyllinga brevifolia	Cyperaceae	Kyllinga	Herb	A
Livistona chinensis	Arecaceae	Chinese Fan Palm	Tree	A
Megathyrus maximus	Poaceae	Guinea Grass	Herb	A
Mimosa pudica	Fabaceae	Sleeping Grass	Herb	A
Musa (x) paradisiaca	Musaceae	Banana	Shrub	A
Nephrolepis multiflora	Nephrolepidaceae	Sword Fern	Fern	A
Paederia foetida	Rubiaceae	Maile Pilau	Vine	A
Paspalum conjugatum	Poaceae	Hilo Grass	Herb	A
Persea americana	Lauraceae	Avocado	Tree	A
Phymatosorus grossus	Polypodiaceae	Maile Scented Fern	Fern	A
Plantago lanceolata	Plantaginaceae	Plantago	Herb	A
Polygala paniculata	Polygalaceae	Polygala	Herb	A
Psidium guajava	Myrtaceae	Guava	Tree	A
Pteris vittata	Pteridaceae	Ladder Brake	Fern	A
Roystonea regia	Arecaceae	Royal Palm	Tree	A
Rubus rosifolius	Rosaceae	Thimbleberry	Herb	A
Sacciolepis indica	Poaceae	Glenwood Grass	Herb	A
Samanea saman	Fabaceae	Monkeypod	Tree	A
Schefflera actinophylla	Araliaceae	Octopus Tree	Tree	A
Schinus terebinthifolius	Anacardiaceae	Christmas Berry	Tree	A
Senecio madagascariensis	Asteraceae	Fireweed	Vine	A
Sida rhombifolia	Malvaceae	Broom Weed	Herb	A
Solanum americanum	Solanaceae	Popolo	Herb	I
Sonchus oleraceus	Asteraceae	Sow Thistle	Herb	A
Spathodea campanulata	Bignoniaceae	African Tulip	Tree	A
Sphagneticola trilobata	Asteraceae	Wedelia	Herb	A
Stachytarpheta sp.	Verbenaceae	Stachytarpheta	Shrub	A
Stictocardia beraviensis	Convolvulaceae	Crimson Morning Glory	Vine	A
Synedrella nodiflora	Asteraceae	Synedrella	Herb	A
Syngonium podophyllum	Araceae	Arrowhead Plant	Vine	A
Syzygium cumini	Myrtaceae	Java Plum	Tree	A
Vigna luteola	Fabaceae	Hairypod Cowpea	Vine	A

*A = alien, E = endemic, I = indigenous, End = Federal and State listed Endangered Species (none present)
Also observed: various ornamental, non-native unkeyed bromeliads

Table 2. Bird Species Observed on Project Site

Scientific name	Common name	Status
Acroditheres tristis	Common Myna	A
Cardinalis cardinalis	Northern Cardinal	A
Gallus gallus	Chicken	A
Geopelia striata	Zebra Dove	A
Meleagris gallopavo	Wild Turkey	A
Zosterops japonicus	Japanese White-eye	A

A= Alien

The endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) likely forages in the area and could conceivably roost on some of the tall vegetation on the site. Apart from the Hawaiian hoary bat, all mammals in the project area are introduced species, including domestic or feral cats (*Felis catus*), small Indian mongooses (*Herpestes a. auropunctatus*) and various species of rats (*Rattus* spp.). None are of conservation concern and all are deleterious to native flora and fauna.

Impacts and Mitigation Measures

Because of the lack of rare, threatened or endangered native plants or intact native ecosystems on the project site, the Proposed Action would have no adverse impacts to native plants or vegetation habitat. Mitigation measures will be instituted in order to avoid impacts to Hawaiian Hawks, Hawaiian hoary bats, and listed seabirds:

- There will be no clearing of woody vegetation taller than 15 feet during the bat pupping season, which runs from June 1 through September 15 each year.
- If earthmoving or tree cutting is scheduled during the breeding season for Hawaiian Hawks (March through the end of September), the County will arrange for a hawk nest search to be conducted by a qualified biologist, and if hawk nests are present within 100 yards of any portion of the project site, all land clearing activity will cease until the expiration of the breeding season.
- All outdoor lighting will be required to be shielded in conformance with the Hawaiʻi County Outdoor Lighting Ordinance to reduce the risk that seabirds may be attracted to and then disoriented by the lighting.
- No nighttime construction work will be allowed during the seabird-fledging season, which runs from September 15 through December 15 each year.

3.1.4 Air Quality, Noise, and Scenic Resources

Environmental Setting

Air pollution in Hāmākua is minimal, and is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that occasionally blankets the project area. The persistent tradewinds keep the project area free of vog for most of the year.

Noise on the project site is low and derived mainly from motor vehicles, with occasional noise from park activities and residences, farms and road maintenance.

The project site is on a rural road in the scenic village of Kukuihaele. As illustrated in Figure 3, the site has pleasant views through to the ocean. The park itself also represents open space and a coastal view corridor for drivers on Kukuihaele Road or those residing *mauka* of the park. The Hawaiʻi County General Plan does not specifically identify areas of natural beauty within Kukuihaele itself, although the view from the Waipiʻo Lookout is listed as an example of natural beauty that require consideration during development approvals. The park is not visible from the lookout.

Impacts and Mitigation Measures

During construction, there would be temporary and very minor effects to noise, air quality and visual quality. These activities could affect park users, drivers on Kukuihaele Road, and local residents. Construction will likely include compressors, vehicles and equipment engine operations, the specifics of which are dependent upon means and methods utilized by the contractor employed by the County. These activities can generate noise exceeding 95 decibels at times, impacting nearby sensitive noise receptors on the margins of the development. State law requires that whenever construction projects have noise that is expected to exceed the Department of Health's (DOH) "maximum permissible" property-line noise levels, contractors are required to consult with DOH per Title 11, Chapter 46, HAR (Community Noise Control) prior to construction. DOH then reviews the proposed activity, location, equipment, project purpose and timetable in order to decide whether a permit is necessary and what conditions and mitigation measures, such as restriction of equipment type, maintenance requirements, restricted hours, and portable noise barriers, will be necessary. The County will require the contractor to restrict construction to daylight hours, and also require the contractor to consult with DOH to determine any other appropriate restrictions.

There is some potential for fugitive dust emissions during grading and construction. Short-term direct and indirect impacts on air quality could occur during construction, principally through fugitive dust from vehicle movement and soil excavation, and exhaust emissions from onsite construction equipment. The State of Hawai‘i Air Pollution Control Regulations (Chapter 11-60, HAR) prohibit visible emissions of fugitive dust from construction activities beyond the property line. The grading notes on the construction plans will direct the contractor to keep the area free of dust nuisances and to conduct all work in conformance with Chapter HAR 11-60.1, "Fugitive Dust."

Operationally, the proposed improvements would not substantially affect air quality, noise levels or scenic sites recognized in the Hawai‘i County General Plan. Although baseball fields generate some dust during and between uses, it is generally not in significant enough amounts to require mitigation, such as field watering, although this can be undertaken if necessary. An inevitable consequence of increased use of a park is increased noise. As discussed in Section 3.3.2, there would also be an increase in vehicular traffic associated with use of the pavilion and comfort station. This could cause slight increases in noise and exhaust emissions, but such increases are expected to result in levels that are typical in rural County parks throughout the island, which are modest enough to not require mitigation. As discussed in Section 3.1.3, above, a number of trees including avocado, Chinese banyan, octopus tree, Chinese fan palms, royal palms and king palms are present on the property. The improvements have been designed to retain some trees but remove others (see Site Plans in Figure 4 for details) to accommodate new facilities and also to reduce maintenance and hazards. The scenic character of the area would be modified due to removal of many of the existing trees, which would be compensated for by improved coastal view planes and landscaped vegetation more appropriate to the area, including *koa* and palms that would be installed as part of the project. Due to the isolated location within Kukuihaele village, the modest scale of the proposed facilities and new development that has occurred below the park within the coastal viewplane, no aspect of the action would detract from scenic views identified in the Hawai‘i County General Plan.

3.1.5 Hazardous Substances, Toxic Waste and Hazardous Conditions

Environmental Setting, Impacts and Mitigation Measures

The context of the project site, coupled with the absence of any known use of most of the site for other than limited school use prior to 1965 and recreational use since then suggests a low probability for hazardous materials. Additionally, visual surveys of the site and its surroundings during field investigations for the EA did not reveal any hazardous materials, or any uses, structures, equipment, or storage containers that might be indicative of hazardous material use. Therefore, based upon known prior and present use of the project site, no hazardous substances, toxic wastes, or hazardous conditions are expected to be present. If evidence of suspicious materials or conditions appears during additional survey, design, or construction, P&R will undertake a systematic assessment of the property.

3.2 Socioeconomic and Cultural

3.2.1 Socioeconomic Characteristics

As of the 2010 census, Kukuihaele had 226 inhabitants, with a diverse population in which the most represented ethnic group is “Two or more races” at 45.2%, followed by White (31.8%) and Asian (14.0%). Over 53% of the population is male, and almost 45% of the population is older than 45 years, higher than State and County averages and perhaps reflecting the plantation heritage. Kukuihaele Park is one of two public recreational facilities within area west of Honokaa through Kukuihaele, the other being the Waipiʻo Lookout. The latter park is highly visited by tourists taking in the magnificent view of the Waipiʻo Valley and the cliffs to the northwest. It is also the staging area for trips into Waipiʻo Valley for both visitors and island residents, who go to enjoy the beach, fish and surf. Recreational area at Waipiʻo Lookout, which is a steep and small property, is very restricted.

As discussed in Section 1.1, the improvements are being funded by Ordinance No. 15-58, which was passed unanimously by the Hawaiʻi County Council on June 2, 2015. The funding request was initiated by Councilmember Valerie Poindexter in response to calls from constituents. She held a public meeting in Kukuihaele to gauge community opinions about the project, reports of which provided initial information on community sentiment. In addition, various members of the public have kindly responded to the request for early consultation conducted as part of the EA, sharing diverse viewpoints.

Impacts

The improvements to Kukuihaele Park would benefit most area residents, who have repeatedly requested County officials for active recreational facilities. The project would render all of the buildings and amenities accessible to persons with disabilities, which has side benefits to families with small children in strollers, temporarily disabled (injured) persons, and others.

Several residents who provided informal input during the early consultation process expressed concern about the park improvements. As with any park project that draws more users, surrounding residents will experience some degree of increased noise and traffic. These adverse effects should be considered in the context of a park that from the 1930s through the 1980s had much higher levels of use. Many surrounding

residents who have been part of the Kukuihaele community for over five decades took the view that improving the park would return it to its former central place in the social life of the community, when up to five baseball teams called the field home. Parks also have the potential to attract loiterers, drug users, and homeless or others who may illegally camp. The adverse effects will be mitigated by the proposed improvements to security and regulation. The park will be fenced and gated and access will be restricted to daytime and early evening hours. With clear rules, signage and gates, unauthorized use after hours can be more easily dealt with by the Police Department than the current situation.

The extent to which the improved park would be utilized by visitors is unknown but is expected to be modest. Currently, many visitors drive on Kukuihaele Road to shop at local stores and/or take an alternate way to or from the Waipiʻo Lookout, another County recreational facility. Many of these visitors require restrooms. Although a widely used comfort station is available at Waipiʻo Lookout, it is down a steep path on a small land area that makes it technically infeasible to make this comfort station accessible. If a comfort station were available at the improved Kukuihaele Park, it might induce a stop. This would be particularly likely if the availability of a restroom became well known through signage, guidebooks, smart-phone apps, etc. A few Kukuihaele residents expressed concern about drawing traffic and strangers into their community. The County of Hawaiʻi maintains that providing accessible facilities at Kukuihaele Park, which is close proximity to Waipiʻo Lookout, serves the greater good by providing persons unable to use the restrooms at Waipiʻo equivalent accommodations nearby. As the site and space constraints at Kukuihaele Park are not conducive to buses and large vans conveying persons to use the comfort station facilities, it is unlikely that all but the occasional visitor would take advantage of them. Nevertheless, the project would almost certainly place at least some small amount of additional traffic on Kukuihaele Road. As discussed in more detail in Section 3.3.2 below, the road is narrow, and residents might be inconvenienced by additional traffic. Conversely, merchants who rely on tourist drive-by traffic could benefit from increased business and sales, as would local employees. The availability of the Draft EA was made known to local residents and merchants in order to solicit their opinion on the net social effects of the proposed park improvements.

3.2.2 Cultural Resources

This section utilizes land and park records and a variety of previous studies concerning Hāmākua and the Kukuihaele area, augmented by interviews with local residents.

Cultural and Historical Background

The project site is located in the modern district of Hāmākua in an area that was formerly heavily settled and utilized for dryland taro, less than a mile from Waipiʻo – one of the most celebrated wet taro valleys in Hawaiʻi Nei. After the first Polynesians arrived in Hawaiʻi, they shaped and utilized the natural environment over generations to provide all they needed for sustenance and survival. In the process they created a uniquely Hawaiian culture that was wholly adapted to the environment. The brief generalized cultural sequence that follows below provides a time frame for the peopling of Hawaiʻi, the development of Hawaiian culture, the expansion and intensification of the Hawaiian population, and the resulting stresses on it from the earliest Polynesian settlers to the time of European Contact.

The generalized cultural sequence that follows is based on Kirch's (1985) model, but amended to include recent revisions offered by Kirch (2011). The initial settlement of Hawai‘i is believed to have occurred from the southern Marquesas Islands somewhere around 1000 AD. This was a period of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment. Their ancient and ingrained philosophy of life tied them to their environment and kept order, which was further assured by the conical clan principle of genealogical seniority. The Hawaiians brought from their homeland certain universal Polynesian customs: the major gods Kāne, Kū, and Lono; the *kapu* system of law and order; cities of refuge; the *‘aumakua* concept; and the concept of *mana*. Initial permanent settlements in the islands were established at sheltered bays with access to fresh water and marine resources. Communities shared extended familial relations and there was an occupational focus on the collection of marine resources. Over a period of several centuries the areas with the richest natural resources became populated and perhaps even crowded, and there was an increasing separation of the chiefly class from the common people. As the environment reached its maximum carrying capacity, the result was social stress, hostility, and war between neighboring groups. Soon, large areas of Hawai‘i were controlled by a few powerful chiefs.

The Development Period brought about a uniquely Hawaiian culture. The portable artifacts found in archaeological sites of this period reflect not only an evolution of the traditional tools, but some distinctly Hawaiian inventions. The adze (*ko‘i*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. A few areas in Hawai‘i, including the summit region of Mauna Kea, produced quality basalt for adze production. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are *‘ulu maika* stones and *lei niho palaoa*. The later was a status item worn by those of high rank, indicating a trend toward greater status differentiation.

The Expansion Period is characterized by the great social stratification, major socioeconomic changes, and intensive land modification. Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. The greatest population growth occurred during the Expansion Period. Subsistence patterns intensified as crop farming evolved into large irrigated field systems and expanded into the marginal dry land areas. The *loko* or fishpond aquaculture flourished during this period.

For generations following initial settlement, communities were clustered along the watered, windward (*ko‘olau*) shores of the Hawaiian Islands, particularly in such valleys as Waipi‘o, about a mile west of Kukuihaele Park. Along the *ko‘olau* shores, streams flowed and rainfall was abundant, and agricultural production became established. The *ko‘olau* region also offered sheltered bays from which deep sea fisheries could be easily accessed. Nearshore fisheries, enriched by nutrients carried in the fresh water, could be maintained in fishponds and coastal waters. It was around these bays that clusters of family houses could be found. In these early times, Hawai‘i's inhabitants were primarily engaged in subsistence level agriculture and fishing.

During the first couple centuries of habitation, areas with the richest natural resources became populated and perhaps crowded, and archaeological evidence suggests that by A.D. 1200 the

population began expanding to the *kona* (leeward) side and more remote regions of the island. In the sixteenth century the population stabilized and the *ahupuaʻa* land management system was established as a socioeconomic unit.

Over the generations, the ancient Hawaiians developed a sophisticated system of land and resources management. By the time ʻUmi-a-Līloa rose to rule the island of Hawaiʻi around 1525, the island (*moku-puni*) was divided into six districts or *moku-o-loko*. The district of Hāmākua extends from the windward shores across the western slope of Mauna Kea and continues to the summit of Mauna Loa, where Hāmākua is joined by the districts of Kaʻū, Hilo, and Kona. Hāmākua, like other large districts on Hawaiʻi, was subdivided into *ʻokana* or *kalana* (regions of land smaller than the *moku-o-loko*, yet comprising a number of smaller units of land). The *moku-o-loko* and *ʻokana* or *kalana* were further divided into manageable units of land, and were tended to by the *makaʻāinana* (people of the land). Of all the land divisions, perhaps the most significant management unit was the *ahupuaʻa*. This subdivision of land was usually marked by an altar with an image or representation of a pig placed upon it. *Ahupuaʻa* are typically wedge-shaped pieces of land that radiate out from the center of the island, extending to the ocean fisheries fronting the land unit, although many of the "wedges" extend from the sea inland only a limited distance before being cut off by other *ahupuaʻa*.

The *ahupuaʻa* were also divided into smaller individual parcels of land (such as the *ʻili, kōʻele, māla*, and *kīhāpai*, etc.), generally oriented in a *mauka-makai* direction, and often marked by stone alignments (*kuaiwi*). In these smaller land parcels the native tenants tended fields and cultivated crops necessary to sustain their families and the chiefly communities with which they were associated. As long as sufficient tribute was offered and *kapu* (restrictions) were observed, the common people who lived in a given *ahupuaʻa* had access to most of the resources from mountain slopes to the ocean. These access rights were almost uniformly tied to residency on a particular land, and earned as a result of taking responsibility for stewardship of the natural environment, and supplying the needs of the *aliʻi*. Entire *ahupuaʻa*, or portions of the land were generally under the jurisdiction of appointed *konohiki* or lesser chief-landlords, who answered to an *aliʻi-ʻai-ahupuaʻa* (chief who controlled the *ahupuaʻa* resources). The *aliʻi-ʻai-ahupuaʻa* in turn answered to an *aliʻi ʻai moku* (chief who claimed the abundance of the entire district). Thus, *ahupuaʻa* resources supported not only the *makaʻāinana* and *ʻohana* who lived on the land, but also contributed to the support of the royal community of regional and/or island kingdoms. This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resource management planning. In this system, the land provided fruits and vegetables and some meat in the diet, and the ocean provided a wealth of protein resources.

Although in the modern era, the entire village is called Kukuihaele, it actually comprises three *ahupuaʻa*: Kukuihaele, Kanahonua (the site of the park) and Waikoekoe. The latter two *ahupuaʻ*a are less well known, but one can presume that most of the land use patterns in Kukuihaele were also occurring next door. According to Pukui et al (1974), Kukuihaele translates as traveling light (torch), indicating the night marchers of legend who traveled through the area. No definition is given in this source for Kanahonua, but ethnohistorian Kepā Maly suggested that it might signify a "land that stretches out horizontally supporting cloud masses" (Maly 1994:1). Kukuihaele, like most *ahupuaʻa* in Hāmākua, had a very narrow coastal zone at the rocky base of 500-foot tall cliffs. While not inhabited, it was utilized heavily for its marine resources. The fertile land behind the cliffs that Cordy (1994) termed the seaward upland slopes

served as the main farming and housing zone. Dryland taro dominated agriculture, but banana and sweet potato were also important crops. Low stone walls and/or sugar cane "hedges" bordered the fields. Where streams were present, wetland taro cultivation was conducted. Even after its general adoption by many Hawai‘i communities, livestock raising was less common in Hāmākua than elsewhere. This seaward upland slopes also contained the principal round the island trail, which in many areas is now the location of the Hawai‘i Belt Road. Not every small *ahupua‘a* apparently contained a *heiau* (major religious structure). The historian Thomas Thrum reported in 1908 that one had been present in Kukuihaele but was now "gone" (Cordy 1994: 63).

Above the cultivated zone in most *ahupua‘a*, including Kukuihaele, were the forests. The forest zone in Hāmākua was traditionally a location for collecting *wauke* and *mamaki* bark for fish nets and cloth, for bird catching to obtain feathers, and for harvesting *koa* canoe logs. Natural features such as caves as well as temporary open-air shelters were used as short-term habitations during resource extraction expeditions. Access to the upper forest areas would have been along repeatedly used trails, which have left traces on the landscape in many places.

The earliest historical knowledge of Hāmākua comes from legends written by Samuel Kamakau (1961) of a 16th-century chief ‘Umi-a-Liloa (son of Liloa), who at that time ruled the entire island of Hawai‘i. Descendants of Umi and his sister-wife were referred to as "Kona" chiefs, controlling Ka‘ū, Kona, and Kohala, while descendants of Umi and his Maui wife were "Hilo" chiefs, controlling Hāmākua, Hilo, and Puna (Kelly 1981:1). According to Kamakau (1961), they fought over control of the island, desiring access to resources such as feathers, *māmaki* tapa, and canoes on the windward side, and *wauke* tapa and warm lands and waters in leeward areas (Kelly 1981:3). As detailed in Cordy (1994), Waipi‘o was an important polity and sometimes a royal center throughout Hawaiian history.

