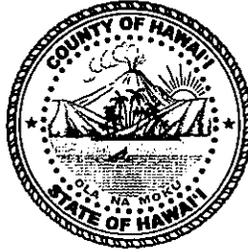


William P. Kenoi
Mayor

William T. Takaba
Managing Director



Warren H. W. Lee
Director

Brandon A. K. Gonzalez
Deputy Director

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

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OFF. OF ENVIRONMENTAL
QUALITY CONTROL

February 10, 2012

Mr. Gary Hooser, Director
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, HI 96813

Subject: Draft Environmental Assessment for Ka'ū District Gym and Shelter,
Pahala, Ka'ū District, Hawai'i, TMK (3) 9-6-005:008 (portion

The Hawai'i County Department of Public Works has reviewed the Draft Environmental Assessment for the subject project and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability for this project in the next OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form, one copy of the document in pdf format, one copy of the Draft EA, and the project summary on disk. Please call David Yamamoto of the Hawai'i County Department of Public Works at 961-8466 or Tammy Kapali at PBR HAWAII at 521-5631 if you have any questions.

Warren H. W. Lee, Director

Attachments

Project Name: Ka'ū District Gym & Shelter**Publication Form
The Environmental Notice
Office of Environmental Quality Control**

Instructions: Please submit one hardcopy of the document along with a determination letter from the agency. On a compact disk, put an electronic copy of this publication form in MS Word and a PDF of the EA or EIS. Please make sure that your PDF documents are ADA compliant. Mahalo.

Applicable Law:	HRS §343-5(a)(1) (use of State or County land or funds)
Type of Document:	Draft Environmental Assessment
Island:	Hawai'i
District:	Ka'ū
TMK:	(3) 9-6-005:008 (portion)
Permits Required:	Height and Parking Variances Plan Approval National Pollutant Discharge Elimination System Permit Grading/Building Permits
Applicant or Proposing Agency:	County of Hawai'i Department of Public Works
Address	Department of Public Works Aupuni Center 101 Pauahi Street, Suite 7 Hilo, HI 96720
Contact & Phone	808-961-8466 (David Yamamoto, P.E., Project Manager)
Approving Agency/ Accepting Authority:	Hawai'i County Department of Public Works, as the Mayor's Designee
Address	Aupuni Center, 101 Pauahi Street, Suite 7, Hilo, HI 96720
Contact & Phone	Warren Lee, Director, 808-961-8321
Consultant:	PBR HAWAII
Address	1001 Bishop Street, ASB Tower, Suite 650, Honolulu, Hawai'i 96813
Contact & Phone	Tammy Kapali (808) 521-5631

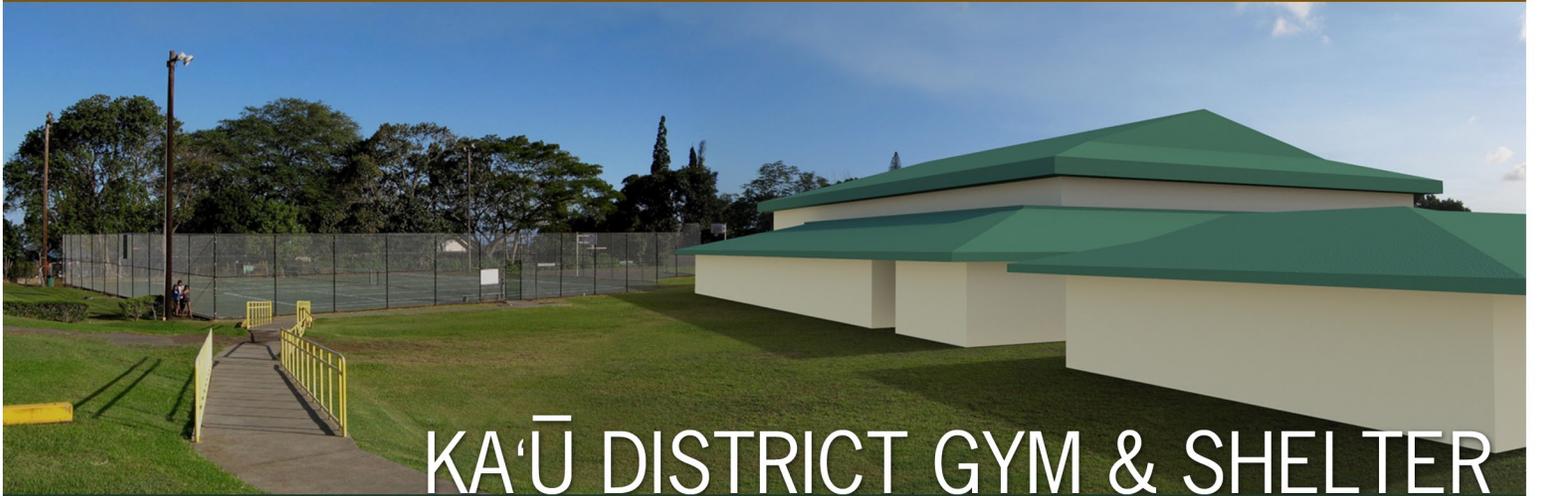
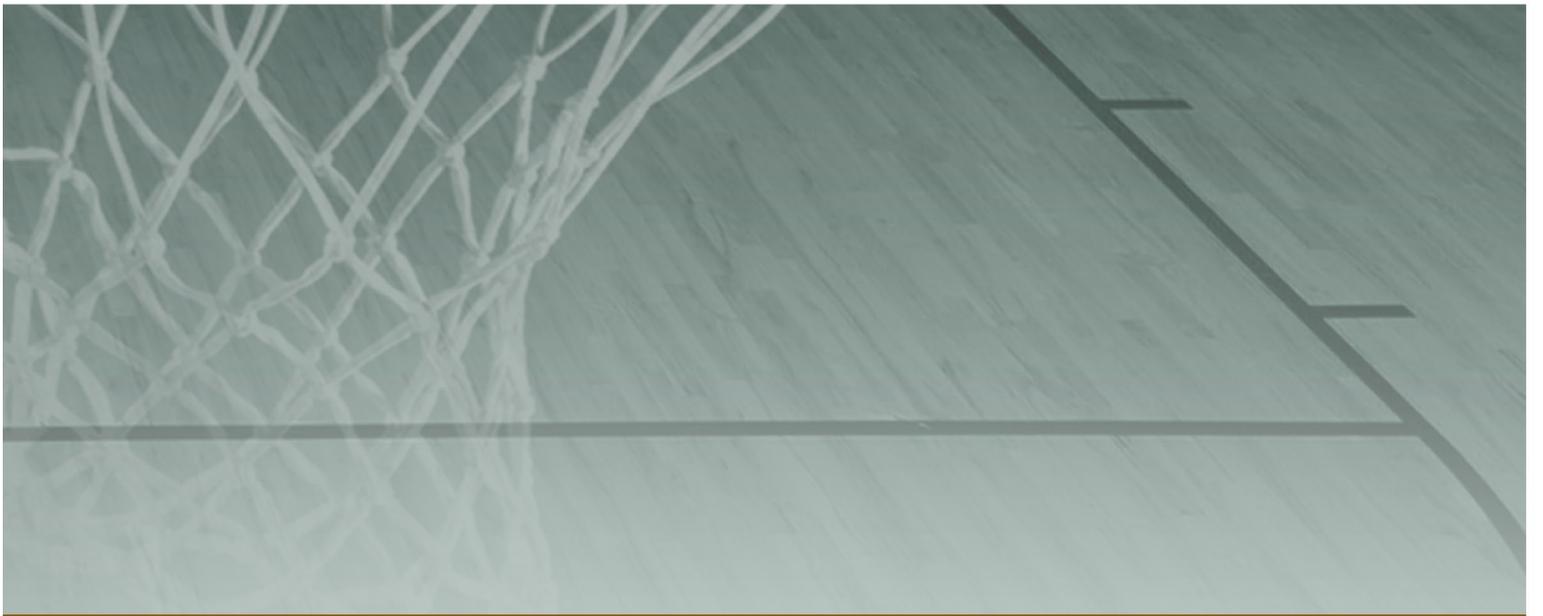
Project Summary: Summary of the direct, indirect, secondary, and cumulative impacts of the proposed action (less than 200 words). Please keep the summary brief and on this one page.

The Ka‘ū District Gym & Shelter will be a new gymnasium located on the school grounds of the Ka‘ū High and Pāhala Elementary. The facility will be jointly used by the school and the community and managed by the County Department of Parks & Recreation. The facility will be designed as a hurricane and vog shelter for an area that is the most vulnerable in the State to vog and where the existing shelter does not meet minimum hurricane shelter criteria. The existing gym is old and too small for the wide range of athletic, school assembly, and community needs.

The following potential adverse impacts would be mitigated:

- Potential distraction to night-flying birds from exterior lighting. The design will specify minimal shielded security lighting. All other exterior lighting would be turned on only as needed and designed in accordance with the County’s exterior lighting standards.
- Noise impacts to neighbors. Operational policies will require activities to cease no later than 10:00 p.m.
- Lava tubes. Geotechnical surveys located no significant lava tubes underlying the Site.