Waipi‘o is associated with several of the most prominent of the Hawaiian *ali‘i*. It is also noted as a bountiful source of food, especially *kalo* (taro), which figures importantly as not only the staple of sustenance in Hawai‘i but also as a rich cultural symbol. At least 2,600 people occupied the valley. This home of royalty in the time of ‘Umi was also the location of one of the two principal *pu‘uhonua* (places of refuge) on the island of Hawai‘i. There are at least seven *heiau*, including Paka‘alana, the site of the pu‘uhonua. The housing cluster at Napo‘opo‘o, situated where Hi‘ilawe Valley joins Waipi‘o Valley, and Hi‘ilawe and Nanaue Falls, are other frequently mentioned places. Important and storied fishponds and royal bathing ponds are also present.

Dozens of traditional tales of supernatural and historical beings involve Waipi‘o. Notable are Lono, Kane, Kuka‘ilimoku, Kanaloa, Maui,Wakea, Milu, Puapualenalea, Nanaue (or Nenewe), Mo‘ikeha, ‘Olopana, Kiha, Liloa, and ‘Umi. According to a Bishop Museum report on the valley:

> Lono chose as his wife, Kaikilaniali‘iopuna, who lived in a breadfruit grove near Hi‘ilawe Falls. The gods Kane and Kanaloa, along with lesser gods, are said to have resided at Alakahi in Waipi‘o. Maui is supposed to have gained possession of Ipumakania La‘amaomao, the ‘gourd of constant winds,’ from Kalei‘olu, a kahuna in Waipi‘o Valley. Maui eventually dies in Waipi‘o when he tries to steal bananas from some of the gods residing there. In old age, Wakea went to live in Waipi‘o Valley, where he eventually died and then established a kingdom in the land of the dead. He was succeeded as ali‘i of Waipi‘o by Milu. The ali‘i Milu becomes the ruler of the land

> of the dead when he disobeys Kane and is sent to the underworld. There are several versions of the story of the theft of the shell trumpet, Kiha–pu, in Waipiʻo Valley by the man–dog, Puapualenalena. The ali'i are unable to obtain a solid night of sleep because the spirits or gods blow the Kiha–pu all night. Puapualenalena, who is an excellent thief, is asked by an aliʻi, variously reported to be Kiha or Laloa or Hakau, to steal the Kiha–pu, which he successfully accomplishes. As the offspring of a mortal (Kalei) and a shark–god (Kamohoaliʻi), Nanaue lives near a waterfall on the west side of Waipiʻo Valley. Mysterious disappearance of men from the valley are eventually traced to Nanaue, who has a shark's mouth on his back and has developed a taste for human flesh. He escapes to Hana (Lebo et al 1999).

Of historical importance is the fact that, Liloa, who unified the island of Hawaiʻi, lived in Waipiʻo Valley. His son ʻUmi, a great farmer and fisherman who deposed his reportedly cruel brother, was an extremely important *aliʻi* associated with events and structures throughout the island. A *loʻi* (taro patch) in Waipiʻo bears his name.

Ethnohistorical traditions indicate that Waipiʻo was associated with at least nine successive Pili line rulers of Hawaiʻi Island, from Kahaʻimoeleʻa to Umi (from roughly AD 1460 to 1620). Prior to the establishment of these Pili rulers, Waipiʻo was the residential base for powerful local rulers dating back to at least the AD 1200s . The royal residential area is described as being situated toward the mouth of the valley inland of the sand dunes. In this area were also located several *heiau*, a bathing pond, and two large fishponds. Three of these *heiau* are famed *luakini heiau*, and all appear to have remained in use until the abolition of the *kapu* system. Pakaʻalana Heiau was one of the most important national *heiau*. The Pakaʻalana compound, which also seemed to have served as a place of refuge or *puʻuhonua*, contained the royal mausoleum known as Hale o Līloa, which was destroyed in 1830. The sennit-encased remains (*kāʻai*) of Līloa and his grandson are said to have been removed prior to destruction of the mausoleum and taken to the Bishop Museum. Honuaʻula Heiau is said to have been constructed by ʻUmi and the place where he offered the sacrifice of his brother Hākau, who was killed by ʻUmi in the overthrow that led to ʻUmi's succession as ruler. Moaʻula Heiau was repaired and reconsecrated by Kalaniopuʻu sometime around 1780. It was dedicated to the war god Kūkāʻilimoku, and in that ceremony Kalaniopuʻu proclaimed his son Kiwalaʻo heir to the thrown and placed his nephew Kamehameha in charge of the deity. This act is cited as setting the stage for the schism between cousins that eventually led to Kamehameha's rise to power.

Pukui et al. (1976:114) refer to the cliff on the Hāmākua side of Waipiʻo Valley as Koaʻe-kea, and relate that "Kāne and various gods lived at the top of this cliff at a place called Hōkū-welowelo (comet); their conch sounded every night, to the annoyance of Chief Hākau, who ordered the thieving dog, Puapualenalena, to steal it."

Early foreign visitors described the Kukuihaele area as fertile, well-watered and populated. When the Reverend William Ellis of the London Missionary Society passed through Kukuihaele in 1823 on his famous trip around the island, he described the area:

> It was about 5 o'clock in the afternoon of the 16th, when Mr. Thurston and myself left Kapulena. Wishing to spend the Sabbath in the populous village of Waipio, we travelled fast along the narrow paths bordered with long grass, or through the well-cultivated plantations

> of the natives…. In many parts, where the country was level and open, the paths from one village to another were not than a foot wide, and very crooked (Ellis 1963: 254).

In 1832, the Reverend Lorenzo Lyons of the American Board of Commissioners of Foreign Missions (ABCFM) replaced Reverend Dwight Baldwin at Waimea. By 1833, Lyons recorded the following observation about the declining population of Hawai‘i Island, “deaths are more numerous than births. Hence the [native] population is decreasing” (Doyle 1953:72 in Maly 1994:23). In 1834, Lyons relocated his family to Hāmākua, staying near the ‘Ele‘io Church in Kanahonua, which would later become the West Hāmākua Hawaiian Church, also known as the Kukuihaele Church and School, directly across Kukuihaele Road. Governor Kuakini had ordered the construction of the ‘Ele‘io Church in about 1835. Lyons, his wife and son were provided a house to live in by a local chief named Kalaiepu (also spelled Kaleiehu). Of their new accommodations, Lyons wrote the following in his journal:

> . . . The doors were so low that we had to stoop in order to get in. The house had no window. Our bed was made of posts driven into the ground; and poles and leaves and mats. Our humble table was made by myself. We were all alone, with no society save that of the natives. To be without luxuries is no trial, but at first the thoughtlessness of the people was painful. But Mrs. L. worked with the women and children and I with the men. The schools flourished. Singing schools were large and made considerable progress. The people brought all kinds of products to exchange for books. . .
>
> Betsy too loved Hamakua, and wrote: The climate is delightful. We live about a half mile from the ocean, and about two miles from the top of Waipio and Waimanu Palis. From our door we have a view of the precipices beyond. . . (Doyle 1953:74 in Maly 1994:23)

Around this time, Lyons also documented the devastating effects on the Waimea and Hāmākua populations as a result of a mumps epidemic combined with a famine brought on by a worm that had infected the crops. In May of 1835, Lyons and his family moved back to Waimea, prior to his departure he estimated the population of Hāmākua to be a little over 4,000 people (Maly 1994). Lyons visited Kanahonua in August of 1835 and remarked on the construction efforts for the church meeting house, which was “…surrounded by a stone wall put up by convicts such as adulterers, etc. This is not my fault if fault it is – I remonstrated against it” (Doyle 1953:93 in Maly 1994:24). In August of 1837, Lyons slept on the floor of the school house and held meetings at Kukuihaele (Maly 1994). In 1841, Lyons estimated the population of Hāmākua as 3,830 and between 1845 and 1848 his journal entries described the poor health and high mortality rate of the native population as a result of starvation, measles, whooping cough, and dysentery.

By the mid-nineteenth century, the ever-growing population of Westerners in Hawai‘i forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership. In 1848 the *Māhele ‘Āina* became the vehicle for determining ownership of native lands. This change in land tenure was promoted primarily by the missionaries and Western businessmen in the island kingdom. Generally these individuals were hesitant to enter business deals on leasehold land. The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the *konohiki*. The *Māhele* placed all lands in the Kingdom of Hawai‘i in one of three

categories: (1) Crown Lands (for the occupant of the throne); (2) Government Lands; and (3) *Konohiki* Lands. The chiefs and *konohiki* were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. They were also required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission.

In the Mahele, the *ahupuaʻa* of Kanahonua was retained by Kekauonohi (also spelled Kakaunonohi, she was a high chiefess and granddaughter of Kamehameha I) as LCAw 11216 Apana 50, no Royal Patent) (www.ulukau.org). She was also a niece of Kalanimoku, who served as Kamehameha's kālaimoku or land administrator and her genealogy tied her to the royal bloodlines of both the Maui and Hawaiʻi chiefs (Maly 1994). Several *kuleana* were claimed and awarded in the area *makai* of Kukuihaele Park. Three *kuleana* parcels (LCAw. 7859, 7131, and 7874) were awarded within Kanahonua Ahupuaʻa, all of which were claimed as house lots. LCAw. 7131 awarded to N. Kaʻai was described in the Native Register (N. R. Vol.8:278-279) as enclosed by a stone wall he built himself, where he had resided since 1837. LCAw. 7874, awarded to Wailuahi, is particularly interesting because the claimant was a female who said she received the land from her husband Kaleiehu (N.R. Vol. 8:313).

On September 19, 1853, the ʻEleʻio Church lot, located across Kukuihaele Road from the park, was granted to the ABCFM (Maly 1994). On that same day, the one-acre School House Lot at Kanahonua, located north of the current Kukuihaele Park, was formally established as the Kukuihaele School Lot (School Grant 14:5). A 1905 map depicts both the Kukuihaele School lot and the ʻEleʻio Church lot, which is labelled "Native Church" (see Figure 12 of Appendix 2). According to Maly (1994), on March 28, 1859, the initial stone structure of ʻEleʻio Church was completed. Rev. Lyons' journal entries from early 1860 detailed the labor the residents of Hāmākua undertook to raise funds for the purchase of construction materials and the challenges they had to overcome to build the church at the top of the *pali*.

By 1864, native pastors had taken over the congregations of three churches started by Lyons in Hāmākua (Maly 1994). Maly (1994) reported that despite the fact that native churches typically had cemeteries associated with them, his historical documentation review did not reveal any mention of a cemetery within or adjacent to ʻEleʻio Church from its establishment until it was abandoned in 1950. Around 1868, The Roman Catholic Church acquired the lands originally awarded to Aliʻi Nui Kekauʻōnohi, comprising the majority of Kanahonua Ahupuaʻa. Kekauʻōnohi had left her lands to her husband upon her death in 1851. He followed her in death four years later, owing Bishop & Co. a debt of over $40,000. Maly (1994) suggested that the Roman Catholic Church purchased the land holdings at auction of the chiefess's estate. The parcel marked Catholic Church (see Figure 12 of Appendix 2), located *makai* and to the east of the current study area corresponds with the original location of St. Theresa's Catholic Church and Cemetery. Like most of the foreign owned land throughout the islands, much of the Roman Catholic Church's land was transformed for the cultivation of sugar.

The history of the Hāmākua District and particularly the area centered on Honokaa since 1860 is inextricably linked to the growth of the sugar cane industry. In 1876, Hawaiian laborers planted the first sugar cane crop at the 500-acre Honokaa Sugar Plantation (HSPA Archives, 1989). The plantation was expanded with the creation of the Honokaa Sugar Company in 1878. The following year, its founder, F.A.

Schaefer, established another sugar company in Kukuihaele, Pacific Sugar Mill, which operated on its own until 1913, when it sold its mill and began sending its cane to be ground at the Honokaa mill. In 1928, the two were merged under the name of the Honokaa Sugar Company, which eventually grew to more than 9,000 acres, half of which was fee simple lands. Initially, cane was hauled to the railroad or mill by mule- and horse-drawn wagons.

The Pacific Sugar Mill was the most remote of the twenty sugar plantations that sprang up along the Hāmākua coast between 1876 and 1888, with fields located between Waipiʻo valley to the north and the Honokaa Sugar Company lands to the south (Dorrance and Morgan 2000). According to Maly, "plantation communities usually developed around earlier Hawaiian – church settlements, and many kuleana were assimilated into plantation holdings for various reasons" (1994:B-28). Indeed, LCAws 7131, 7859, and 7874 in the vicinity of the project site appear to have been subsumed within the cultivated fields of the Pacific Sugar Mill Plantation. The majority of Kukuihaele Park itself was part of Field 1 of the Pacific Sugar Mill's land holdings and was planted with sugarcane during the early years of the plantation until the mid-1930s. Plantation-related development located near the project site and Kukuihaele School included multiple structures in Kukuihaele Village and outlying camp, the plantation manager's house, and plantation infrastructure such as stables, flumes, ditches and roads.

Begun in 1904 and completed in 1910, two ditches were dug by the Hawaiian Irrigation Co. to bring water from the Kohala Mountains. Honokaa Sugar Company took over the irrigation company in 1915 and used the water to flume the harvested cane to the company's 6½-mile rail system. An inclined tramway was used to transport bags of sugar to the plantation's warehouse. Beginning in 1919, the company began using a cable extending down the cliff to load the sugar directly onto inter-island steamers for the trip to Honolulu.

The plantation's work force was initially Hawaiian but was soon expanded with the immigration of Chinese, Portuguese, Japanese, Puerto Rican, Korean, and Filipino workers, many of whom lived in the several hundred houses owned by the plantation. The plantation also provided outdoor cookhouses, bathhouses and laundries that had running water, along with fuel and medical care. Most of the labor eventually was performed by contract workers, who were not provided housing.

The plantation extended from the coast three miles upslope, to the 1,955-foot elevation, with roughly 10 miles of ocean frontage along a high cliff. The region consists of gulches and steep slopes, which presented a variety of challenges for the growing and harvesting of cane. In 1916, Honokaa Sugar Company started the world's first commercial macadamia nut producer with the planting of trees in areas unsuitable for sugar cane. That same year it started its Honokaa Ranch division with 600 head of cattle on 2,600 acres located above the cane fields. In 1978, the company merged with Laupahoehoe Sugar Company. The new plantation was purchased by Francis Morgan in the early 1980s and renamed the Hamakua Sugar Company. It ceased operations in 1993.

The immigrant laborers established families and there was a great need for schools in Kukuihaele and other plantation villages. Kukuihaele School dates from as far back as at least the 1880s, according to an inventory of structures contained in P&R property records that was done in 1963 by the Department of Education. As of 1963, there were 10 structures with dates spanning the era from 1885 to 1954. The teachers' cottages were listed as dating from 1915 and 1940. They were built on a parcel separate from

the rest of the school that now is the park. That property, TMK 4-8-006:010, comprised five acres acquired by the Territory of Hawai‘i from the “Roman Catholic Church in the Territory of Hawai‘i” in January of 1932. The sugar plantation constructed a ball field (ca. 1940) on the eastern part of the property. This area was maintained by the County and utilized by both the school and the general public. Due to changing demographics and school policy, the school was decommissioned and mostly demolished in 1965. The teachers’ cottages, which were on the separate parcel, remained standing until 1999 when they were finally demolished. In March of 1970, Governor John A. Burns cancelled Executive Order (EO) 527 to the Department of Public Instruction for use of the 5-acre property for educational purposes. Although the County continued to operate the property as a park, it took several decades of occasional discussion between the County and the State until EO 3990 was finally issued to the P&R on May 9, 2003, for use of the property for park and recreational purposes.

Existing Cultural Resources, Consultation, Impacts and Mitigation Measures

Although the land within the park was formerly part of a traditional landscape that was heavily utilized for cultivation, it has been substantially transformed through former agriculture, use of a portion of the site as a school lot for over half a century, and decades of use as a County park. It does not contain natural features that might important in gathering or ritual, such as caves, springs, *pu‘u*, native forest groves, etc. The vegetation is highly disturbed and does not contain the quality and quantity or resources that would be important for native gathering. There is no evidence that the project site currently supports any traditional resource uses. As part of this EA, an effort was made to obtain information from knowledgeable informants discussed above about any potential traditional cultural properties and associated practices that might be present or have taken place in on the park property. The EA team spoke with Milton Lau Kong, who was born and raised in Waipi‘o Valley, with both parents of Chinese and Hawaiian ancestry. He attended 8 years at Kukuihaele School and has lived next to Kukuihaele Park for 40 years. His information on the property and history of Kukuihaele was extremely helpful for understanding the context. Mr. Lau Kong supports improvement of the park, although he recognizes that he personally will be impacted through additional noise. He stated that his concern was for children in the area, and he wanted to see the park regain its recreational importance in his community. He did not see any negative impacts to cultural properties or practices. Similar sentiments were expressed by Gladys Toko, whose father, Victor Hauanio, was the pastor of the Hawaiian Congregationalist Church in Kukuihaele and who has lived in the area her entire life, as well as Lawrence Fujioka, a lifelong resident. Although not every interviewed resident supported improvements (several residents who kindly spoke with our team did not wish to have their comments attributed by name), none indicated that the project site supported traditional cultural uses or that the project would adversely impact cultural practices.

It would not appear that the Proposed Action would have an adverse effect on the cultural/historical resources of the project site. The Office of Hawaiian Affairs, State Historic Preservation Division, and members of the Kukuihaele community were given an opportunity to review the Draft EA, in order to help finalize this determination.

3.2.3 Archaeology and Historic Properties

Existing Environment

As discussed above, the project site is located in the *ahupuaʻa* of Kanahonua and is part of a large property awarded in the Mahele to the *aliʻi* Kekauonohi as LCAw 11216 Apana 50. No *kuleana* were claimed within or directly adjacent to the park. No sites listed in the National or State Registers of Historic Sites are present on or near the project site. The land use history consists of traditional farming and then, perhaps, sugar cane farming in the mid-19th century. In the 1880s, the Territorial Board of Education established a school in Kukuihaele next to what is now the park, and sometime after that built structures and conducted other land uses on the western side of what is now the park property itself. These included the teachers' cottages (a four-cottage building under one roof) and the garden behind it. The basketball court is a remnant of the school, which was finally decommissioned in the 1960s. The buildings, including the teachers' cottages, were eventually dismantled. The school property was divided into five house lots which were made available for sale to residents through a lottery. The cottage, garden and basketball court area became part of park maintained by the County of Hawaiʻi, that also included the ballfield to the east that had been constructed by the plantation in about the 1950s.

The park appears to have been almost completely disturbed by bulldozing and park infrastructure development at various times in the past. It has been fully graded except for a few steep slopes and push piles of rocks, and the topography and retaining walls clearly indicate areas with substantial fill. Although the site used to house structures – the Kukuihaele School teacher's cottages – they were dismantled long ago and the ground around so heavily graded such that no visible traces remain.

Professional archaeologists conducted an assessment of the project site (see Appendix 2). Fieldwork, consisting of 100% pedestrian survey, was conducted on October 9, 2015 by Matthew R. Clark, B.A and Lauren Kepaʻa under the direction of Robert B. Rechtman, Ph.D. The surface of the entire park, including the overgrown areas along the boundaries, was examined for extant archaeological remains; none were encountered. All of the existing park infrastructure, including three concrete slabs for picnic tables and the concrete basketball court, appear less than fifty years old. Portions of several other broken concrete slabs that were also likely formerly foundations for picnic tables have been moved to the edge of the ball field for eventual disposal. No evidence of the former teacher's duplex cottage was identified.

Impacts and Mitigation Measures

Because of the extensive physical disturbance of the surface and the lack of manmade structures older than 50 years, the archaeologists concluded that the proposed improvements to Kukuihaele Park would not affect any historic properties. With respect to the historic preservation review process of the Department of Land and Natural Resources–State Historic Preservation Division (DLNR–SHPD), the recommendation was that no further work needs to be conducted prior to or during project implementation. As a precaution, it was recommended in the unlikely event that significant archaeological resources are discovered during the implementation of the proposed park improvement project, work should cease in the area of the discovery and DLNR-SHPD contacted pursuant to HAR 13§13-280-3. The archaeological assessment survey was provided to SHPD on October 20, 2015. The Final EA will report on this review.

3.3 Infrastructure

3.3.1 Utilities

Existing Facilities and Services and Impacts

The required utilities of County water service and HELCO electrical power are present at the site. There is an existing 6-inch water main under Kukuihaele Road. According to an October 15, 2015 letter from the Hawai‘i County Department of Water Supply (DWS) in response to early consultation (see Appendix 1a), the property has three existing service laterals each capable of accommodating a 5/8-inch meter and limited to an average daily usage of 400 gallons. DWS stated that the Kukuihaele Water System does not have sufficient capacity to provide additional water at this time. The project may retain the existing laterals and services or may construct a new upsized water lateral with an upsized meter from the existing 6-inch water main under Kukuihaele Road. Water calculations conducted for the project indicate an average daily use of 1,350 gallons, slightly over the average daily use of 1,200 gallons nominally supplied by three 5/8-inch meters. The Draft EA was sent to DWS for review. P&R is coordinating with the Hawai‘i Fire Department to determine how to address fire protection requirements in the context of the existing municipal water system.