The only unavoidable impact would be the obstruction of views for a few residents. The views of most residents are already blocked by existing school buildings or trees. The benefits provided by the higher ceiling for athletic activities and plantation-style roof line offset the unavoidable impact. There are no impacts to endangered species; the Project is not located in a flood, tsunami, or high lava flow hazard zone.



KA'Ū DISTRICT GYM & SHELTER

DRAFT ENVIRONMENTAL ASSESSMENT



Prepared for:

County of Hawai'i
Department of Public Works

Prepared by:



February 2012

KA'Ū DISTRICT GYM & SHELTER

DRAFT ENVIRONMENTAL ASSESSMENT

Prepared for:

County of Hawai'i
Department of Public Works

Prepared by:



February 2012

SUMMARY

Project Name:	Ka‘ū District Gym & Shelter
Location:	Pāhala, Ka‘ū, Island and County of Hawai‘i
Judicial District:	Ka‘ū
Tax Map Key (TMK):	(3) 9-6-005:008 (portion)
Land Area:	Approximately 5 acres located at southeastern portion of the school grounds (“Site”)
Proposing Agency:	County of Hawai‘i Department of Public Works
Accepting Authority:	County of Hawai‘i Department of Public Works, as the Mayor’s Designee
Landowner:	State of Hawai‘i
Existing Use:	Open grassed field on the school grounds of Ka‘ū High and Pāhala Elementary
Proposed Action:	The Project consists of using State funds to design and construct a gymnasium that would also be used as an emergency shelter that meets the Enhanced Hurricane Protection Area shelter criteria and vog safe room requirements. There is one existing shelter (which the Project will replace) serving the entire District, and this shelter does not likely meet minimum hurricane shelter criteria. Ka‘ū is the most vulnerable area in the State to vog. Existing vog safe rooms do not provide adequate protection for the population sensitive to vog. The existing gym is old and too small for the wide range of athletic, school assembly, and community needs.
Current Land Use Designations:	<i>State Land Use:</i> Urban <i>County General Plan LUPAG:</i> Medium Density Urban & Low Density Urban <i>County Zoning:</i> RS-15 (Residential) <i>Special Management Area:</i> Not in SMA

**Alternatives
Considered:**

Four alternatives were considered:

- No action: The existing school buildings and gym are deficient in their capacity for athletic and community gathering and do not provide adequate shelter that meets hurricane and vog mitigation standards;
- Renovation or replacement of existing buildings: Although the Site will remain open as a grassed field, a smaller building with less amenities would be provided due to the added demolition/renovation costs and the limited available space;
- Alternative sites: Other open fields on the school grounds would result in a building no larger than the existing gym; a new gym and shelter is already proposed for Ocean View; locating the Project in Naalehu would prevent the high school from fully benefitting from the Project;
- Alternative designs: Lowering the building height would compromise the ceiling height for basketball and volleyball trajectories and the plantation-style roof line.

**Potential Impacts and
Mitigation Measures:**

The Project, as a hurricane and vog shelter, provides a significant beneficial impact for public health and safety. The following potential adverse impacts would be mitigated:

- Potential distraction to night-flying birds from exterior lighting. The design will specify minimal shielded security lighting. All other exterior lighting would be turned on only as needed and designed in accordance with the County's exterior lighting standards.
- Noise impacts to neighbors. Operational policies will require activities to cease no later than 10:00 p.m.
- Lava tubes. Although lava tubes are known to exist in other areas of the school grounds, geotechnical surveys located no significant lava tubes underlying the Site.

The Project will not significantly affect the views of neighboring residents. The plantation-style roofline will complement the architectural style of the surrounding buildings. There are no impacts to endangered species; the Project is not located in a flood, tsunami, or high lava flow hazard zone.

Determination:

Anticipated Finding of No Significant Impact

TABLE OF CONTENTS

	SUMMARY	I
1	INTRODUCTION.....	1
1.1	LANDOWNER.....	1
1.2	PROPOSING AGENCY AND ACCEPTING AUTHORITY	1
1.3	ENVIRONMENTAL CONSULTANT	1
1.4	COMPLIANCE WITH STATE OF HAWAI'I ENVIRONMENTAL LAWS	1
1.5	STUDIES CONTRIBUTING TO THIS EA.....	2
2	PROJECT DESCRIPTION	3
2.1	BACKGROUND INFORMATION	3
2.1.1	Location and Property Description	3
2.1.2	Regional Land Use History.....	3
2.1.3	Existing Land Use Designations.....	8
2.1.4	Surrounding Land Uses	8
2.2	PURPOSE AND NEED.....	8
2.3	KA'Ū DISTRICT GYM AND SHELTER DESCRIPTION	16
2.4	SUSTAINABLE PLANNING AND DESIGN	27
2.5	DESIGN PROCESS.....	27
2.6	PROJECT COST AND SCHEDULE.....	28
3	DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES.....	29
3.1	CLIMATE.....	29
3.2	GEOLOGY AND TOPOGRAPHY	29
3.3	SOILS	32
3.3.1	Natural Resource Conservation Service Soil Survey.....	32
3.3.2	LSB Detailed Land Classification and Agricultural Lands of Importance to the State of Hawai'i	32
3.4	HYDROLOGY	35
3.5	MARINE WATERS	36
3.6	NATURAL HAZARDS.....	36
3.6.1	Flood.....	36
3.6.2	Tsunami	38
3.6.3	Hurricane	38
3.6.4	Volcanic Hazards.....	38
3.6.5	Earthquake	42
3.6.6	Wildfires	44
3.7	BOTANICAL RESOURCES	45
3.8	WILDLIFE RESOURCES.....	45

4	DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES.....	47
4.1	ARCHAEOLOGICAL AND HISTORIC RESOURCES	47
4.2	CULTURAL RESOURCES	49
4.3	ROADWAYS AND TRAFFIC	52
4.3.1	Impact on Surrounding Roads and Access	54
4.3.2	Efficiency and Safety of Proposed Site Plan Circulation.....	55
4.3.3	Adequacy of Proposed Parking.....	55
4.3.4	Impact on Pedestrians and Bicyclists.....	56
4.4	NOISE.....	56
4.5	AIR QUALITY.....	57
4.6	VISUAL RESOURCES.....	58
4.7	INFRASTRUCTURE AND UTILITIES.....	58
4.7.1	Water System.....	63
4.7.2	Wastewater System.....	63
4.7.3	Drainage System.....	64
4.7.4	Solid Waste.....	65
4.7.5	Electrical and Communications System	65
4.8	SOCIO-ECONOMIC CHARACTERISTICS	66
4.8.1	Population.....	66
4.8.2	Economy.....	67
4.8.3	Environmental Justice.....	68
4.9	PUBLIC SERVICES AND FACILITIES	68
4.9.1	Schools.....	68
4.9.2	Police, Fire and Medical.....	69
4.9.3	Recreational Facilities.....	70
5	LAND USE CONFORMANCE.....	71
5.1	STATE OF HAWAI'I.....	71
5.1.1	State Land Use Law, Chapter 205, Hawai'i Revised Statutes	71
5.1.2	Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes	71
5.1.3	Hawai'i State Plan	77
5.2	COUNTY OF HAWAI'I	79
5.2.1	County of Hawai'i General Plan.....	79
5.2.2	County of Hawaii Multi-Hazard Mitigation Plan	81
5.2.3	Ka'ū Community Development Plan.....	81
5.2.4	County of Hawai'i Zoning.....	82
5.2.5	Special Management Area	82
5.3	APPROVALS AND PERMITS.....	82
6	ALTERNATIVES.....	83
6.1	NO ACTION ALTERNATIVE.....	83
6.2	RENOVATION OR REPLACEMENT OF EXISTING BUILDING(S).....	83

6.3	ALTERNATIVE SITES	83
6.4	ALTERNATIVE DESIGNS.....	84
7	FINDINGS AND DETERMINATION	85
7.1	SIGNIFICANCE CRITERIA	85
7.2	ANTICIPATED DETERMINATION	87
8	CONSULTATION	89
8.1	INDIVIDUALS AND ORGANIZATIONS CONSULTED WITH PRIOR TO THE EA PROCESS	89
8.1.1	Pre-Consultation Letters	89
8.1.2	Community Meetings	90
8.1.3	Ka'ū Calendar Newspaper Articles	91
8.2	INDIVIDUALS AND ORGANIZATIONS TO BE CONSULTED DURING THE EA PROCESS.....	91
9	REFERENCES.....	93

LIST OF APPENDICES

- A Pre-Consultation Comments & Responses
- B Engineering Report
- C Cultural Impact Assessment
- D Transportation Impact Analysis Report
- E Community Meetings

LIST OF TABLES

Table 1: Shelter Classification	13
Table 2: Resident Shelter Needs by District	15
Table 3: Design Program	22
Table 4: Water Consumption Standards	63
Table 5: Capacity and Enrollment for Public Schools.....	69
Table 6: Anticipated Approvals and Permits	82