Electrical service is needed inside the pavilion and for lighting at the pavilion, comfort station and parking lot. This would be provided for the site from the existing overhead electric lines running parallel to Kukuihaele Road. The project would remove existing portable toilets and install a new comfort station with associated septic tank and leach field.

Two utility easements exist on project site, a 5-foot wide easement along the western border of the property for electrical transmission, and a 22,898-sf easement on the southeast corner of the property to Hawaiian Telephone for equipment. As shown on the Site Plan in Figure 4, no proposed facilities encroach on these easements.

It is expected to be determined that the proposed improvements would require some upgrades to utility infrastructure but would not have any substantial impact on existing utilities.

3.3.2 Roadways and Traffic

Existing Conditions

Kukuihaele Park is served by Kukuihaele Road (see Figure 1 for map and Figure 3 for photographs), a small County road that bisects the village lengthwise. This road was the main route between Honokaa and Waipi‘o Valley before State Route (SR) 240 was constructed in the 1960s, bypassing the town on the *mauka* side. No traffic data are available for this County road, but observation during three weekdays indicates that traffic is very light. Observations during three one-hour, non-peak periods tallied traffic levels of less than one vehicle per minute (60 vehicles per hour). This road serves both local residents and some visitors who drive on Kukuihaele Road to shop at local stores and/or take an alternate way to or from the Waipi‘o Lookout. In the vicinity of the park, the road is striped for travel in two directions. With

eight-foot lanes and no shoulders, it is narrow enough to require two-way traffic to slow considerably when vehicles approach each other. TMK 4-8-006:010 has a 10-foot wide setback on Kukuihaele Road for eventual road widening. An alternate access to the park from vehicles on SR 240 is via Mud Lane.

Impacts and Mitigation Measures

The improvements would cause traffic to increase, particularly when there were games on the baseball field or events in the pavilion. Based on experiences with similar County parks in the area, visitation is generally light except during such events, which usually only occur a small fraction of the time. The extent to which the improved park would be utilized by visitors is unknown. Currently, many visitors require restrooms during their visit to Waipiʻo Lookout, and if a comfort station were available at the improved park, it might induce a stop. This would be particularly likely if the availability of a restroom became well known through signage, guidebooks, smart-phone apps, etc. Although it is unlikely that the volume of tourist visits would overwhelm the park – a look at the existing Waipiʻo Lookout would confirm the upper limit to visitation – it would be yet another source of traffic on Kukuihaele Road. Nevertheless, traffic would still remain generally light and no significant effect on the function of the road would occur. By letter of August 31, 2015 (see Appendix 1a), the Police Department also stated in response to early consultation that it did not foresee any significant impact to traffic and/or public safety concerns with the proposed improvements. P&R intends to monitor the situation with the Department of Public Works to determine if any mitigation such as road widening, shoulder pullouts, signage or other measures are necessary. Separate efforts that are gradually developing a visitor center on the former Rice Property near Waipiʻo Lookout offer a long-term solution for visitor restrooms. The project as proposed does not insert any improvements that would conflict with the 10-foot wide road widening setback on Kukuihaele Road.

3.4 Secondary and Cumulative Impacts

The Proposed Action will not involve any substantial secondary or cumulative impacts, such as population changes or effects on public facilities.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. Consultation of EA/EIS files in the *OEQC Environmental Notice* and records of Special Permits, Use Permits and Special Management Area Permits did not reveal any projects of a scale substantial enough to potentially interact with the proposed park improvements. In any case, the Proposed Action will have very limited and temporary construction period impacts, such as noise, traffic, dust and sedimentation, which would be unlikely to accumulate with similar impacts from nearby projects if any are proposed in the future. Operationally, future traffic impacts from the park in combination from the low expected traffic growth in the area would be non-significant.

3.5 Required Permits and Approvals

The following permits and approvals would be required:

- National Pollutant Discharge Elimination System Permit (State DOH)
- Individual Wastewater System Permit (IWS) (State DOH)
- Grading, Grubbing and Work Within County Right-of-Way Permits (County DPW)
- Building Permits and Plan Approval (County DPW and Planning)
- Chapter 6e, HRS, determination from State Historic Preservation Division on historic property effects
- Disability and Communication Access Board (DCAB) plan review and approval

3.6 Consistency with Government Plans and Policies

3.6.1 Hawai‘i State Plan

Adopted in 1978 and last revised in 1991 (Hawai‘i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State’s long-run growth and development activities. The three themes that express the basic purpose of the *Hawai‘i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The Proposed Action would promote these goals by improving recreational facilities and expanding recreational opportunities for the project area, thereby enhancing quality-of-life and community and social well-being.

3.6.2 Hawai‘i State Land Use Law

Hawai‘i State Land Use District. All land in the State of Hawai‘i is classified into one of four land use categories – Urban, Rural, Agricultural, or Conservation – by the State Land Use Commission, pursuant to Chapter 205, HRS. The property is in the State Land Use Urban District. The Proposed Action for continuing use of the project site as a park is consistent with intended uses for this Land Use District.

3.6.3 Hawai‘i County Zoning

The project site is zoned Single Family Residential, minimum lot size 15,000 square feet (RS-15), which allows for the existing use and proposed improvements, provided they receive plan approval from the Planning Director, per Hawai‘i County Code Section 25-4-11(c).

3.6.4 Hawai‘i County General Plan

The *General Plan* for the County of Hawai‘i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai‘i. The plan was adopted by ordinance in 1989 and revised in 2005 (Hawai‘i County Planning Department). The *General Plan* itself is organized into thirteen elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai‘i.

Most relevant to the proposed project are the following Goal and Policies, and Courses of Action of particular chapters of the General Plan:

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.
(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.
(i) Coordinate recreational programs and facilities with governmental and private agencies and organizations. Innovative ideas for improving recreational facilities and opportunities shall be considered.

12.4 STANDARDS

and

12.5.8.2 COURSES OF ACTION FOR HĀMĀKUA

(a) Expand and /or develop recreational facilities in existing communities.

Discussion: The Proposed Action is an appropriately scaled recreational project that satisfies recreational goals, policies, standards and courses of action with minimal impact. No new County park projects or improvements, including Kukuihaele Park, are specifically listed among courses of action for the area west of Honokaa.

HISTORIC SITES

6.2 GOALS

(a) Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawaiʻi.
(b) Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.

Discussion: The Proposed Action has involved an archaeological assessment and coordination with SHPD concerning potential historic properties to ensure there are no adverse effects to significant historic sites.

Therefore the action satisfies relevant goals, policies, and courses of action for historic sites in Hawai‘i County.

NATURAL BEAUTY

7.2 GOALS

(a) Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.
(b) Protect scenic vistas and view planes from becoming obstructed.
(c) Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

7.3 POLICIES

(h) Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.
(i) Do not allow incompatible construction in areas of natural beauty.

Discussion: The Proposed Action does not involve scenic areas or vantages and would not be inconsistent with the natural beauty of the Hāmākua area. Therefore the action is consistent with relevant goals, policies, and courses of action of the Natural Beauty section of the Hawai‘i County General Plan.

NATURAL RESOURCES

8.2 GOALS

(a) Protect and conserve the natural resources from undue exploitation, encroachment and damage.
(b) Provide opportunities for recreational, economic, and educational needs without despoiling or endangering natural resources.
(c) Protect and promote the prudent use of Hawaii’s unique, fragile, and significant environmental and natural resources.
(e) Protect and effectively manage Hawaii’s open space, watersheds, shoreline, and natural areas.

8.3 POLICIES

(b) Encourage a program of collection and dissemination of basic data concerning natural resources.
(h) Encourage public and private agencies to manage the natural resources in a manner that avoids or minimizes adverse effects on the environment and depletion of energy and natural resources to the fullest extent.
(i) Encourage an overall conservation ethic in the use of Hawaii’s resources by protecting, preserving, and conserving the critical and significant natural resources of the County of Hawaii.
(u) Ensure that activities authorized or funded by the County do not damage important natural resources.

Discussion: The Proposed Action does not involve destruction of natural resources and is consistent with the goals, standards and policies of the Natural Resources chapter of the Hawai‘i County General Plan.

The *Hawai‘i County General Plan Land Use Pattern Allocation Guide (LUPAG)*. The LUPAG map component of the *General Plan* is a graphic representation of the Plan’s goals, policies, and standards as well as of the physical relationship between land uses. It also establishes the basic urban and non-urban form for areas within the planned public and cultural facilities, public utilities and safety features, and

transportation corridors. The project site is classified as Low Density Urban in the LUPAG. Improvement of the project site's already existing recreational facilities on a property dedicated by Executive Order for recreational use is not inconsistent with this designation.

3.6.5 Hāmākua Community Development Plan

The project is within the Hāmākua Community Development Plan (CDP) planning area. Although the CDP has not yet been adopted, a draft is under consideration by the CDP Steering Committee, according to a letter from the Planning Department (see Appendix 1a). Among the Hāmākua Community Development Plan Community Objectives adopted by the Steering Committee on February 5, 2013, the Planning Department noted the following:

> *6.* ***Develop and improve critical community infrastructure, including*** *utilities, healthcare, emergency services, affordable housing, educational opportunities and* ***recreational facilities to keep our 'ohana safe, strong and healthy. [bold emphasis added]***

The proposed improvements at Kukuihaele Park represent a step in fulfilling this objective by providing a regulation softball/Little League baseball field large enough to support other organized field sports and recreational activities, an improved basketball court, a pavilion, a jogging path, a comfort station, parking and landscaping.

PART 4: DETERMINATION

Based on the information to this point, the Hawai'i County Department of Parks and Recreation expects to determine that the proposed project will not significantly alter the environment. It is therefore anticipated that an Environmental Impact Statement is not warranted and that the Department will issue a Finding of No Significant Impact (FONSI). A final determination will be made by the Hawai'i County Department of Parks and Recreation after consideration of comments on the Draft EA.

PART 5: FINDINGS AND REASONS

Chapter 11-200-12, Hawai'i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resources would be committed or lost by the Proposed Action, which would not adversely affect significant historic sites or native species or habitat. The Proposed Action has involved an archaeological assessment and coordination with SHPD concerning potential historic properties to ensure there are no adverse effects to significant historic sites.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* The Proposed Action expands and in no way curtails beneficial uses of the environment, and through the improvements, expands beneficial recreational uses.
3. *The proposed project will not conflict with the State's long-term environmental policies*. The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy

are to conserve natural resources and enhance the quality of life. The Proposed Action is minor, environmentally beneficial, and fulfills aspects of these policies calling for an improved social environment by improving and expanding recreational opportunities. It is thus consistent with all elements of the State's long-term environmental policies.

4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The Proposed Action will benefit the social welfare of the community and State by expanding and improving recreational use of public property for public benefit.
5. *The proposed project does not substantially affect public health in any detrimental way.* The Proposed Action will promote public health through provision of recreational opportunities.
6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities*. No secondary effects are expected to result from the Proposed Action, which would not induce in-migration or unduly affect roads or other public facilities.
7. *The proposed project will not involve a substantial degradation of environmental quality*. The Proposed Action is minor and environmentally benign, and would thus not contribute to environmental degradation with adherence to Best Management Practices.
8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The project site supports overwhelmingly alien vegetation. Impacts to rare, threatened or endangered species of flora or fauna will not occur, given planned restrictions of the timing of vegetation removal and a hawk survey if necessitated by the construction schedule.
9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* Effects to resources and conditions, including traffic flow, have been considered from a cumulative perspective. The Proposed Action is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.
10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* Slight increases in noise and effects to air quality will occur, but below levels that would require mitigation.
11. *The project does not affect nor would it likely to be damaged as a result of being located in an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* The project site is not within a flood plain. Although the project site is in an area with volcanic and seismic risk, the entire Island of Hawai‘i shares this risk, and the Proposed Action is not imprudent to undertake.
12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* The Proposed Action would not adversely impact any scenic sites or viewplanes.
13. *The project will not require substantial energy consumption*. The Proposed Action involves only minor use of energy for construction and operation.

For the reasons above, the Proposed Action would not have any significant effect in the context of Chapter 343, Hawai‘i Revised Statues and section 11-200-12 of the State Administrative Rules.

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Kukuihaele Park Improvements

Environmental Assessment

APPENDIX 1a
Comments in Response to Early Consultation

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William P. Kenoi
Mayor

Harry S. Kubojiri
Police Chief

Paul K. Ferreira
Deputy Police Chief

County of Hawai`i

POLICE DEPARTMENT
349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

August 31, 2015

Mr. Ron Terry
Principal
Geometrician Associates, LLC
P. O. Box 396
Hilo, HI 96721

Dear Mr. Terry:

Subject: Early Consultation for Environmental Assessment for Kukuihaele Park Improvements, Hāmākua District, Island of Hawaii, TMK (3) 4-8-006:010 & 051

Staff, upon reviewing the provided documents, does not anticipate any significant impact to traffic and/or other public safety concerns. We are not requesting a copy of the Draft EA when completed.

Thank you for allowing us the opportunity to comment.

If you have any questions, please contact Captain Andrew Burian, Commander of the Hāmākua District, at (808) 775-7533.

Sincerely,

HENRY J. TAVARES JR.
ASSISTANT POLICE CHIEF
AREA I OPERATIONS BUREAU

AB:lli
150550

From: Henry, Sharron [mailto:Sharron.Henry@hawaiicounty.gov]
Sent: Thursday, August 20, 2015 7:48 AM
To: RON TERRY PH. D (rterry@hawaii.rr.com)
Subject: FW: Early consultation for Kukuihaele Park EA

Morning Ron,

DEM has no comments to offer on this project.

Aloha,

Sharron Henry
Private Secretary to the Director
County of Hawai`i
Department of Environmental Management
345 Kekūanāo'a Street, Suite 41
Hilo, HI 96720
Phone: 808.961.8083
Fax: 808.961.8086
Email: Sharron.Henry@hawaiicounty.gov
cohdem@hawaiicounty.gov

http://www.hawaiicounty.gov/environmental-management
Hawai`i County is an equal opportunity provider and employer

Ron,

We have no records on file involving any fires, complaints, permits or violations regarding Hazardous materials at Kukuihaele Park, TMK (3) 4-8-006:010 & 51. Let me know if you have any additional questions.

Thanks,

Clinton Baybayan
Fire Prevention Captain
Hawaii Fire Department
Prevention Bureau
(W) 808-932-2913
(F) 808-932-2927

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

September 16, 2015

Geometrician Associates
Attention: Mr. Ron Terry
P.O. Box 396
Hilo, Hawaii 96721

via email: rterry@hawaii.rr.com

Dear Mr. Terry:

SUBJECT: Early Consultation for Environmental Assessment for Kukuihaele Park Improvements

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 report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from the (a) Division of State Parks, (b) Engineering Division and (c) Land Division – Hawaii District on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

56747

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
STATE OF HAWAII

15 AUG 25 AM 11:56

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 24, 2015

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
__Div. of Forestry & Wildlife
X Div. of State Parks
__Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Hawaii District
X Historic Preservation

FROM: for Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation for Environmental Assessment for Kukuihaele Park Improvements
LOCATION: South Kona, Hawaii, TMK: (3) 4-8-006:010 & 051
APPLICANT: Geometrician Associates, LLC for the County of Hawaii Department of Parks and Recreation

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by September 15, 2015.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Kevin Moore at 587-0426. Thank you.

Attachments

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

Signed: [signature]

Print name: Daniel S. Quinn
Date: 8/26/15

cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

'15 AUG-25 AM 10:55 ENGINEERING

August 24, 2015

MEMORANDUM

TO: PR:

DLNR Agencies:
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
__Div. of Forestry & Wildlife
X Div. of State Parks
__Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Hawaii District
X Historic Preservation

FROM: TO: for Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation for Environmental Assessment for Kukuihaele Park Improvements
LOCATION: ~~South Kona,~~ Hamakua District Hawaii, TMK: (3) 4-8-006:010 & 051
APPLICANT: Geometrician Associates, LLC for the County of Hawaii Department of Parks and Recreation

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by September 15, 2015.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Kevin Moore at 587-0426. Thank you.

Attachments

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

Signed: _____

Print name: Carty S. Chang, Chief Engineer
Date: 9/9/15

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/ Russell Y. Tsuji
Ref.: Early Consultation for EA for Kukuihaele Park Improvements, Hamakua District Hawaii.052

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The National Flood Insurance Program (NFIP) does not regulate developments within Zone X.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project site must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 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 the applicable County NFIP Coordinators below:

( ) Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Carter Romero (Acting) at (808) 961-8943 of the County of Hawaii, Department of Public Works.
( ) Mr. Carolyn Cortez at (808) 270-7253 of the County of Maui, Department of Planning.
( ) Mr. Stanford Iwamoto at (808) 241-4896 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

( ) Other: _____

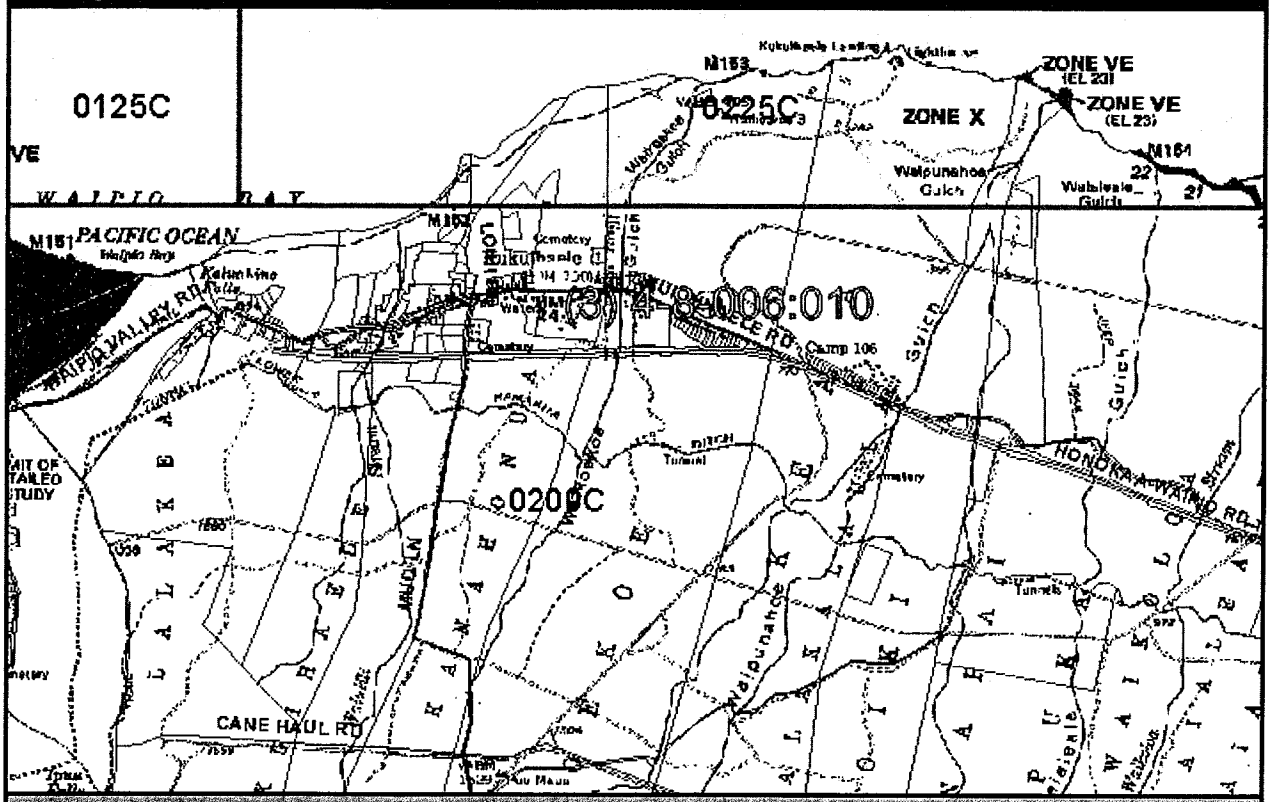
Should you have any questions, please call Mr. Dennis Imada of the Planning Branch at 587-0257.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 9/10/15

State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD ZONE DEFINITIONS

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD – The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water-surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- **Zone A:** No BFE determined.
- **Zone AE:** BFE determined.
- **Zone AH:** Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- **Zone AO:** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V:** Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE:** Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF:** Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded):** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X:** Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D:** Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

PROPERTY INFORMATION

COUNTY:	HAWAII
TMK NO:	(3) 4-8-006-010
PARCEL ADDRESS:	48-5350 KUKUIHAELE ROAD HONOKAA, HI 96727
FIRM INDEX DATE:	APRIL 02, 2004
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	1551660200C
PANEL EFFECTIVE DATE:	SEPTEMBER 16, 1988

PARCEL DATA FROM:	JUNE 2013
IMAGERY DATA FROM:	MAY 2005

IMPORTANT PHONE NUMBERS

County NFIP Coordinator	
County of Hawaii	
Carter Romero, P.E., CFM	(808) 961-8943
State NFIP Coordinator	
Carol Tyau-Beam, P.E., CFM	(808) 587-0267

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and shall not be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 24, 2015

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
__Div. of Forestry & Wildlife
X Div. of State Parks
__Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Hawaii District
X Historic Preservation

FROM: for Russell Y. Tsuji, Land Administrator
SUBJECT: Early Consultation for Environmental Assessment for Kukuihaele Park Improvements
LOCATION: South Kona, Hawaii, TMK: (3) 4-8-006:010 & 051
APPLICANT: Geometrician Associates, LLC for the County of Hawaii Department of Parks and Recreation

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by September 15, 2015.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Kevin Moore at 587-0426. Thank you.