LIST OF FIGURES

Figure 1: Regional Location	4
Figure 2: Tax Map Key.....	5
Figure 3: Site Plan.....	6
Figure 4: Site Photographs.....	7
Figure 5: State Land Use District.....	9
Figure 6: County General Plan LUPAG	10
Figure 7: County of Hawai'i Zoning	11
Figure 8: Surrounding Land Uses	12
Figure 9: Shelters	14
Figure 10: Project Overview	17
Figure 11: Floor Plan	24
Figure 12: Building Elevations	24
Figure 13: Wind Patterns	30
Figure 14: NRCS Soil Survey.....	33
Figure 15: Agricultural Suitability.....	34
Figure 16: Flood Insurance Rate Map	37
Figure 17: Tsunami Evacuation Zone.....	39
Figure 18: Volcanic Hazards	40
Figure 19: Single- and Double-Wall Dwelling Built Prior to 1993.....	43
Figure 20: Views Toward Site	59
Figure 21: Section Elevations of Sightlines.....	61

LIST OF ACRONYMS AND ABBREVIATIONS

ALISH	Agricultural Lands of Importance to the State of Hawai'i
DOE	Department of Education
DOH	Department of Health
DOT	Department of Transportation
DLNR	Department of Land and Natural Resources
DPR	Department of Parks and Recreation
DPW	Department of Public Works
CWRM	Commission on Water Resource Management
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
HAR	Hawai'i Administrative Rules
HHSAA	Hawai'i High School Athletic Association
HRS	Hawai'i Revised Statutes
HVNP	Hawai'i Volcanoes National Park
LSB	Land Study Bureau
NGPC	Notice of General Permit Coverage
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
SMA	Special Management Area
SO ₂	Sulfur Dioxide

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1 INTRODUCTION

This Environmental Assessment (EA) is prepared in accordance with Chapter 343, Hawai'i Revised Statutes (HRS) for the proposed Ka'ū District Gym & Shelter in Pāhala, Ka'ū, Island and County of Hawai'i, State of Hawai'i.

1.1 LANDOWNER

The State of Hawai'i is the landowner. The County of Hawai'i operates and maintains the recreational facilities located on the school grounds under an informal agreement.

An Executive Order is being sought to formally recognize the County as the operation and management authority over the proposed Ka'ū District Gym & Shelter, along with all of the recreational facilities already under County operation and maintenance.

1.2 PROPOSING AGENCY AND ACCEPTING AUTHORITY

The County of Hawai'i Department of Public Works is the proposing agency and the Mayor's designated accepting authority.

Contact: County of Hawai'i Department of Public Works
ATTN:David Yamamoto
Aupuni Center
101 Pauahi Street, Suite 7
Hilo, Hawai'i 96720
Phone: (808) 961-8321
Fax: (808) 961-8630

1.3 ENVIRONMENTAL CONSULTANT

The environmental planning consultant is PBR HAWAII & Associates, Inc.

Contact: Tammy Kapali, Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813
Telephone: (808) 521-5631
Fax: (808) 523-1402

1.4 COMPLIANCE WITH STATE OF HAWAI'I ENVIRONMENTAL LAWS

Preparation of this document is in accordance with the provisions of Chapter 343, HRS (2007) and Title 11, Chapter 200, Hawai'i Administrative Rules (HAR) pertaining to Environmental Impact Statements. Section 343-5, HRS established nine "triggers" that require either an EA or an Environmental Impact Statement (EIS). The use of State or County lands or funds is one of

these “triggers.” Because the County of Hawai‘i Department of Public Works will use State funds to build the new gymnasium at Ka‘ū High and Pāhala Elementary, the preparation of an Environmental Assessment is required.

1.5 STUDIES CONTRIBUTING TO THIS EA

The information contained in this report has been developed from site visits, generally available information regarding the characteristics of the site and surrounding areas, and technical studies. Technical studies are provided as appendices to this EA. These studies include:

- Engineering Report
- Cultural Impact Assessment
- Transportation Impact Analysis Report

2 PROJECT DESCRIPTION

2.1 BACKGROUND INFORMATION

2.1.1 Location and Property Description

The Ka‘ū District Gym & Shelter (“Project”) is proposed to be located at Ka‘ū High and Pāhala Elementary School in the town of Pāhala, ahupua‘a of Pā‘au‘au-1, District of Ka‘ū, Island and County of Hawai‘i (Figure 1). Pāhala is centrally located within the District of Ka‘ū between Nā‘ālehu and Volcano.

Ka‘ū High and Pāhala Elementary School, including the playfields, is identified as TMKs (3) 9-6-005: parcel 008 (26.926 acres) and parcel 039 (6.009 acres). However, the Project is an approximately 5-acre portion of parcel 008 (“the Site”) as shown on Figure 2.

The Project will be located in the southeastern portion of the school grounds on an open field near the existing tennis courts (Figure 3 and Figure 4). The existing entrance driveway and parking is to the north as well as the weight room; buildings D (existing gym) and C (cafeteria) are to the west; tennis and basketball courts are to the east; and residential homes to the south. There is a grade difference between the Site and the residences to the south (Figure 4b).