Attachments

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

Signed: _____

Print name: GORDON C. HEIT
Date: 9/10/15

cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

75 Aupuni Street, Room 204
Hilo, Hawaii 96720
PHONE: (808) 961-9590
FAX: (808) 961-9599

September 10, 2015

MEMORANDUM

TO: Russell Y. Tsuji, Administrator

FROM: Gordon C. Heit, Hawaii District Land Agent

SUBJECT: Early Consultation for Environmental Assessment for the County of Hawaii Department of Parks and Recreation, Kukuihaele Park Improvements

LOCATION: Kanahonua, Hamakua, Island of Hawaii, TMK: (3) 4-8-006:010 & 051

APPLICANT: Geometrician, LLC on behalf of the County of Hawaii, Department of Parks and Recreation

Pursuant to your request for comments on the above matter, we offer the following:

The property identified above is encumbered under E.O. 3990 to the County of Hawaii, Department of Parks and Recreation (P&R). The Land Division will provide further comments when the draft environmental assessment is available for review.

Please contact me should you have any questions.

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

EPO 15-222

September 14, 2015

Mr. Ron Terry, Principal
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawaii 96721
Via email: rterry@hawaii.rr.com

Dear Mr. Terry:

SUBJECT: Early Consultation (EC) for Environmental Assessment for Kukuihaele Park Improvements, Hamakua District
TMK: (3) 4-8-006:010 & 051

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your EC to our office on September 8, 2015. Thank you for allowing us to review and comment on the proposed project. The EC was routed to the District Health Office on Hawaii and the Wastewater Branch. They will provide specific comments to you if necessary. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments.

Please note that all wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems". We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please review online guidance at: http://health.hawaii.gov/wastewater and contact the Planning and Design Section of the Wastewater Branch at 586-4294.

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: https://eha-cloud.doh.hawaii.gov

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

Mahalo nui loa,

Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

Attachment: U.S. EPA EJSCREEN 3 page report

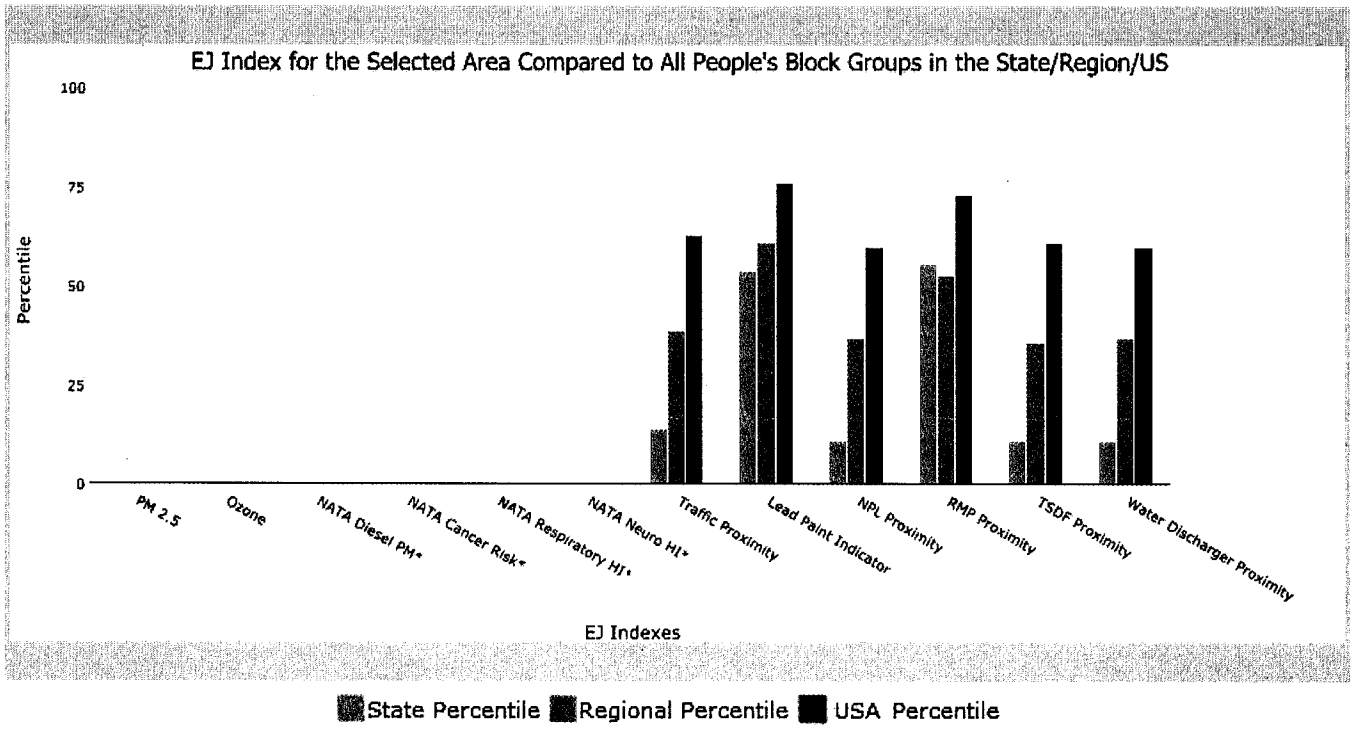
c: DHO Hawaii, WWB {via email only}

EJSCREEN Report

for 1 mile Ring Centered at 20.119608,-155.569723, HAWAII, EPA Region 9

Approximate Population: 315

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	14	39	63
EJ Index for Lead Paint Indicator	54	61	76
EJ Index for Proximity to NPL sites	11	37	60
EJ Index for Proximity to RMP sites	56	53	73
EJ Index for Proximity to TSDFs	11	36	61
EJ Index for Proximity to Major Direct Dischargers	11	37	60

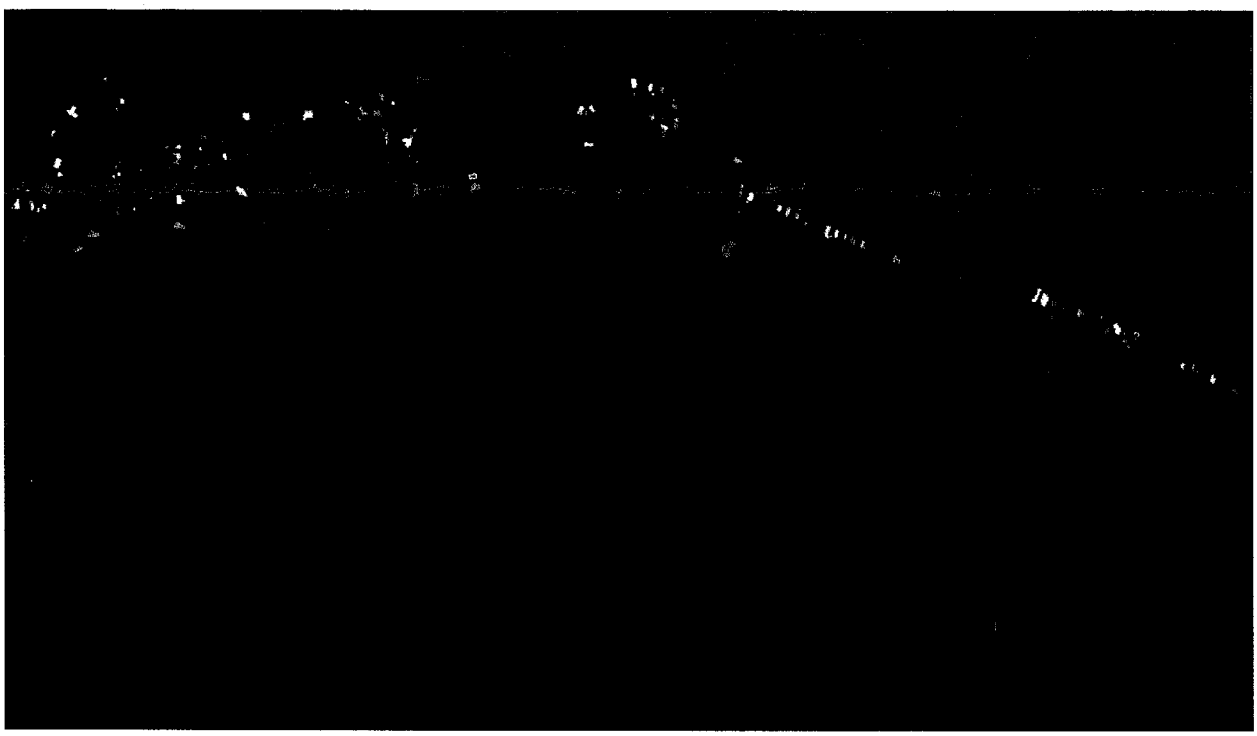


This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report

for 1 mile Ring Centered at 20.119608,-155.569723, HAWAII, EPA Region 9

Approximate Population: 315



September 15, 2015

✚ Digitized Point

1:9,028

0 0.075 0.15 0.3 mi

0 0.1 0.2 0.4 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the

EJSCREEN Report

for 1 mile Ring Centered at 20.119608,-155.569723, HAWAII, EPA Region 9

Approximate Population: 315

Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM (µg/m³)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	8.5	280	11	190	10	110	19
Lead Paint Indicator (% Pre-1960 Housing)	0.35	0.17	78	0.25	67	0.3	63
NPL Proximity (site count/km distance)	0.0032	0.092	8	0.11	0	0.096	0
RMP Proximity (facility count/km distance)	0.32	0.18	87	0.41	70	0.31	76
TSDF Proximity (facility count/km distance)	0.0033	0.092	8	0.12	0	0.054	4
Water Discharger Proximity (facility count/km distance)	0.015	0.33	6	0.19	1	0.25	1
Demographic Indicators							
Demographic Index	42%	51%	19	46%	45	35%	66
Minority Population	71%	77%	28	57%	61	36%	80
Low Income Population	13%	25%	27	35%	18	34%	18
Linguistically Isolated Population	0%	6%	25	9%	20	5%	45
Population With Less Than High School Education	13%	10%	72	18%	48	14%	55
Population Under 5 years of age	8%	6%	70	7%	61	7%	66
Population over 64 years of age	23%	14%	86	12%	90	13%	89

* The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: http://www.epa.gov/ttn/atw/natamain/index.html.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

William P. Kenoi
Mayor

Duane Kanuha
Director

Bobby Command
Deputy Director

West Hawai'i Office
74-5044 Ane Keohokalole Hwy
Kailua-Kona, Hawai'i 96740
Phone (808) 323-4770
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County of Hawai'i

PLANNING DEPARTMENT

East Hawai'i Office
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720
Phone (808) 961-8288
Fax (808) 961-8742

September 21, 2015

Mr. Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, HI 96721

Dear Mr. Terry:

SUBJECT: Pre-Consultation on Draft Environmental Assessment
Applicant: County of Hawai'i, Department of Parks & Recreation
Project: Kukuihaele Park Improvements
Tax Map Key: (3) 4-8-006:010 & 051

This is to acknowledge receipt of your August 17, 2015 letter requesting comments from this office regarding the preparation of a Draft Environmental Assessment (DEA) for the subject project.

The County is proposing phased improvements and expansion of the facilities at the Kukuihaele Park. It would include a new parking lot for approximately 24 vehicles, a new comfort station, a new pavilion, an improved basketball court, and a new softball/Little League baseball field, which will include backstops, dugouts, bleachers, and some fencing.

According to the Real Property Tax Office, the 0.0574 acre Parcel 51 was dropped into the 3.968 acre Parcel 10 in 1999. It is zoned Single-Family Residential (RS-15) by the County and designated Urban by the State Land Use Commission. In addition, the Hawai'i County General Plan Land Use Allocation Guide (LUPAG) Map designates the parcel as Low Density Urban (LDU). It is not located within the Special Management Area.

Executive Order No. 3990, approved on April 1, 2003, set aside this land for park and recreational purposes under the control and management of the County of Hawai'i, Department of Parks and Recreation.

Hawai'i County Code Section 25-4-11(c) states that "*Public uses, structures and buildings and community buildings are permitted uses in any district, provided that the director has issued plan approval for such use.*" Therefore, the proposed project will require Plan Approval issued by this office.

In the DEA, describe how the proposed use is consistent with the goals, policies and standards of the County of Hawai'i General Plan, as amended in 2005. Further, the project site is in the Hāmākua Community Development Plan (CDP) planning area. Although the CDP has not yet been adopted, a draft is under consideration by the CDP Steering Committee. Among the Hāmākua Community Development Plan Community Objectives adopted by the Steering Committee on February 5, 2013, we note the following:

6: *Develop and improve critical community infrastructure, including utilities, healthcare, emergency services, affordable housing, educational opportunities and recreational facilities to keep our 'ohana safe, strong, and healthy.*

The DEA should include a discussion of the project in relationship to the above referenced objective.

Thank you for the opportunity to provide preliminary comments on the proposed project. Please provide our department with a copy of the DEA for our review and comment.

If you have questions, please contact Esther Imamura of our office at (808) 961-8139.

Sincerely,

for DUANE KANUHA
Planning Director

ETI:cs
P:\Wpwin60\ETI\Eadraftpre-Consul\Terry Kukuihaele Park.Rtf

PHONE (808) 594-1888

FAX (808) 594-1938

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAI'I 96817

HRD 15-7609

October 2, 2015

Ron Terry, Principal
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawai'i 96721

Re: Early Consultation for Environmental Assessment for Kukuihaele Park Improvements
Kanāhonua Ahupua'a, Hāmākua Moku, Hawai'i Mokupuni
TMK: (3) 4-8-006:010 and 051

Aloha Mr. Terry:

The Office of Hawaiian Affairs (OHA) received your letter dated August 17, 2015, requesting comments on the above-titled project. Given the project descriptions provided, our agency has no comments at this time. Should you have any questions, please contact Everett Ohta at 594-0231 or everetto@oha.org.

'O wau iho nō me ka 'oia 'i'o,

Kamana'opono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC: rg

**Please address replies and similar, future correspondence to our agency:*
Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy., Ste. 200
Honolulu, Hawai'i 96817

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 15, 2015

Mr. Ron Terry
Geometrician Associates, LLC
P.O. Box 396
Hilo, HI 96721

Subject: Pre-Environmental Assessment Consultation
Kukuihaele Park Improvements
Tax Map Key 4-8-006:010

This is in response to your Pre-Environmental Assessment Consultation letter of August 17, 2015.

Please be informed there is an existing 6-inch waterline within Kukuihaele Road fronting the subject parcel which reduces to a 4-inch waterline from the middle of the parcel to the east.

Water availability in the area is restricted to existing services only. There are three (3) existing service laterals installed to the parcel which are capable of accommodating 5/8-inch meters and limited to an average daily usage of 400 gallons. The Kukuihaele Water System does not have sufficient capacity to provide additional water at this time.

Upon receipt and review of the Environmental Assessment, we will request that estimated maximum daily water demand calculations be provided by a professional engineer, licensed in the State of Hawai'i. Based on the calculations provided, we will determine if the existing services are adequate for the proposed park improvements and if any necessary water system improvements are required.

There is an existing fire hydrant fronting the subject parcel. Please be informed that the existing 6-inch waterline within Kukuihaele Road is inadequate to provide the required 2,000-gallons per minute (GPM) fire-flow per the Department's Water System Standards. The applicant should contact the Fire Department to determine any other fire protection requirements or alternatives.

Should there be any questions, please contact Mr. Ryan Quitoriano of our Water Resources and Planning Branch at 961-8070, extension 256.

Sincerely yours,

Avr Keith K. Okamoto, P.E.
Manager-Chief Engineer

RQ:dfg

copy – County of Hawai'i, Department of Parks and Recreation

Kukuihaele Park Improvements

Environmental Assessment

APPENDIX 2
Archaeological Assessment Survey

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An Archaeological Assessment Survey Conducted for Proposed Improvements to the County of Hawai‘i’s Kukuihaele Park

TMK: (3) 4-8-006:010

Kanahonua Ahupua‘a
Hāmākua District
Island of Hawai‘i

DRAFT VERSION

Prepared By:

Teresa Gotay, M.A.,
Matthew R. Clark, B.A.
and
Robert B. Rechtman, Ph.D.

Prepared For:

Austen Drake, P.E.
SSFM International, Inc.
99 Aupuni Street
Hilo, HI 96720

October 2015

ASM Project Number 25260.00

ASM affiliates
Archaeology • History • Ethnography • Architectural History
Office: (808) 969-6066 • Fax: (808) 443-0065

An Archaeological Assessment Survey Conducted for Proposed Improvements to the County of Hawai‘i’s Kukuihaele Park

TMK: (3) 4-8-006:010

Kanahonua Ahupua‘a
Hāmākua District
Island of Hawai‘i

ASM affiliates

EXECUTIVE SUMMARY

At the request of Austen Drake of SSFM International, Inc., ASM Affiliates conducted an Archaeological Assessment survey for proposed improvements to the roughly 4-acre Kukuihaele Park (TMK: (3) 4-8-006:010) located in Kanahonua Ahupuaʻa, Hāmākua District, Island of Hawaiʻi. The County of Hawaiʻi intends to improve the existing park facilities by adding a parking lot, a pavilion, a comfort station, walking paths, and by updating the existing basketball court and baseball field. This action requires the production of an Environmental Assessment (EA) in compliance with HRS Chapter 343. The current study, which was conducted in support of the EA and will accompany the final draft of that document, was undertaken in accordance with Hawaiʻi Administrative Rules 13§13–275, and was performed in compliance with the Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports as contained in Hawaiʻi Administrative Rules 13§13–276. This report provides a study area description, a detailed culture-historical background, a discussion of prior archaeological studies within the vicinity of the current study area, and the results of the field investigation of the current study area.

As a result of the current survey there were no archaeological resources identified of any kind within the current study area. Thus, it is our conclusion that the proposed improvements to Kukuihaele Park will not affect any historic properties. According to 13§13-275-5(b)(5)(A) when no archaeological resources are discovered during an archaeological survey the production of an Archaeological Assessment report is appropriate. Compliance with the above standards is sufficient for meeting the historic preservation review process requirements of both the Department of Land and Natural Resources–State Historic Preservation Division (DLNR–SHPD) and the County of Hawaiʻi Planning Department. With respect to the historic preservation review process of both the DLNR–SHPD and the County of Hawaiʻi Planning Department, our recommendation is that no further work needs to be conducted prior to or during project implementation. In the unlikely event that significant archaeological resources are discovered during the implementation of the proposed park improvement project, work should cease in the area of the discovery and DLNR-SHPD contacted pursuant to HAR 13§13-280-3.

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1. INTRODUCTION

At the request of Austen Drake of SSFM International, Inc., ASM Affiliates conducted an Archaeological Assessment survey for proposed improvements to the roughly 4-acre Kukuihaele Park (TMK: (3) 4-8-006:010) located in Kanahonua Ahupuaʻa, Hāmākua District, Island of Hawaiʻi (Figures 1and 2). The County of Hawaiʻi intends to improve the existing park facilities by adding a parking lot, a pavilion, a comfort station, walking paths, and by updating the existing basketball court and baseball field (Figure 3). This action requires the production of an Environmental Assessment (EA) in compliance with HRS Chapter 343. As described in the draft EA, the improvements to Kukuihaele Park will benefit most area residents, who have repeatedly requested for county officials to provide active recreational facilities. In addition, the proposed improvements will render all of the buildings and amenities accessible to persons with disabilities, which has side benefits to families with small children in strollers, temporarily disabled (injured) persons, and others. The improvements are being funded by Ordinance No. 15-58, which was passed unanimously by the Hawaiʻi County Council on June 2, 2015. The funding request was initiated by Councilmember Valerie Poindexter in response to calls from constituents.

The current study, which was conducted in support of the EA and will accompany the final draft of that document, was undertaken in accordance with Hawaiʻi Administrative Rules 13§13–275, and was performed in compliance with the Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports as contained in Hawaiʻi Administrative Rules 13§13–276. According to 13§13-275-5(b)(5)(A) when no archaeological resources are discovered during an archaeological survey the production of an Archaeological Assessment report is appropriate. Compliance with the above standards is sufficient for meeting the historic preservation review process requirements of both the Department of Land and Natural Resources–State Historic Preservation Division (DLNR–SHPD) and the County of Hawaiʻi Planning Department. This report provides a study area description, a detailed culture-historical background, a discussion of prior archaeological studies within the vicinity of the current study area, and the results of the field investigation of the current study area.