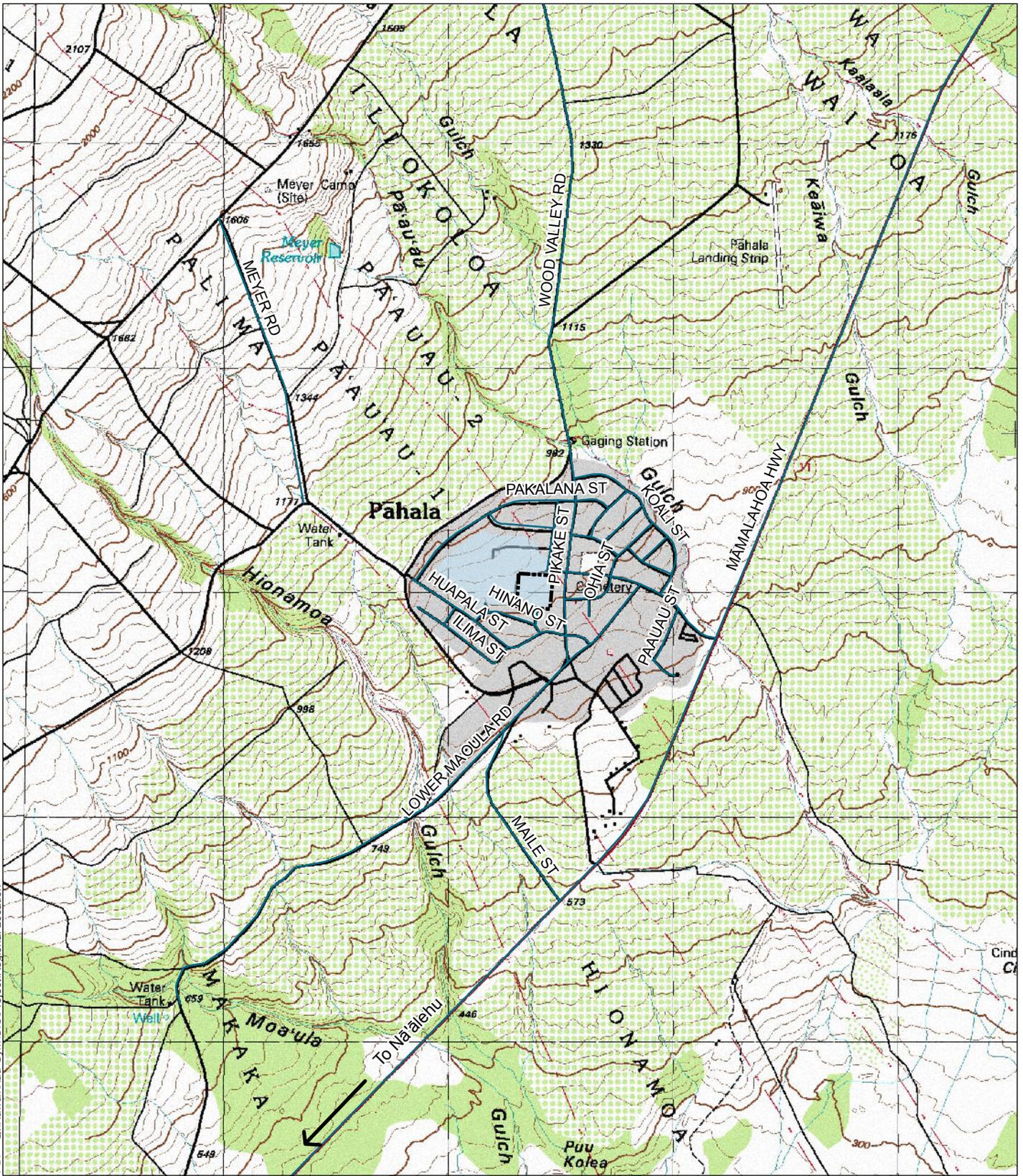
Primary vehicle access to the Site is from Kamani Street, approximately a half-mile north of the Kamani Street/Māmalahoa Highway intersection. A pedestrian access way is provided at the Hala Street terminus via a stairway (Figure 4c).

The Site is entirely grassed and has been used for overflow grass parking when school or community functions occur at the school (Figure 4a).

The school grounds are owned by the State DOE. The County Department of Parks and Recreation (DPR) operates several existing recreational facilities at the school which are shared between the school and the community: tennis and basketball courts, football/soccer field, softball fields, swimming pool, and related parking lots. The new Ka‘ū District Gym & Shelter would be added to this list of facilities operated by the County.