STUDY AREA DESCRIPTION

The current study area (Figure 4) consists of an existing County of Hawaiʻi Park facility located in the community of Kukuihaele, Kanahonua Ahupuaʻa, Hāmākua District, Island of Hawaiʻi at an elevation of roughly 700 feet above sea level (see Figures 1). The 4.026 acre park parcel (TMK: (3) 4-8-006:010; see Figure 2) includes a basketball court and ball field, a few picnic benches, and several portable toilets (Figure 5). It is bounded to the south by Kukuihaele Road (Figure 6), to the west by privately owned residential properties, and to the north and east by a private driveway easement (Figure 7). The entire surface of the study area has been previously graded, banked, and leveled to form the existing park facility. The natural slope along the southern and western edges of the existing ball field was cut and pushed to create the level playing surface (Figure 8), creating an artificial slope along the northern and eastern edges that has been armored along a portion of the northern edge with rock material to prevent erosion. The location of the existing basketball court was similarly cut and filled before pouring the concrete playing surface (Figure 9). The area *mauka* of the basketball court was formerly the location of a wooden structure that was demolished and removed from the property during the early 2000s. A push pile of rock debris is all that remains in the general vicinity of this former structure (Figure 10). A gravel driveway leads from Kukuihaele Road to the basketball court (Figure 11), where it has been blocked with boulders to prevent people from driving onto the ball field. Vegetation within the park area consists primarily of mowed grass, with trees and ornamentals planted along the boundaries, and some overgrown areas on the steep slopes that are not maintained by the Department of Parks and Recreation.

Figure 1. Project area location.

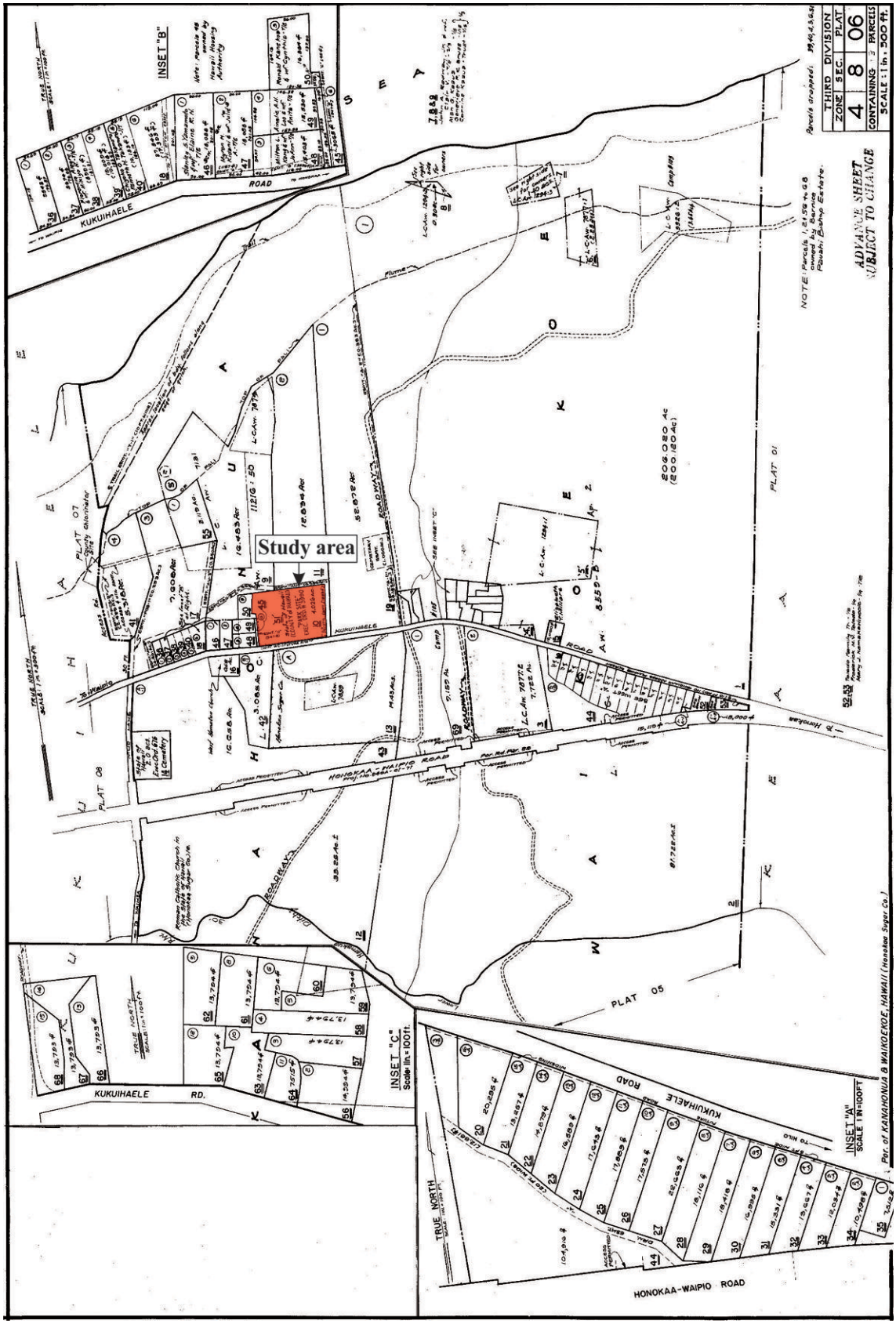

Figure 2. Tax Map Key (TMK): (3) 4-8-006 showing the current study parcel (010).

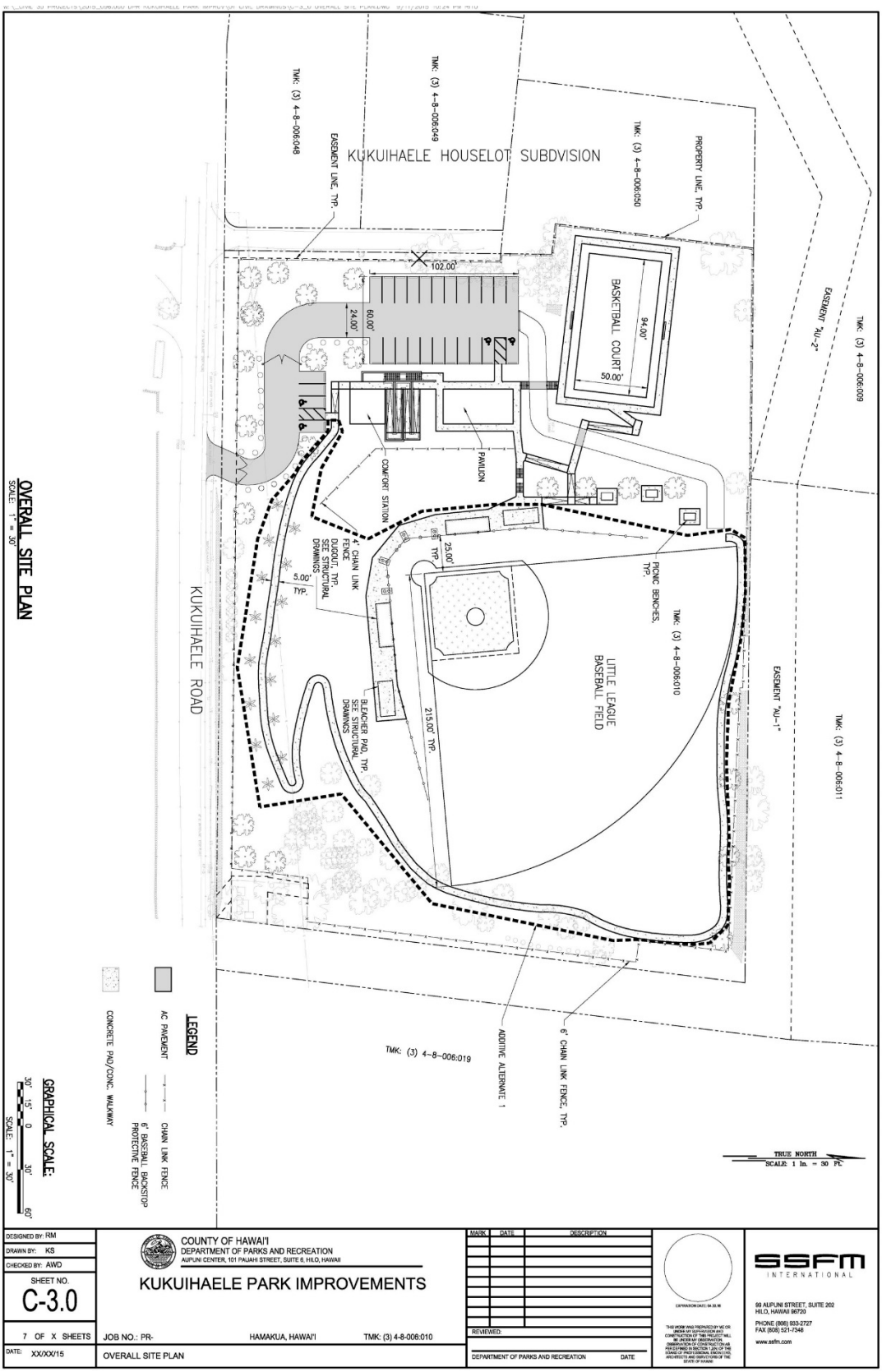

Figure 3. Proposed Kukuihaele Park Improvements.

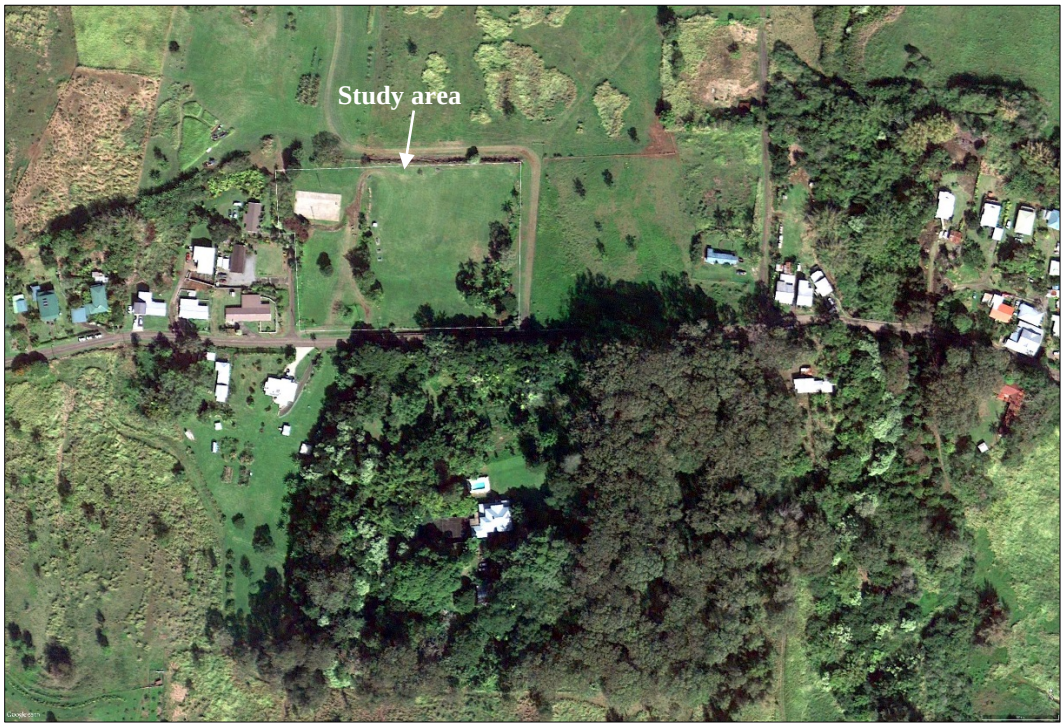

Figure 4. 2013 Google Earth image showing the current study area.

Figure 5. Kukuihaele Park ball field, view to the southeast.

Figure 6. Kukuihaele Road along the southern boundary of the park, view to east.

Figure 7. Driveway easement along the northern boundary of the park parcel, view to the west.

Figure 8. Kukuihaele Park ball field, view to the southwest.

Figure 9. Kukuihaele Park basketball court, view to the northwest.

Figure 10. Location of the former wooden structure, view to the south.

Figure 11. Kukuihaele Park driveway, view to the north.

2. BACKGROUND

To generate a set of expectations regarding the nature of cultural resources that might be encountered within the study area, and to establish an environment within which to assess the significance of any such resources, a brief culture-historical background is presented. This section of the report includes a synthesis of prior archaeological and historical research relevant to the current study area.

CULTURE-HISTORICAL CONTEXT

In an effort to provide a comprehensive and holistic understanding of the current study area and to inform expectations for the current study, a culture-historical context will be presented. The focus of the discussion begins with the general settlement pattern for the Hawaiian Islands, and then shifts to archival and historical data relevant to Hāmākua District and more specifically Kanahonua Ahupuaʻa, and the Kukuihaele Park parcel.

A Brief Overview of Hawaiian Settlement

The conventional wisdom has been that first inhabitants of Hawaiʻi Island probably arrived by at least A.D. 300, and focused habitation and subsistence activity on the windward side of the island (Burtchard 1995; Kirch 1985; Hommon 1986). However, there is no archaeological evidence for occupation of Hawaiʻi Island (or perhaps anywhere in Hawaiʻi) during this initial settlement, or colonization stage of island occupation (A.D. 300 to 600). More recently, Kirch (2011) has convincingly argued that Polynesians may not have arrived to the Hawaiian Islands until at least A.D. 1000, but expanded rapidly thereafter. The implications of this on the currently accepted chronology (Kirch 1985) would alter the timing of the Settlement, Developmental, and Expansion Periods, possibly shifting the Settlement Period to A.D. 1000 to 1100, the Developmental Period to A.D. 1100 to 1350, and the Expansion Period to A.D. 1350 to 1650.

The initial settlement in Hawaiʻi is believed to have occurred from the southern Marquesas Islands. This was a period of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order. Order was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought from their homeland certain universal Polynesian customs: the major gods Kāne, Kū, and Lono; the *kapu* system of law and order; cities of refuge; the *ʻaumakua* concept; various epiphenomenal beliefs; and the concept of *mana*. Initial permanent settlements in the islands were established along the better watered windward shores of the islands, at sheltered bays with access to fresh water and marine resources. These conditions characterized the lands of Waipiʻo, near the current study area in Hāmākua, where clusters of fishermen and their families would settle along the small bays (Handy and Handy 1972). Communities shared extended familial relations and there was an occupational focus on the collection of marine resources. Over a period of several centuries the areas with the richest natural resources became populated and perhaps even crowded, and there was an increasing separation of the chiefly class from the commoners. As the environment reached its maximum carrying capacity, the result was social stress, hostility, and war between neighboring groups (Kirch 1985). Soon, large areas of Hawaiʻi were controlled by a few powerful chiefs.

The Development Period brought about a uniquely Hawaiian culture. The portable artifacts found in archaeological sites of this period reflect not only an evolution of the traditional tools, but some distinctly Hawaiian inventions. The adze (*koʻi*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. A few areas in Hawaiʻi produced quality basalt for adze production. Mauna Kea on the island of Hawaiʻi in the Hāmākua District was a well-known adze quarry. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are *ʻulu maika* stones and *lei niho palaoa*. The later was a status item worn by those of high rank, indicating a trend toward greater status differentiation (Kirch 1985).

The Expansion Period is characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification. Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. The greatest population growth occurred during the Expansion Period. Subsistence patterns intensified as crop farming evolved into large irrigated field systems and expanded into the marginal dry land areas. The *loko* or fishpond aquaculture flourished during this period (Bellwood 1978; Kirch 1985). According to Handy and Handy (1972), nearby Waipiʻo Valley was host to one of the largest planting areas in the Hawaiian Islands and the largest wet-taro valley on the Island of Hawaiʻi, replete with agricultural terraces.

During the Expansion Period, the island of Hawaii was divided into six major districts, including Hāmākua, where the current study area is located. The concept of the *ahupuaʻa* was also established around this time ca. the A.D. 1400s (Kirch 1985), adding another component to a then well-stratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupuaʻa* (such as Kanahonua) were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986). *Ahupuaʻa* were ruled by *aliʻi ʻai ahupuaʻa* or lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a *konohiki*. The *aliʻi-ʻai-ahupuaʻa* in turn answered to an *aliʻi ʻai moku* (chief who claimed the abundance of the entire district). Thus, *ahupuaʻa* resources supported not only the *makaʻāinana* and *ʻohana* who lived on the land, but also contributed to the support of the royal community of regional and/or island kingdoms. This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resources management planning. Also, in communities with long-term royal residents, divisions of labor (with specialists in various occupations on land and in procurement of marine resources) came to be strictly adhered to.

The *aliʻi* and the *makaʻāinana* (commoners) were not confined to the boundaries of the *ahupuaʻa*; when there was a perceived need, they also shared with their neighbor *ahupuaʻa ohana* (Hono-ko-hau 1974). The *ahupuaʻa* were further divided into smaller sections such as the *ʻili, moʻoʻaina, paukuʻaina, kihapai, koele, hakuone*, and *kuakua* (Hommon 1986, Pogue 1978). The chiefs of these land units gave their allegiance to a territorial chief or *moʻi* (king). *Heiau* building flourished during the Expansion Period as religion became more complex and embedded in a sociopolitical climate of territorial competition. Monumental architecture, such as *heiau*, "played a key role as visual markers of chiefly dominance" (Kirch 1990:206). Nearby Waipiʻo was the residential base for powerful local rulers dating back to at least the A.D. 1200s (Cartwright 1933), and appears to have been the ruling center for the Pili line, which initially ruled from Kohala. Cartwright (1933) suggests that Pili later resided in and ruled from Waipiʻo Valley in the Hāmākua District. Ethnohistorical traditions (Fornander 1880) indicate that Waipiʻo Valley was associated with at least nine successive Pili line rulers of Hawaiʻi Island, from Kahaʻimoeleʻa to ʻUmi (ca. A.D. 1460 to 1620). A number of large *heiau* were maintained in Waipiʻo Valley throughout the Precontact Period (Cordy 1994), which is a testament to Waipiʻo's enduring significance as a religious and royal center. According to Franklin et al. (1994) one can also assume that a percentage of the resources produced by the residents of Kanahonua were used to support the chiefly community at Waipiʻo. In particular, residents of the areas along the *kula* slopes marked by steep cliffs, found to the north of the current study area, likely depended on their neighbors who had easier access to marine resources.

Legendary Accounts

Although no legendary references were found that specifically mention the subject Ahupuaʻa of Kanahonua, the greater Hāmākua District and nearby Waipiʻo Valley feature prominently in various myths, legends, *ʻole*, and *mele*. A selection of these legendary accounts is presented below.

The wet and misty lands of Hāmākua extend from the windward slopes of Mauna Kea to the sea and comprise a unique environment influenced the determination of its boundaries and shaped its history. According to the legend Kaʻao Hoʻoniua Puʻuwai no Ka-Miki (The Heart Stirring Story of Ka-Miki) published in Hawaiian language newspapers in the early 1900s and translated by Kepa Maly (1994), the mists that hang over Hāmākua originated when Ka-Miki's ancestress used her physical form known as "*Ka-ʻohu-kolo-mai-iluna-o-ka-lāʻau* (the mist which creeps across the forest)" to hide Ka-miki from the ghost hordes who were trying to trap him in their nets. This legend also provides a valuable reference to the practice of bird hunting using nets, which was a common resource acquisition strategy used in the Hāmākua area as well. Elsewhere, a traditional chant or *ʻole* refers to the practice of netting birds in the forests of Hāmākua. Other relevant legendary accounts depict the ancient foot trails that crossed the *ahupuaʻa* of Hāmākua, most of which were described as steep and difficult to traverse.

Many of the place names throughout the Hawaiian Islands have traditional legends associated with them and most of the place names reveal a deeper meaning. For instance, the Kukuihaele Ahupuaʻa, whose literal translation is traveling torch, was named after Kukui-a-haele-ana, the ninth *ʻōlohe* champion of the Pili line who was defeated by Ka-Miki (Maly 1994). Unfortunately, the lands of Kanahonua are not explicitly referenced in the legends and no literal translation for the place name is provided by Pukui et al. (1974). However, Kēpa Maly provides the following interpretative translation:

> If written as 'Kana-honua' (earth support), the name is perhaps descriptive of a land that stretches out horizontally supporting cloud masses; an appropriate description of this area when seen from further south in Hāmākua. (1994: B-1)

Numerous legends that emerged from the Hāmākua District feature Lono, a Hawaiian god associated with abundant growth and agriculture, which comes as no surprise given the emphasis on agriculture in the region. Furthermore, according to Handy and Handy (1972) a mythical creature known as Kamapuaʻa (the hog god) was the embodiment of Lono and that,

> On Hawaii his domain was the verdant rainy Hamakua coast, where, when southerly winds sweep around the eastern flank of Mauna Kea, the storm clouds pile up in roiling masses like giant swine rutting in the uplands. (ibid.:341)

Post-Contact Accounts of Kanahonua and Hāmākua (1793-1848)

The writings of early visitors (explorers and missionaries) to Hawaiʻi provide important glimpses into the nature of native communities and their history as spoken at the time, as well as descriptions of the environment, land use and traditional cultural practices. Narratives recorded by early visitors to the Hāmākua region with specific references to the nearby coastal valleys are provided below. The themes common to most of the narratives of the foreign visitors include descriptions of a lush and fertile land dotted with intermittent waterfalls and scattered settlements.

In 1793-1794 Archibald Menzies, a naturalist and surgeon with Captain George Vancouver's expedition aboard *Discovery*, wrote the following description of the Hāmākua District coast in 1793 as seen from his ship:

> . . . The land we passed in the forenoon rose in a steep bank from the water side and from thence the country stretched back with an easy acclivity for about four or five miles, and was laid out into little fields, apparently well cultivated and interspersed with the habitations of the natives. Beyond this the country became steeply rugged and woody, forming mountains of great elevation.
>
> A little after noon, we passed a very romantic part of the shore formed into ridges not unlike the roofs of houses, with their ends facing the sea in dark perpendicular cliffs of considerable height. These were intersected with deep gulleys [sic] from which a number of beautiful cataracts emptied their foaming streams into the ocean. This part of the shore is too dreary and rugged to be much inhabited. It is not above two leagues to the eastward of the northwest point of the island. . . (Menzies 1920:51-52)

Less than a year after Kamehameha's death in 1819, Protestant missionaries arrived from America. In 1823, British missionary William Ellis and members of the American Board of Commissioners for Foreign Missions (ABCFM) toured the island of Hawaiʻi seeking out communities in which to establish church centers and schools. In an entry recording their journey from Hilo to Hāmākua, Ellis described the terrain thusly:

> The high land over which we passed was generally woody, though the trees were not large. The places that were free from wood, were covered with long grass and luxuriant ferns. The houses mostly stood singly, and were scattered over the face of the country.
>
> A rich field of potatoes or taro, five or six acres sometimes in extent, or large plantations of sugar-cane and bananas, occasionally bordered our path. But though the soil was excellent, it was only partially cultivated. The population also appeared less than what we had seen inhabiting some of the most desolate parts of the island. (2004:352)

In his next entry, composed while he was in Hāmākua, Ellis elaborated on how Hawaiians marked the boundaries of their traditional land divisions:

> The geographical divisions of Hawaii, and other islands of the group are sometimes artificial, and a stone image, a line of stones somewhat distant from each other, a path, or a stone wall, serves to separate the different districts or larger divisions from each other. They are, however, more frequently natural, as in the present instance, where a water course, winding through the center of the valley, marked the boundary of these two divisions [Hilo and Hamakua]. The boundary of the smaller districts, and even the different farms, as well as the large divisions, are definitely marked, well understood, and permanent.
>
> Each division, district, village, and farm, and many of the sites of houses, have a distinct name, which is often significant of some object or quality distinguishing the place. (2004:352-353)

In a later entry titled *Description of Hamakua District*, Ellis (2004) also wrote of the romantic appearance of Hāmākua from as viewed from the sea due to the many waterfalls that extended from the summits of the cliffs to the sea. Of the coastline he recounted:

> The coast is bold and steep, and the cliffs from three to five hundred feet high, partially covered with shrubs and herbage, intersected by numerous deep ravines and valleys, frequently in a high

> state of cultivation, while the whole coast in ornamented with waterfalls and cascades of every description. (ibid:385)

In 1832, A.B.C.F.M. Reverend Lorenzo Lyons (also known as *Makua Laiana*) replaced Reverend Dwight Baldwin at Waimea. By 1833, Lyons recorded the following observation about the declining population of Hawai‘i Island, “deaths are more numerous than births. Hence the [native] population is decreasing (Doyle 1953:72 in Maly 1994:B-23). In 1834, Lyons relocated his family to Hāmākua, staying near the ‘Ele‘io Church in Kanahonua, which would later become the West Hāmākua Hawaiian Church also known as the Kukuihaele church and school. Governor Kuakini had ordered the construction of the ‘Ele‘io Church in ca. 1835 (Franklin et al. 1994). Lyons, his wife and son were provided a house to live in by a local chief named Kalaiepu (also spelled Kaleiehu). Of their new accommodations, Lyons wrote the following in his journal:

> . . . The doors were so low that we had to stoop in order to get in. The house had no window. Our bed was made of posts driven into the ground; and poles and leaves and mats. Our humble table was made by myself. We were all alone, with no society save that of the natives. To be without luxuries is no trial, but art first the thoughtlessness of the people was painful. But Mrs. L. worked with the women and children and I with the men. The schools flourished. Singing schools were large and made considerable progress. The people brought all kinds of products to exchange for books. . .
>
> Betsy too loved Hamakua, and wrote: The climate is delightful. We live about a half mile from the ocean, and about two miles from the top of Waipio and Wamanu Palis. From our door we have a view of the precipices beyond. . . (Doyle 1953:74 in Maly 1994: B-23)

Around this time, Lyons also documented the devastating effects on the Waimea and Hāmākua populations as a result of a mumps epidemic combined with a famine brought on by a worm that had infected the crops. In May of 1835, Lyons and his family moved back to Waimea, prior to his departure he estimated the population of Hāmākua to be a little over 4,000 people (Maly 1994). Lyons visited Kanahonua in August of 1835 and remarked on the construction efforts for the church meeting house, which was “surrounded by a stone wall put up by convicts such as adulterers, etc. This is not my fault if fault it is-I remonstrated against it” (Doyle 1953:93 in Maly 1994:B-24). In August of 1837, Lyons slept on the floor of the school house and held meetings at Kukuihaele (Maly 1994). In 1841, Lyons estimated the population of Hāmākua as 3,830 and between 1845 and 1848 his journal entries described the poor health and high mortality rate of the native population as a result of starvation, measles, whooping cough, and dysentery.

The *Māhele ‘Āina* of 1848

By the mid-nineteenth century, the ever-growing population of Westerners in Hawai‘i forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership, and in 1848 the *Māhele ‘Āina* became the vehicle for determining ownership of native lands. This change in land tenure was promoted primarily by the missionaries and Western businessmen in the island kingdom. Generally these individuals were hesitant to enter business deals on leasehold land. The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the *konohiki*. During the *Māhele*, all lands in the Kingdom of Hawai‘i were placed in one of three categories: (1) Crown Lands (for the occupant of the throne); (2) Government Lands; and (3) *Konohiki* Lands (Chinen 1958:vii and Chinen 1961:13). The chiefs and *konohiki* were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. They were also required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission.

All lands awarded during the *Māhele* were subject to the rights of the native tenants therein; those individuals who lived on the land and worked it for their subsistence and the welfare of the chiefs (Sinoto and Kelly 1970). Native tenants could claim, and acquire title to, *kuleana* parcels that they actively lived on or farmed at the time of the *Māhele*. The Kuleana Act of December 21, 1849 provided the framework by which native tenants could apply for and receive fee-simple interest in their *kuleana* lands from the Land Commission. The Board of Commissioners over saw the program and administered the lands as Land Commission Awards (LCAw.). Not all lands that were claimed were awarded.

During the *Māhele*, Kanahonua Ahupua‘a (LCAw. 11216) was awarded to *ali‘i nui* Kekau‘ōnohi, granddaughter of Kamehameha I. She was also a niece of Kalanimoku, who served as Kamehameha’s *kālaimoku* or land administrator and her genealogy tied her to the royal bloodlines of both the Maui and Hawai‘i chiefs (Maly 1994). As a result of her high status, her claims did not need documentation and she possessed more land holdings than everyone in the

kingdom with the exception of King Kamehameha III (ibid.). In addition, three *kuleana* parcels (LCAw. 7859, 7131, and 7874) were awarded within Kanahonua Ahupuaʻa, located in close proximity to the current study area (Figure 12) all of which were claimed as house lots. LCAw. 7131 awarded to N. Kaʻai was described in the Native Register (N. R. Vol.8:278-279) as enclosed by a stone wall he built himself, where he had resided since 1837. LCAw. 7874, awarded to Wailuahi, is particularly interesting because the claimant was a female who said she received the land from her husband Kaleiehu (N.R. Vol. 8:313). The Native Testimony for LCAw. 7859 awarded to Kaʻilioholani (N.T. Vol. 4:156-157) was provided by the Konohiki Kepio, who had given the land to the claimant:

> I have seen this houselot in the land parcel of Kaumakani in the land division of Kanahonua, all sides are surrounded by the chiefess [Kekauʻōnohi]. It has been enclosed and there is one house for him, I had given him this interest in 1838, he had it fenced in and is now living there. No one has ever objected to him to this day.

In addition, the Native Testimony for LCAw. 7874 (N.T. Vol. 4:296) also states that the house lot is located in the land parcel of Kaumakani within the land division of Kanahonua, which is consistent with the claim for LCAw. 7859, above.

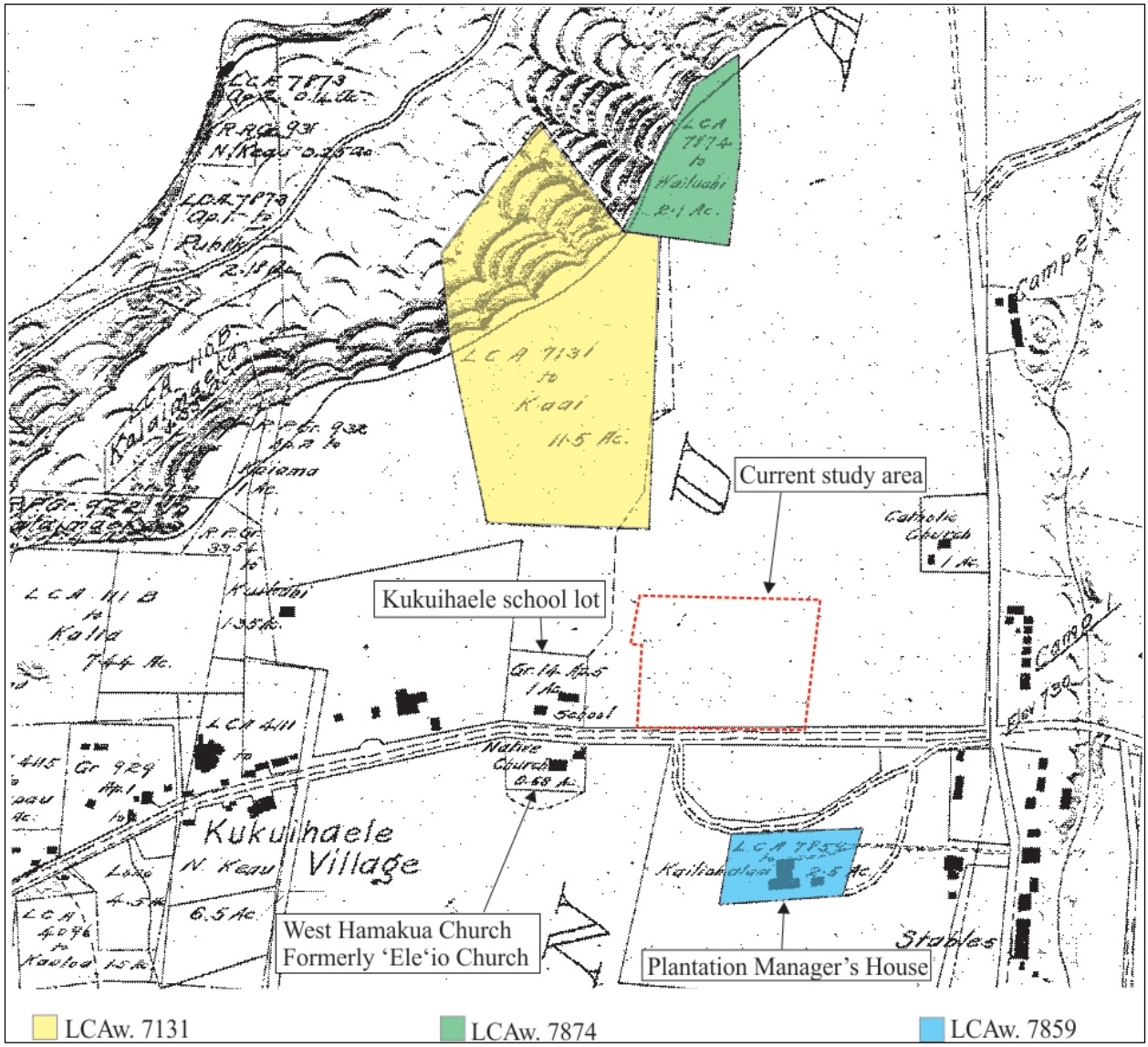

Figure 12. Detail of current study area vicinity from a Pacific Sugar Mill Plantation Map ca. 1905 showing historic property references.

According to Maly (1994) the *māhele* records revealed that native tenants of the lands in the study *ahupuaʻa* of Kanahonua and the greater district of Hāmākua continued to cultivate crops for their own subsistence as well as for tribute to the *konohiki* and the royal family. These cultigens included both wetland and dryland varieties such as taro, *wauke* and *māmaki*, breadfruit, native sugar cane, banana, and bamboo in addition to oranges and coffee, which were recent introductions after European contact (Maly 1994). *Kuleana* parcels were often located near trails and the developing government roads for ease of access to different resource acquisition areas, and transportation purposes. The growing influence of western missionaries was evident in the establishment of churches within existing native communities, which evolved into village centers that would subsequently provide a labor force and access to transportation and shipping routes as western businesses developed in the region (ibid.).

On September 19, 1853 the ʻEleʻio Church lot, located across from the current study area on the *mauka* side of the old Government Road (present day Kukuihaele Road) was granted to the A.B.C.F.M. (Maly 1994). On that same day, the one acre School House Lot at Kanahonua, located north of the current study area, was formally established as the Kukuihaele School Lot (School Grant 14:5). A 1905 map depicts both the Kukuihaele School lot and the ʻEleʻio Church lot, which is labelled "Native Church" (see Figure 12). According to Maly (1994), on March 28, 1859, the initial stone structure of ʻEleʻio Church was completed. Rev. Lyons' journal entries from early 1860 detail the labor the residents of Hāmākua undertook to raise funds for the purchase of construction materials and the challenges they had to overcome to build the church at the top of the *pali* thusly:

> This is very self denying and badly trying labor. It is tedious work to pick it from the ferns, dry it, pack it and take it to the sea side to be shipped. Sometimes they have to descend precipitous rocks and bluffs to get their *pulu*.
>
> But when the vessel brings the lumber, then comes the trying time! There are no harbors on the Hamakua shore. Materials must be landed at the best places that can be found, and then only at certain times of the year. In rough weather no landing can be expected… The people have to struggle hard and work long in the water before the last board is safely on the rocks. Then they must have a hard and long pull to get the lumber in from the rocky shore up the steep precipitous paths and thence up to the site of the church… (Doyle 1953:164-165 in Maly 1994: B-25)

By 1864, native pastors had taken over the congregations of three churches started by Lyons in Hāmākua (Maly 1994). Maly (1994) reports that despite the fact that native churches typically have cemeteries associated with them, his historical documentation review did not reveal any mention of a cemetery within or adjacent to ʻEleʻio Church from its establishment until it was abandoned in 1950.

Around 1868, The Roman Catholic Church acquired the lands originally awarded to *aliʻi nui* Kekauʻōnohi, comprising the majority of Kanahonua Ahupuaʻa. Kekauʻōnohi had left her lands to her husband upon her death in 1851. He followed her in death four years later, owing Bishop & Co. a debt of over $40, 000. Maly (1994) suggests that the Roman Catholic Church purchased the land holdings at auction of the chiefess's estate. The parcel marked Catholic Church (see Figure 12), located *makai* and to the east of the current study area corresponds with the original location of St. Theresa's Catholic Church and Cemetery. Like most of the foreign owned land throughout the islands, much of the Roman Catholic Church's land was transformed for the cultivation of sugar

The Sugar Industry in Hāmākua (1878-1993)

Although the sugar industry was owned and operated primarily by foreign investors and businessmen, sugarcane was widespread throughout the islands of Hawaiʻi since the early Prehistoric Period. Sugarcane was brought to Hawaiʻi by the initial settlers from Polynesia and was used medicinally, as a snack, as a condiment, and also used to strengthen children's teeth by chewing on it (Handy and Handy 1972). Sugar cane was also used to thatch houses when *pili* grass or *lau hala* were not abundant (Malo 1903). The Chinese on Lānaʻi are credited with the earliest production of sugar ca. 1802; however, it was not until 1835 that the commercial production of sugar became established in the Hawaiian Islands (Oliver 1961, Kuykendall and Day 1976). The following excerpt summarizes the history of the sugar industry along the Hāmākua coast:

> The premiere site for sugar growing on the island of Hawaiʻi ran 20 miles southeast from Waipiʻo Valley to the town of ʻOʻōkala. This coastline contained some of the most gulch-ridden acreage on the entire island. But the gully-divided lands above the shore cliffs had rich soil blessed with heavy runoff from the slopes of Mauna Kea. Reaching, cultivating, and harvesting these lands challenged sugarcane farmers. Eventually the many small plantations along this coast were combined into one large operation. When the end came in 1993, there was one survivor, Hamakua Sugar Company. (Dorrance and Morgan 2000:90)

The Pacific Sugar Mill was the most remote of the twenty sugar plantations that sprang up along the Hāmākua coast between 1876 and 1888, with fields located between Waipiʻo valley to the north and the Honokaa Sugar Company lands to the south (Dorrance and Morgan 2000). According to Maly, "plantation communities usually developed around earlier Hawaiian – church settlements, and many *kuleana* were assimilated into plantation holdings for various reasons" (1994:B-28). Indeed, LCAw.'s 7131, 7859, and 7874 in the vicinity of the current study area appear to have been subsumed within the cultivated fields of the Pacific Sugar Mill Plantation (Figure 13). The current study area, which falls within Field 1 of the Pacific Sugar Mill's land holdings (see Figure 13), was also planted with sugarcane during the early years of the plantation (until the mid-1930s). Plantation related development located in close proximity to the current study and Kukuihaele School included multiple structures in Kukuihaele Village, camps and stables (see Figure 12) and the plantation manager's house in addition to plantation infrastructure such as flumes, ditches and roads (see Figure 13).

According to Dorrance and Morgan, "each mill on the Hāmākua Coast had a landing. Using lighters, raw sugar and plantation supplies were delivered to and from vessels anchored offshore (2000:91)." The mill and landing (Kukuihaele Landing) operated by the Pacific Sugar Mill were located to the northeast of the current study area in Keaʻā Ahupuaʻa (Figure 14). The mill site was linked to the cane lots by the plantation tramway, the government road, a narrow gauge railway system, and a flume network. In order to get the milled sugar to vessels for export, the Pacific Sugar Mill and later the Honokaa Sugar Company utilized the landing at Kukuihaele as a shipping facility. The Kukuihaele Landing (see Figure 1) was one of nine wire landings on the windward coast of Hawaiʻi Island (Nelson 1974). Wire landings were developed in the late 1890s and consisted of four mooring buoys that were anchored offshore in a rectangular configuration to which a vessel would tie itself facing into the wind (ibid). A structure known as a hoist house, located on top of the bluff (Figure 15), held the equipment used to run a cable car along the wire from the bluff to the awaiting vessel offshore.