2.1.2 Regional Land Use History

In the late 1800’s, four sugar mills were built in Ka‘ū—Nā‘ālehu, Hīlea, Honu‘apo, and Pāhala—along with Honu‘apo Wharf and a railway between Punalu‘u and Pāhala. Pāhala was one of the largest sugar plantations in the State along with being the most remote. In 1881, Pāhala high and elementary school (now known as Ka‘ū High and Pāhala Elementary School) was established due to the opening of Ka‘ū Sugar Company, which employed a high number of immigrants who wanted their children to get a high school education. The sugar-era in Pāhala thrived for nearly a century when it ended in 1996 with the last harvest of Ka‘ū Sugar Company.



DATE: 2/7/2012

LEGEND

-  Site
-  School Grounds

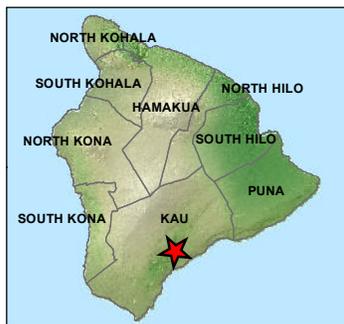


FIGURE 1:
Regional Location

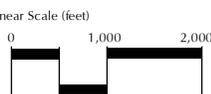
KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works Island of Hawaii

North



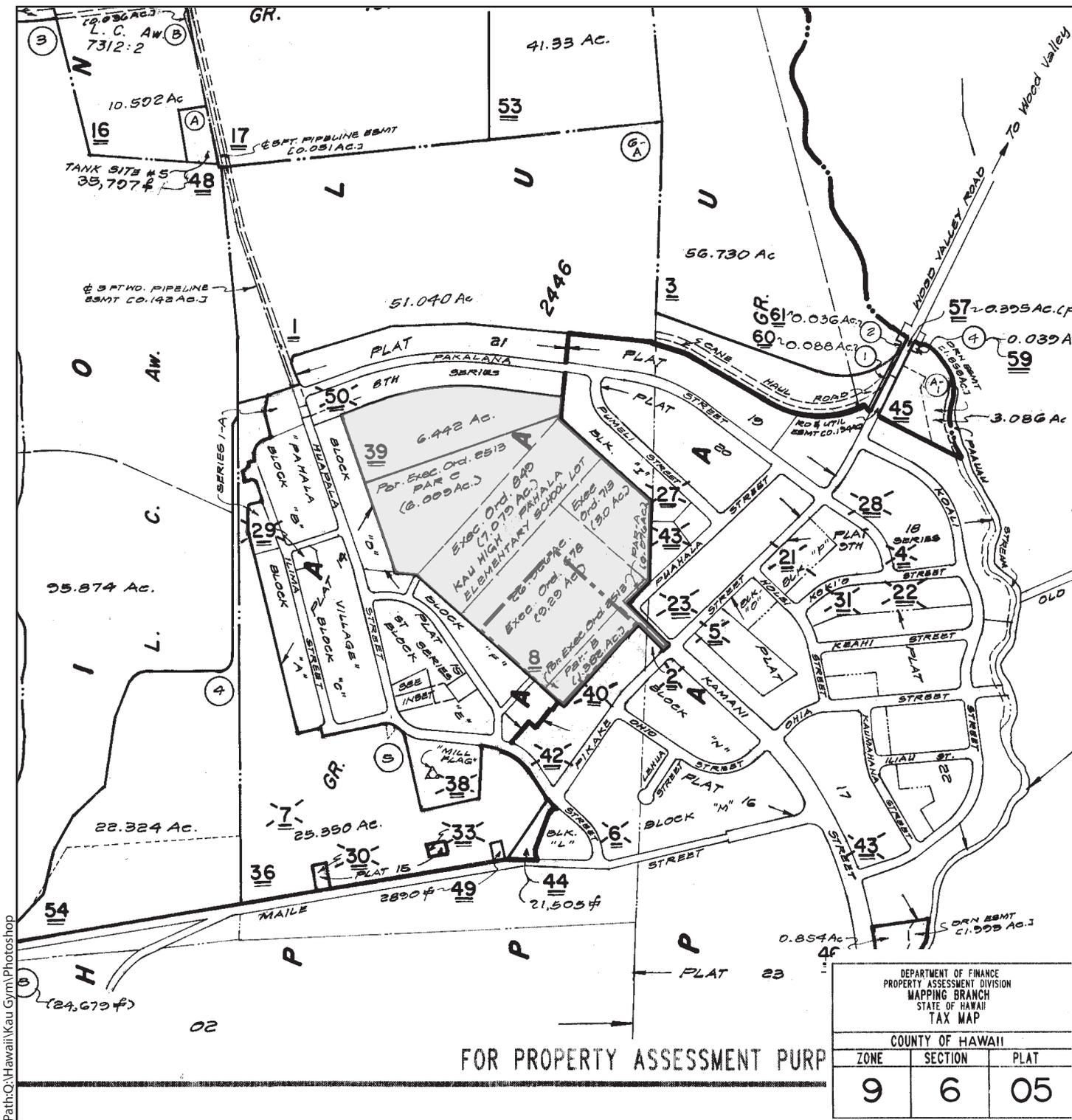
Linear Scale (feet)





Source: USGS 2011; Hawaii County TMK 2011

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.