The following excerpts of historical information pertaining to the Pacific Sugar Mill was compiled by Kalima (1991) from the Hawaiian Sugar Planters Association Archives (H.S.P.A.):

> . . . It extended along the coast for four miles and up the mountains for two to nine miles. The elevation ranged from 300 to 1,900 feet giving a variety of growing conditions. Half of the land was arable; the remainder was pasture and forests.
>
> The beginnings of the Pacific Sugar Mill are not entirely clear. A Charter of Incorporation dated August 19, 1879 lists Samuel Parker and F.A. Schaefer as the founders. Other published sources cite Dr. Mott-Smith, Dr. Trousseau and Mr. Herbert Purvis as founders/proprietors of the enterprise. Material in the collection does confirm that the plantation was started in 1878 and the first crop harvested in 1880 with F.A. Schaefer and Co. as the agents.
>
> Pacific Sugar Mill had the distinction of introducing the first mongoose into Hawaii. In 1883 W.H. Purvis imported them from India and Africa for rat control on the plantation. . .
>
> While most plantations had a small herd of cattle, Pacific Sugar Mill was unusual because it also had over 600 head of sheep. Free mutton was provided for employees along with free housing, fuel and medical care. As on most plantations, the early work force consisted of Chinese and native Hawaiians. Later on Japanese, Portuguese, Spaniards, Puerto Ricans, Koreans, and Filipinos came to work on the plantation both as day laborers and contract workers.
>
> By 1908 Pacific Sugar Mill had a nine-roller mill and produced an average crop of three tons per acre. The cane was delivered by flumes to a railroad which stretched across the plantation from east to west. The railroad was about four miles long and extended from Kukuihaele landing to the plantation's Honokaʻa's [sic] boundary. Pacific Sugar Mill also had a wire rope landing to transport sugar bags to steamers for shipment.
>
> The water for the flumes was obtained by diverting the Hiʻilawe Stream which had its source in the Kohala Mountains. Pacific Sugar Mill also had the water rights to Lalakea Stream and to Kukuihaele Valley Stream. The water was transported partly through a flume and partly by a ditch to a reservoir at the head of the plantation. Four more reservoirs with an estimated capacity of 50,000,000 gallons were also constructed. This supply of water not only enabled Pacific Sugar Mill to transport all of its cane to the mill but was sufficient enough to enable Honokaa Sugar Company to flume 50% of it crop. (1991:B9-10)

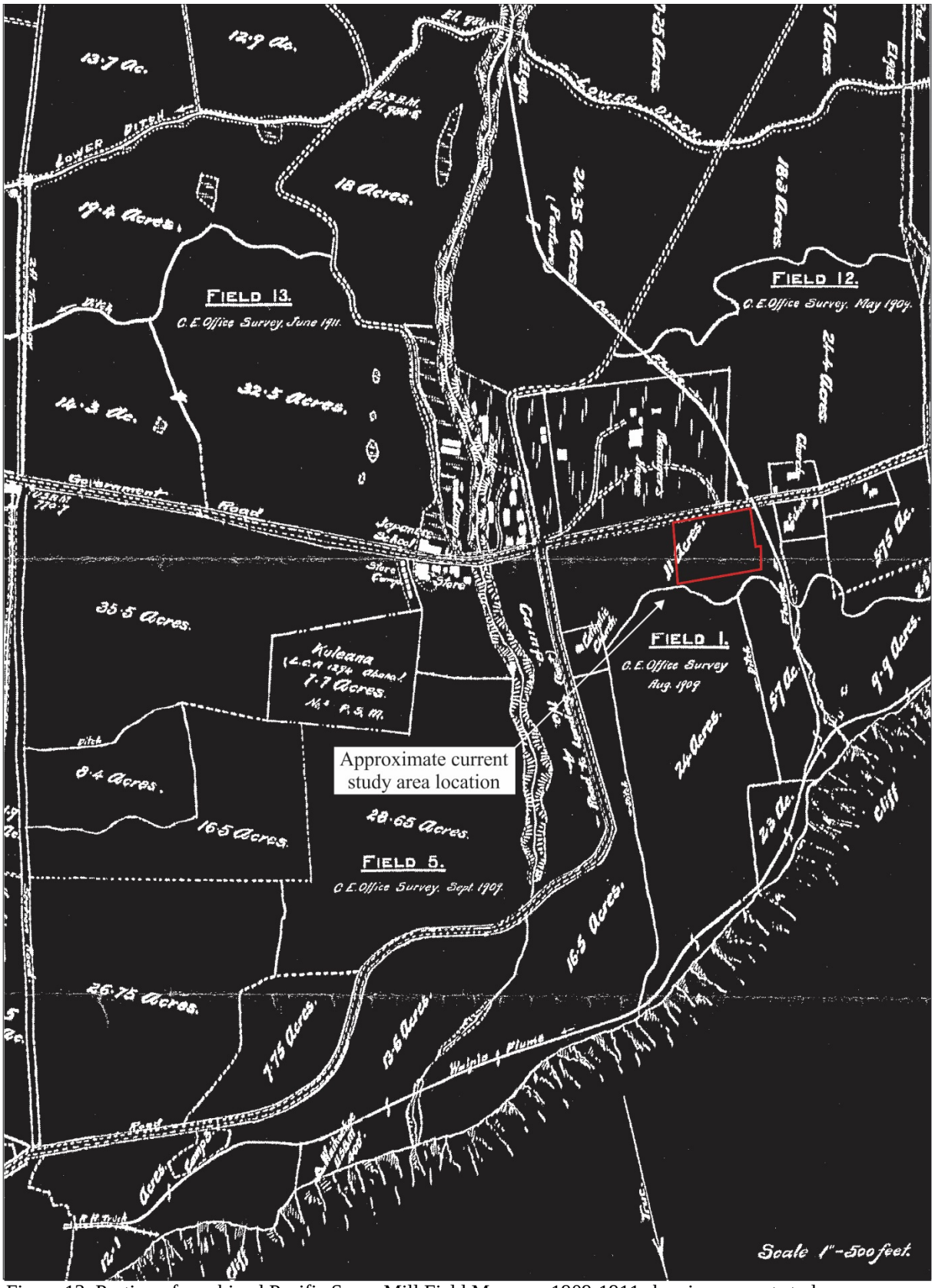

Figure 13. Portion of combined Pacific Sugar Mill Field Maps ca. 1909-1911 showing current study area boundary in red and historic properties in the vicinity, adapted from Maly (1994:B-18).

Figure 14. 1916 USGS map showing location of mill site and landing of the Pacific Sugar Mill.

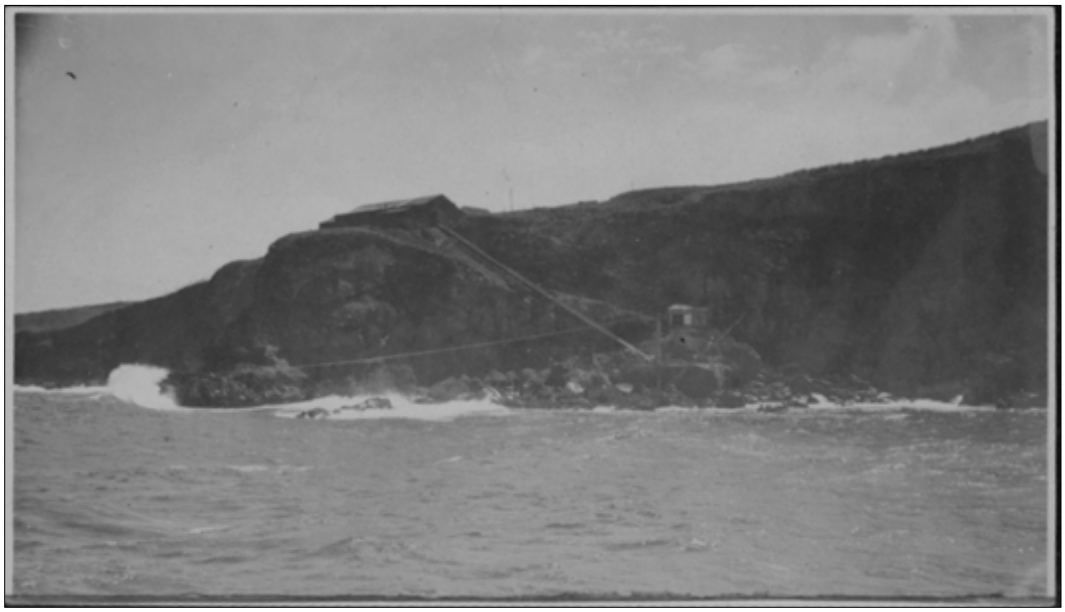

Figure 15. Kukuihaele Landing ca. 1910, showing hoist house and cables.

According to the H.S.P.A. archives, the Pacific Sugar Mill failed as a viable business enterprise largely due to mismanagement, which was exacerbated by an epidemic of a livestock disease in 1907 (Kalima 1991). Dorrance and Morgan write of the Pacific Sugar Mill's subsequent decline, "Beginning in 1913, the plantation shut down its mill, connected its railroad to the neighboring Honokaa plantation, and had its cane ground by the Honokaa Sugar Company" (2000:93). At this time, the administration of the Honokaa Sugar Company and the Pacific Sugar Mill was brought under one manager (Kalima 1991). This partial merger was a success and soon yielded a ten-fold increase in production compared to the original harvest (Dorrance and Morgan 2000). Then in 1928 F.A. Schaefer formally dissolved the Pacific Sugar Mill and became the Kukuihaele Division of its neighbor, Honokaa Sugar Company (Kalima 1991; Dorrance and Morgan 2000).

In 1929, the Honokaa Sugar Company began utilizing the Kukuihaele Landing to direct ship raw sugar to San Francisco (Dorrance and Morgan). Around this time, (the 1930s) Handy and Handy (1972) observed wet taro fields of Hāmākua that extended from Honokaʻa to neighboring Kukuihaele Ahupuaʻa, which indicates that traditional

agricultural practices continued in the gulches at the same time that sugar was being cultivated on the flat lands between. Handy and Handy (1972) noted the presence of high walled terraces watered by Waikoekoe Stream, but that several of the smaller upland terraces had been converted to reservoirs by the sugar company.

Honokaa Sugar Company continued to use the Pacific Sugar Mill's landing until it was shut down during World War II. Following the war, after the 1946 *tsunami* destroyed the railroad and it closed, shipment resumed from Kukuihaele Landing until 1949, when bulk sugar began to be shipped via trucks for export from the port of Hilo (ibid). In 1951, Theo Davies bought F.A. Schaefer & Company in order to acquire Honokaa Sugar Company. In 1972, Davies purchased Pauhau Sugar Company and merged it with Honokaa Sugar Company. In 1979, Honokaa Sugar Company was merged with Laupahoehoe Sugar Company to form Davies Hamakua Sugar Company, which in 1984 was purchased by Francis Morgan who dropped the Davies from the name and created Hāmākua Sugar Company. Hāmākua Sugar Company operated from 1984 until 1993, when the fields were harvested for the last time and the 36,000 acre plantation was shut down for good.

As can be gleaned from the discussion of the Hāmākua sugar industry above, even though the Pacific Sugar Mill failed as an independent entity by 1928, sugar continued to provide jobs to residents in the community until the 1990s when Hamakua Sugar ceased operations entirely. The aerial photograph reproduced in Figure 16 below shows the extent of sugar cane cultivation in the vicinity of the current study area. Sugar cane fields have since given way to Macadamia nut orchards located between Kapulena and Kukuihaele. However, the sugar plantation manager's house (SIHP Site 15006) remains as a reminder of over a century of sugar cultivation. The historic house is situated in the ʻili of Kaumakani (lit. translation: placed in the Wind) across from the current study area on the *mauka* side of Kukuihaele Road within LCAw. 7859 (see Figures 12 and 13). This Historic Property will be discussed in further detail in the Previous Archaeology section below.

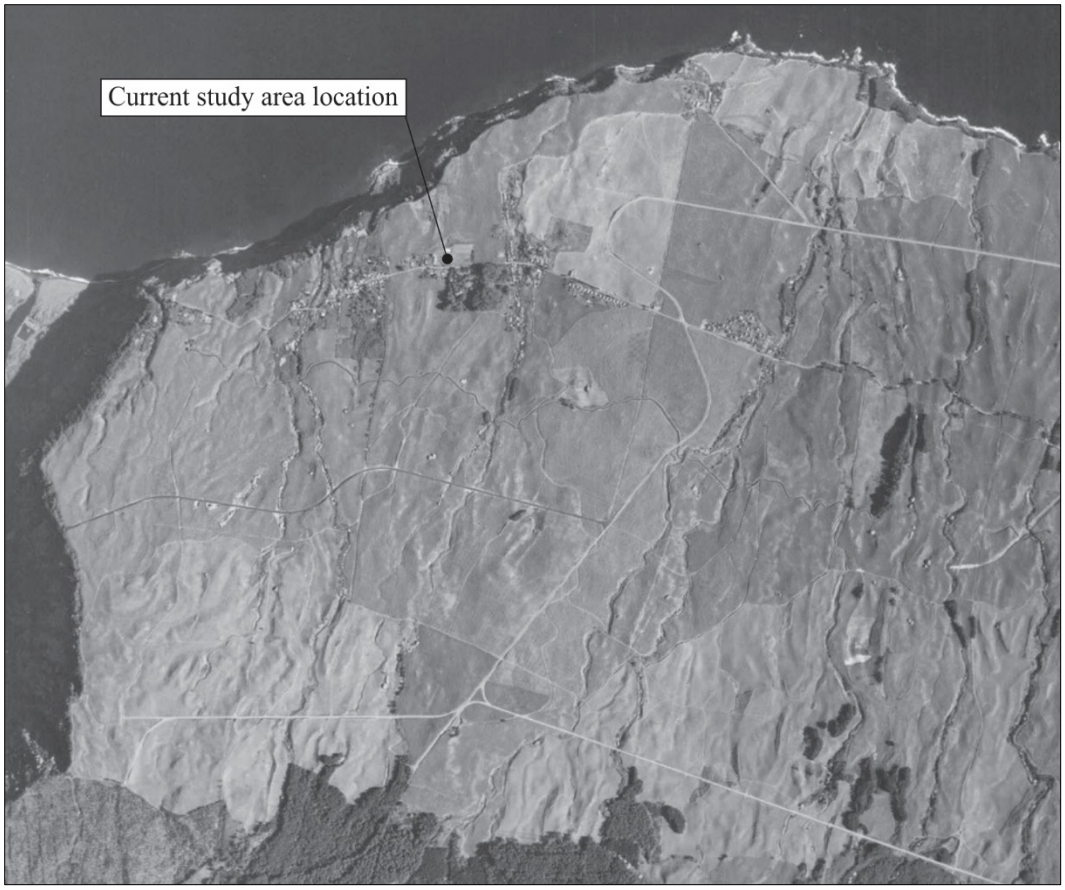

Figure 16. Hāmākua coastal lands showing extensive cane lots in the vicinity of the current study area ca. 1954.

The Kukuihaele School and Park

A review of correspondence and historic documents related to the Kukuihaele School lot and the current study area, in particular provided valuable information and a timeline for the development of the area since the late 1800s. Details from these documents highlighting the development of the school and park property are summarized below.

According to the Inventory of Structures and Improvements of Land for the Kukuihaele School Grounds for the years 1885 through 1961 a wooden schoolhouse building was constructed or improved upon in 1885. A wooden schoolhouse building also appears in a later entry dated 1913. In 1915, another wooden building specified as a cottage is listed with an associated structure and improvement cost of $1,000.00. In 1931, a five acre addition to the Kukuihaele School Lot was proposed (C.S.F. 5936), which corresponds with the location of the current study area and extends beyond the western boundary of the roughly four acre study area (Figure 17).

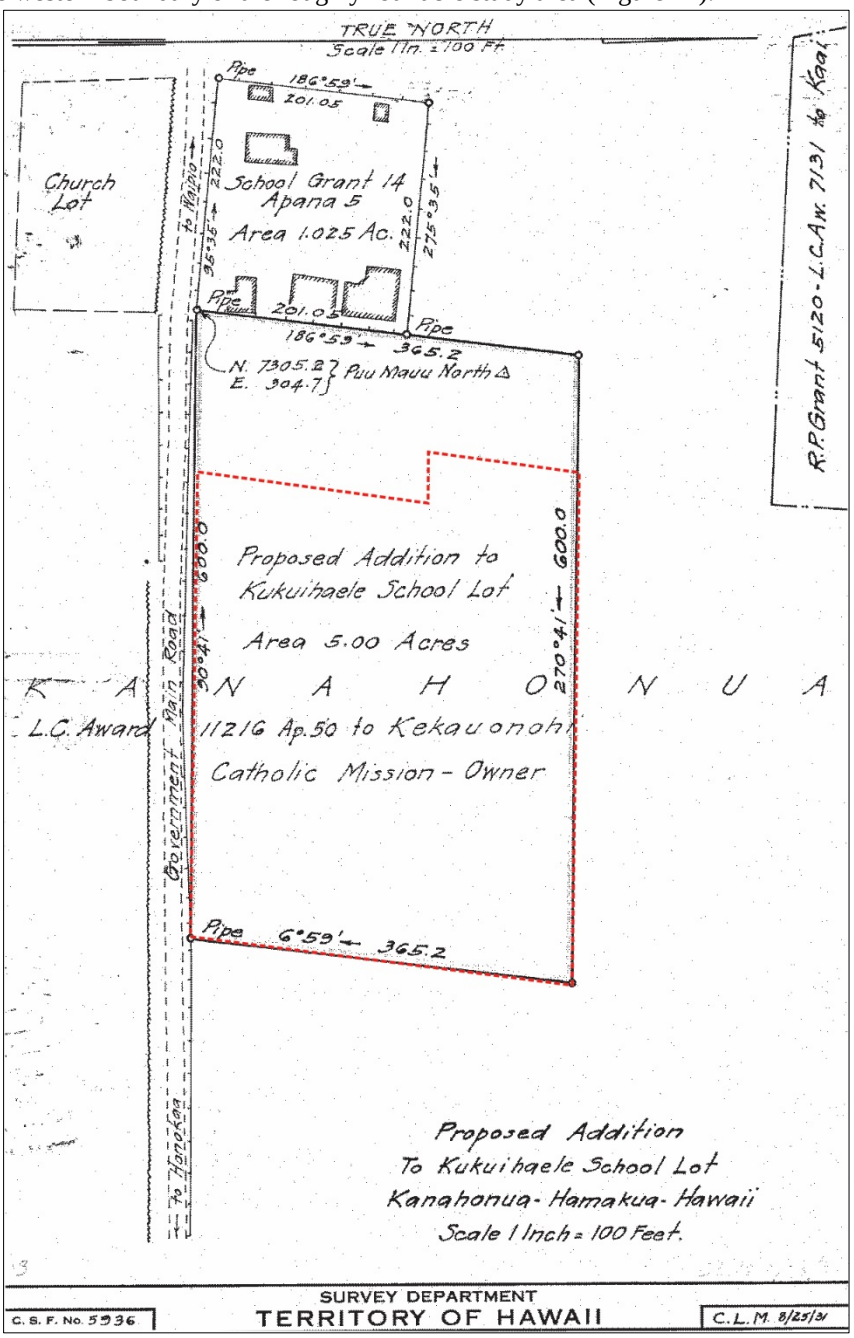

Figure 17. 1931 map (C.S.F. 5936) showing the current study area as a proposed addition to the Kukuihaele School Lot.

On January 28, 1932, the five acre parcel, which includes the current study area, was deeded to the Territory of Hawai‘i by the Roman Catholic Church of the Territory of Hawai‘i (Land Office Deed 4324). In 1940, another cottage is listed in the structure and improvement inventory, and described as a duplex with an associated cost of $4,650.00, which was considerably more than the cost for the 1915 cottage. The cost of the duplex cottage structure and improvements is the single most expensive undertaking included in the inventory, which may imply that the 1940 cottage was larger, and of higher quality with more amenities. The 1940 duplex cottage likely corresponds with a building marked “cottage” that appears within the current study area parcel in a 1964 Plot Plan of the Kukuihaele School (Figure 18).

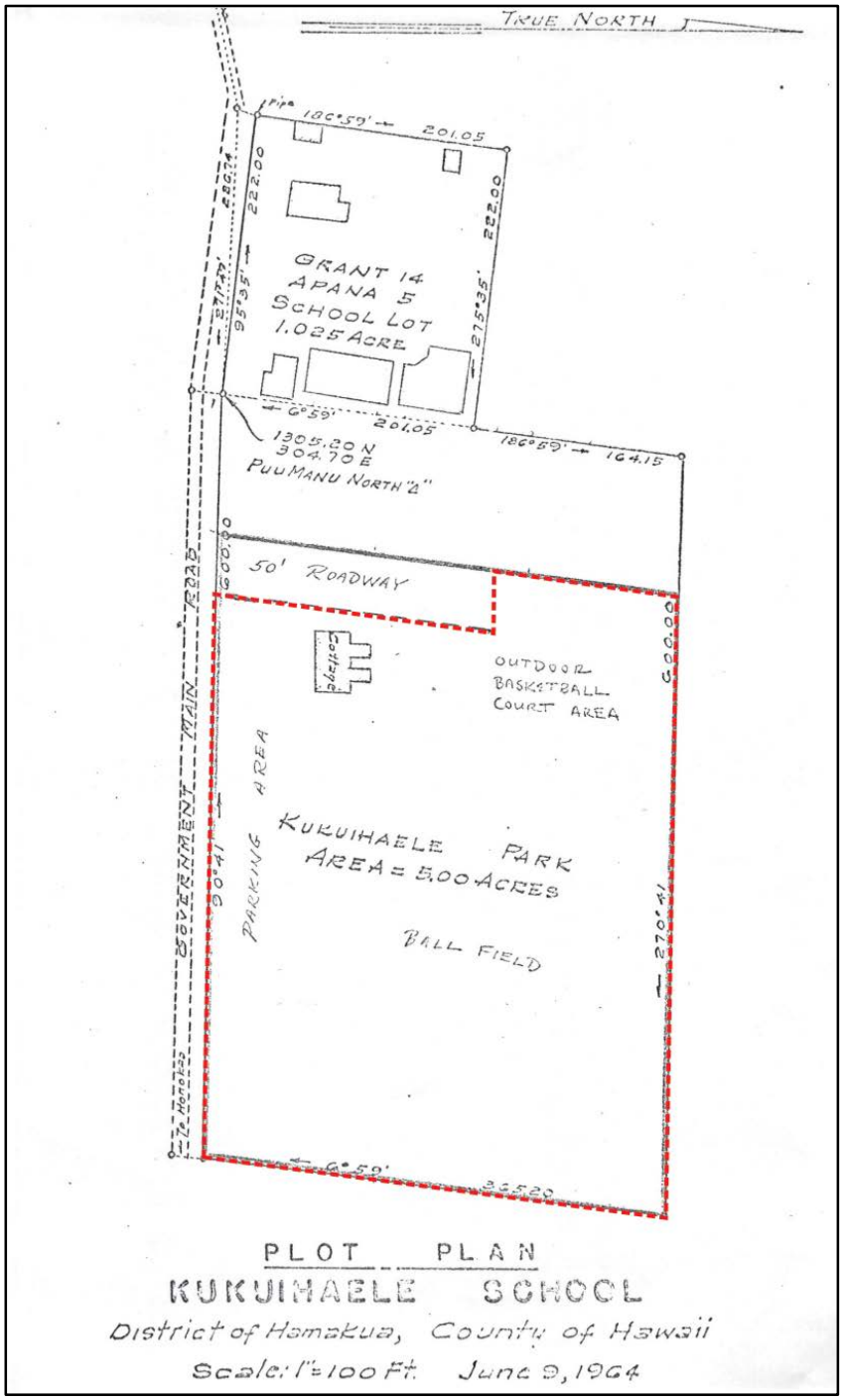

Figure 18. Kukuihaele School lot ca. 1964 showing location of historic cottage building and current study area boundary in red.

Around the same time that the cottage was constructed, the Honokaa Sugar Plantation installed a baseball field in the northeastern portion of the five acre parcel that falls within the current study area (see Figure 18). The Kukuihaele School remained in operation until 1965, at which point the Department of Education began an arduous process with the ultimate goal of turning the entire parcel over to the County of Hawai‘i for use by the Parks and Recreation Department. The five acre parcel was classified as Section B of Executive Order No. 527, which had to be cancelled prior to its return to the State of Hawai‘i for use as a park. The initial request for action languished for two years until the Board of Supervisors of the County of Hawaii convened on September 6, 1967 and made the following request to Governor Burns in a letter dated September 14, 1967:

> The County would like to provide this recreational service for the people of this area on a permanent basis if the requested site is made available for acquisition.

Subsequently, on March 24, 1969 the Director of the Department of Parks and Recreation submitted a request to the Superintendent of the Department of Education for authorization to use the former Kukuihaele school buildings for recreational and community functions for the County. In a letter to the Chairman of the Board of Land and Natural Resources dated June 3, 1976, Mayor Matayoshi outlined the County’s plans for the current study area. Although the school had been closed for more than ten years and the Department of Education had initiated the transfer of the lands to the Parks Department, the recreational facility in Kukuihaele remained part of an envisioned plan, rather than a reality. This plan included seeking federal funding for the development of the community center and the conversion of the former duplex cottage to a facility for meetings and other indoor activities. A brief mention is made at the end of the letter to an existing revocable permit for the use of the former teacher’s cottage issued to a Mr. Tanaka, which suggests that Mr. Tanaka be allowed to remain on the premises until the community center project was initiated.

A 1978 letter accompanying a petition for the addition of two tennis courts to the existing school playground facility is a valuable source of information about the current study area. The letter is composed by Paul Christensen (1910-2006), a member of the Kukuihaele community since 1933, originally from New York who worked for over forty-two years for Honokaa Sugar Company. He was a revered member of the community and recorded daily events at the sugar plantation and the Kukuihaele area in thousands of photographic images (the Paul Christensen Photographic Collection). The letter reveals that the baseball field known locally as Kukuihaele Baseball Park had originally been part of the school playground facility in addition to the basketball court. Furthermore, the area below the duplex teacher’s cottage and the basketball court was known locally as “the school garden plot”. In addition, it appears that the old cottage was still inhabited at the time the letter was written (in 1978). A selection of his photographs depicting the current study area are reproduced below (Figures 19-23).

Figure 19. Kukuihaele School building, view *makai* (Photo: NHERC Heritage Center Paul Christensen Collection).

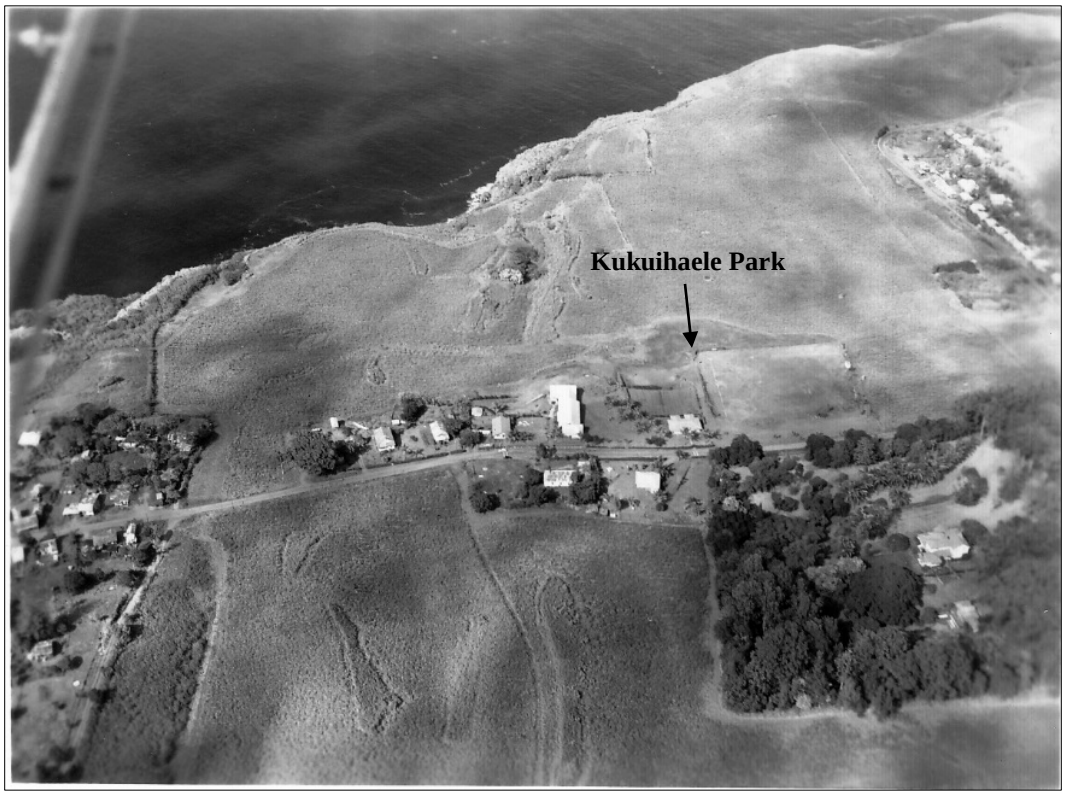

Figure 20. Kukuihaele aerial showing teacher's duplex cottage and adjacent ball field in ca. 1950 (Photo: NHERC Heritage Center Paul Christensen Collection)

Figure 21. Kukuihaele Athletic Club in front of ball field backstop, view to the northwest (Photo: NHERC Heritage Center Paul Christensen Collection).

Figure 22. Kukuihaele baseball park with second base in foreground, view *makai* (Photo: NHERC Heritage Center Paul Christensen Collection).

Figure 23. Kukuihaele park aerial with duplex teacher's cottage ca.1960s, view *mauka* (Photo: NHERC Heritage Center Paul Christensen Collection).

By 1991, the current study area is referred to as Kukuihaele Park in official correspondence. A January 24, 1991 letter from the Parks Department reports that playground equipment was installed at Kukuihaele Park and goes on to assure that park maintenance would be upgraded to bring the park back to its fullest potential for the enjoyment of the community. A 1999 letter to the Parks Department from the County Council sought to address the lack of suitable parking for the park and the damage caused by people driving into the park. Shortly thereafter, this letter was followed by a Department of Parks and Recreations memorandum confirming that the State planned to demolish the former teachers' cottages on the parcel adjacent to the current study area and then turn the site over to the County of Hawaii as an addition to the park. Based on a review of aerial images, the cottage was still standing in early 2000, and was demolished sometime thereafter. Finally, in January of 2003 the official boundaries of the park site at Kanahonua were determined (C.S.F. No. 23,444).

PREVIOUS ARCHAEOLOGICAL STUDIES

Since the beginning of the early twentieth century, Waipiʻo Valley to the west of the study area has drawn the focus of much of the archaeological research in the Hāmākua District. Very few previous archaeological studies have been conducted in Kanahonua Ahupuaʻa. The earliest archaeological studies that included Kanahonua Ahupuaʻa were three separate surveys focused on the identification and recording of *heiau* and coastal sites during the early 1900s (Thrum 1908; Stokes 1919; Hudson 1932). These early endeavors did not reveal any sites in the vicinity of the current study area or Kanahonua Ahupuaʻa in general. Over the next sixty years there were no archaeological studies conducted in Kanahonua Ahupuaʻa. However, in 1974, the Honokaʻa Sugar Company Manager's House located on the *mauka* side of Kukuihaele Road opposite the current study area (TMK: (3) 4-8-006:003), was added to the Hawaii Register of Historic Places (HRHP) and assigned HRHP identification number 50-10-7-7176. The house was designed by Edgar A.P. Newcomb and built ca. 1920. According to Franklin et al. (1994), the site has been off of the State Register of Historic Places since 1980 and was designated as SIHP Site 15006 as a result of a 1991 survey (Head and Goodfellow 1991), which will be discussed along with the results of another relevant study below.

In 1991, Paul H. Rosendahl, Inc. (PHRI) conducted an archaeological inventory survey (Head and Goodfellow 1991) of 3,770 acres known as the Waipio Lands of the Hamakua Sugar Company (Figure 24). Their study area included a portion of Kanahonua Ahupuaʻa and crossed five adjacent *ahupuaʻa*. As a result of their combined variable-coverage aerial and pedestrian survey, augmented with limited subsurface testing, PHRI recorded forty-four sites (SIHP Sites 14986-15029) containing one hundred and twenty-six features. The sites consisted of twenty multi-component complexes and twenty-four single feature sites. Agricultural terraces were the most commonly encountered feature type (n=47) followed by modified outcrops (n=18) within their project area, which also contained a few mounds, walls, enclosures and platforms. Site function was classified primarily as agriculture or habitation or a combination of the two functions. In the vicinity of the current study they recorded two cemeteries (Sites 15008 and 15009) and a historic residence (Site 15006). Site 15008 is located southwest of the current study area near Highway 240, and described as a historic cemetery with a small wooden building and approximately fifty graves. Site 15009 is another historic cemetery consisting of approximately 58 graves located along the boundary between Kanahonua and Waikoʻekoʻe Ahupuaʻa, east of the current study area (see Figure 24). As previously mentioned, the historic residence designated Site 15006, appears to correspond with HRHP 7176, PHRI described the site in 1993 as series of wooden structures in fair-good condition located in a slightly sloping area between Highway 240 and Kukuihaele Town (see Figure 24).

In August 1993 and June 1994, PHRI conducted additional archaeological survey (Franklin et al 1994) of a portion of the aforementioned Head and Goodfellow (1991) project area (TMKs: (3) 4-8-006: 008, 009, 011, 013, 043, 044) in order to record the condition and collect supplementary data for some of the previously recorded sites within Kanahonua and Waikoʻekoʻe Ahupuaʻa (see Figure 24). As a result of their revisit, PHRI relocated seven previously recorded sites, including Sites 15006, 15008, and 15009 in the vicinity of the current study area. Franklin et al. provide a more detailed description of Site 15006, referring to the 8.5 acre site as a "well-tended estate composed of the following architectural features: main house, keeper's cottage, 3-car carport, small porte cochere, gardens, paved driveway and parking area, tennis court, and swimming pool (1994:24)." Of Site 15008 Franklin et al. add that the historic cemetery is the aforementioned Saint Theresa Catholic Cemetery with headstones dating from 1883-1991, and that the associated wooden structure is not of historic origin. Franklin et al. describe Site 15009 as a historic Hawaiian cemetery with graves dating back to 1879, which was still in use at the time of their study (ca. 1994), and which corresponds to the location of the County Cemetery established in 1935, mentioned above.

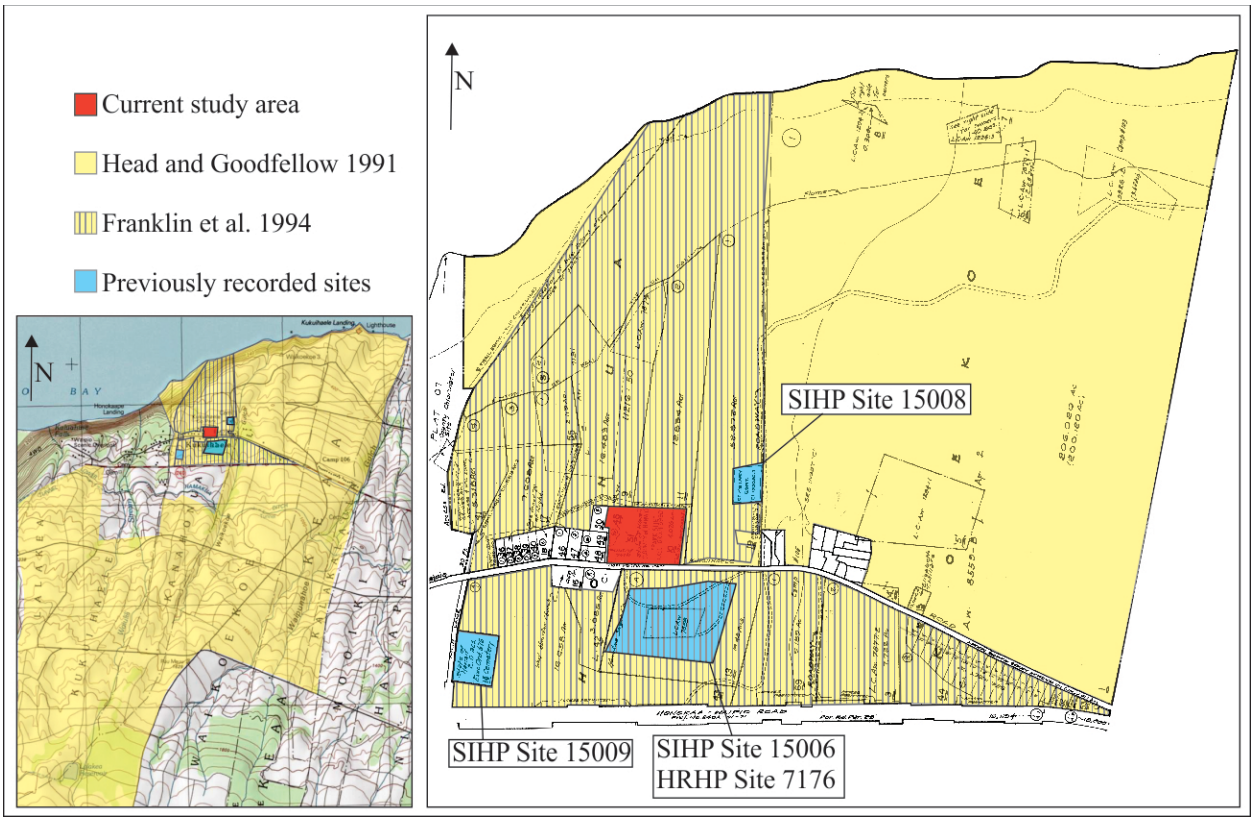

Figure 24. Previous archaeological studies conducted in the vicinity of the current study area.

In 2007, Cultural Surveys Hawai‘i, Inc. (CSH) prepared a supplemental archaeological surveying, recordation, monitoring, discovery, and data recovery plan (Hazlett et al. 2007) for the Hāmākua Ditch System. Their project area consisted of a 50-foot wide corridor that extends roughly east-west for five miles across twenty-six *ahupua‘a* in the Hāmākua District, including Kanahonua. No fieldwork was conducted within Kanahonua Ahupua‘a as part of that study, nor were any archaeological findings presented, although the Lower Hāmākua Ditch, which passes through the *ahupua‘a*, *mauka* of the current study area, is itself a Historic property.

3. STUDY AREA EXPECTATIONS

In *A Regional Synthesis of the Hāmākua District, Island of Hawai‘i*, Dr. Ross Cordy (1994) summarized the general Prehistoric and early Historic land use patterns for the entire district of Hāmākua. The summary is based on a review of *Māhele* records combined with a detailed examination of archival historical information and archaeological site records. According to Cordy, the study *ahupua‘a* of Kanahonua falls within the subregion he termed the Lower Windward Slopes of Mauna Kea, which is part of the greater region of East Hāmākua.

Cordy (1994) defined four general environmental zones within East Hāmākua: (1) the Sea-shore, (2) the Seaward Upland Slopes, (3) the ‘Ōhi‘a-Koa Forest Zone, and (4) The Gulches. The current study area is located just above the Sea-shore within the lower portion of the Seaward Upland Slopes. The Seaward Upland Slopes was the primary residential and farming zone in the region. *Kuleana* parcels, consisting of house lots with nearby non-irrigated garden plots were concentrated here between the sea cliffs and the *Alanui Aupuni* or Government Road. The dominant crop of the Seaward Upland Slopes, in general, was dryland taro, but sweet potatoes and bananas were also commonly grown (ibid). However, Kanahonua Ahupua‘a was among those mentioned by Cordy to be an exception to the dryland agricultural trend, for it appears that walled and terraced pondfields were planted with taro along streams in the more western *ahupua‘a* of East Hāmākua (ibid). Trails linking the permanent housing areas in the Seaward Slopes Zone with the Forest Zone also existed, in addition to rock cairns and rock walls that marked the boundaries of *ahupua‘a* and separated agricultural fields (ibid).

As previously discussed, prior archaeological investigations in the vicinity of the current study area found Historic Period sites related to the local sugar plantation and the community that emerged as a result of the sugar industry. However, none of these sites were recorded within the current study area itself. The current study area was a cane field during the late nineteenth to early twentieth century prior to becoming part of the Kukuihaele School lot and playground during the mid-twentieth century. This parcel was developed into the current park configuration during the 1940s, and been used continuously for that purpose ever since. A teacher’s cottage/duplex, built in 1940, was present on the property until it was demolished during the early 2000s.

Based on the specific land use history for the current study area as a park and former sugar cane field in addition to the data gathered from extensive background research, and a review of archaeological fieldwork previously conducted in the vicinity of the current study area, the archaeological expectations are limited. It is highly unlikely that any evidence of Precontact sites such as ancient foot trails or temporary habitations will be encountered, as over a half century of sugar cultivation likely removed any evidence of these former site types. Previous archaeological studies conducted in the vicinity of the current study area have shown that sugar plantation related features, such as irrigation ditches, flumes, remnants of the tramway or railway, wooden structures, and roads are much more likely to be encountered. However, any evidence of these site types formerly present within the study area were likely destroyed when the parcel was converted to a park in the 1940s. It is possible that remnants of the Historic teacher’s cottage or other Historic park infrastructure will be encountered within the study area, but again the park property has been updated (maintained) continuously over the years, and the teacher’s duplex was removed in the early 2000s, indicating that Historic elements of the park property are not likely to remain.

4. CURRENT FIELD INVESTIGATION

Fieldwork, consisting of 100% pedestrian survey of the roughly four acre study area, was conducted on October 9, 2015 by Matthew R. Clark, B.A and Lauren Kepaʻa under the direction of Robert B. Rechtman, Ph.D. The surface of the entire park parcel, including the overgrown areas along the boundaries, was examined for extant archaeological remains, but none were encountered. All of the existing park infrastructure, including three concrete slabs for picnic tables and the concrete basketball court, appear less than fifty years old. Portions of several other broken concrete slabs that were also likely formerly foundations for picnic tables have been moved to the edge of the ball field for eventual disposal. No evidence of the former teacher's duplex was identified.

As part of the draft EA, an effort was made to obtain information from knowledgeable informants about any potential traditional cultural properties and associated practices that might be present or have taken place in on the park property. The EA team spoke with Milton Lau Kong, who was born and raised in Waipiʻo Valley, with both parents of Chinese and Hawaiian ancestry. He attended 8 years at Kukuihaele School and has lived next to Kukuihaele Park for 40 years. His information on the property and history of Kukuihaele was extremely helpful for understanding the Historical context; he witnessed the dismantling of the teacher's duplex, and indicated that substantial site work was required to completely remove the structure and return the area to lawn. Mr. Lau Kong supports improvement of the park, and did not see any negative impacts to cultural properties or practices. He stated that his concern was for children in the area, and he wanted to see the park regain its recreational importance in his community. Similar sentiments were expressed by Gladys Toko, whose father, Victor Hauanio, was the pastor of the Hawaiian Congregationalist Church in Kukuihaele and who has lived in the area her entire life, as well as Lawrence Fujioka, a lifelong resident. None of the interviewed Kukuihaele residents indicated that the park currently supported any traditional cultural uses or that the project would adversely impact cultural practices or resources.

Figure 25. Broken concrete slabs moved to the edge of the ball field, view to the east.

5. CONCLUSION AND RECOMMENDATIONS

As a result of the current Archaeological Assessment survey there were no archaeological resources identified of any kind within the current study area. Thus, it is our conclusion that the proposed improvements to Kukuihaele Park will not affect any historic properties. With respect to the historic preservation review process of both the Department of Land and Natural Resources–State Historic Preservation Division (DLNR–SHPD) and the County of Hawai‘i Planning Department, our recommendation is that no further work needs to be conducted prior to or during project implementation. In the unlikely event that significant archaeological resources are discovered during the implementation of the proposed park improvement project, work should cease in the area of the discovery and DLNR-SHPD contacted pursuant to HAR 13§13-280-3.

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