Path:Q:\Hawaii\Kau Gym\Photoshop

LEGEND

-  Site
-  School Grounds

FIGURE 2:

Tax Map Key

KA'Ū DISTRICT GYM & SHELTER

County of Hawai'i Department of Public Works Island of Hawai'i



NOT TO SCALE



Source: County of Hawaii, Department of Planning

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



LEGEND

- Site
- School Ground Features**
- County
- DOE

FIGURE 3:
Site Plan

KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works Island of Hawaii

North

Linear Scale (feet)

PBR HAWAII & ASSOCIATES, INC.

Source: State GIS, County of Hawaii, Mitsunaga and Associates, Inc.

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.



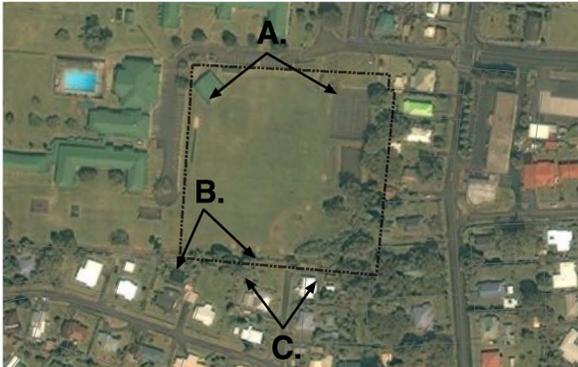
A. Panoramic view of the Site from the school entrance driveway.



B. Note rooftops of residences indicating grade difference.



C. Pedestrian access to Hala Street; note number of steps that indicate a grade difference of at least 10'.



Source: PBR Hawaii

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

FIGURE 4:

Site Photographs

KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works

Island of Hawaii



2.1.3 Existing Land Use Designations

Current land use designations for the Site are:

- State Land Use: Urban (Figure 5)
- County General Plan LUPAG: Medium Density Urban & Low Density Urban (Figure 6)
- County of Hawai'i Zoning: RS-15 (Residential) (Figure 7)
- Special Management Area: Not in SMA

2.1.4 Surrounding Land Uses

Single-family residences are located on all sides adjacent to the school (see Figure 8). A neighborhood commercial center (e.g., superette, post office, bank) is located to the east of the Site at the intersection of Kamani and Pikake Streets. Public facilities located within Pāhala town include: Pāhala Public Library, Pāhala Park and Community Center, Pāhala Fire Station, Ka'ū Hospital, Pāhala Senior Housing and Senior Center.

2.2 PURPOSE AND NEED

The Ka'ū District Gym & Shelter will: 1) provide improved and more diverse athletic and recreational opportunities to a larger residential community in Ka'ū for school and community use; 2) provide a more adequate and larger meeting and gathering place for the school and community; 3) provide an adequate shelter to ensure residents are protected during the event of a natural disaster; and 4) provide a congregate shelter to aid in the post-disaster recovery process. The purpose for the Project is described in further detail below.

Athletic Events

The Project will provide space for regulation Hawaii High School Athletic Association (HHSAA) basketball and HHSAA volleyball courts. There will also be one court that will meet college NCAA standards, opening that opportunity for exhibition games or training. The existing gym that was built in the 1930's has one basketball court that is too small to host the number of students and community members who want to participate in indoor sports simultaneously. The new facility will allow for wrestling and martial arts where there is currently no dedicated space for such activities.

School and Community Assemblies

The limited capacity of the existing gym often results in packed conditions for school or community events. Nearby recreational facilities in Pāhala are limited to Pāhala Community Center and Pāhala Park. The new gym will provide needed capacity to address existing and future demand for large gatherings.



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LEGEND

-  Site
- State Land Use Districts**
-  A- Agriculture
-  C- Conservation
-  U- Urban

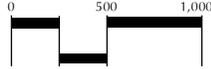
FIGURE 5:
State Land Use Districts
KA'Ū DISTRICT GYM & SHELTER

County of Hawai'i Department of Public Works Island of Hawai'i

North

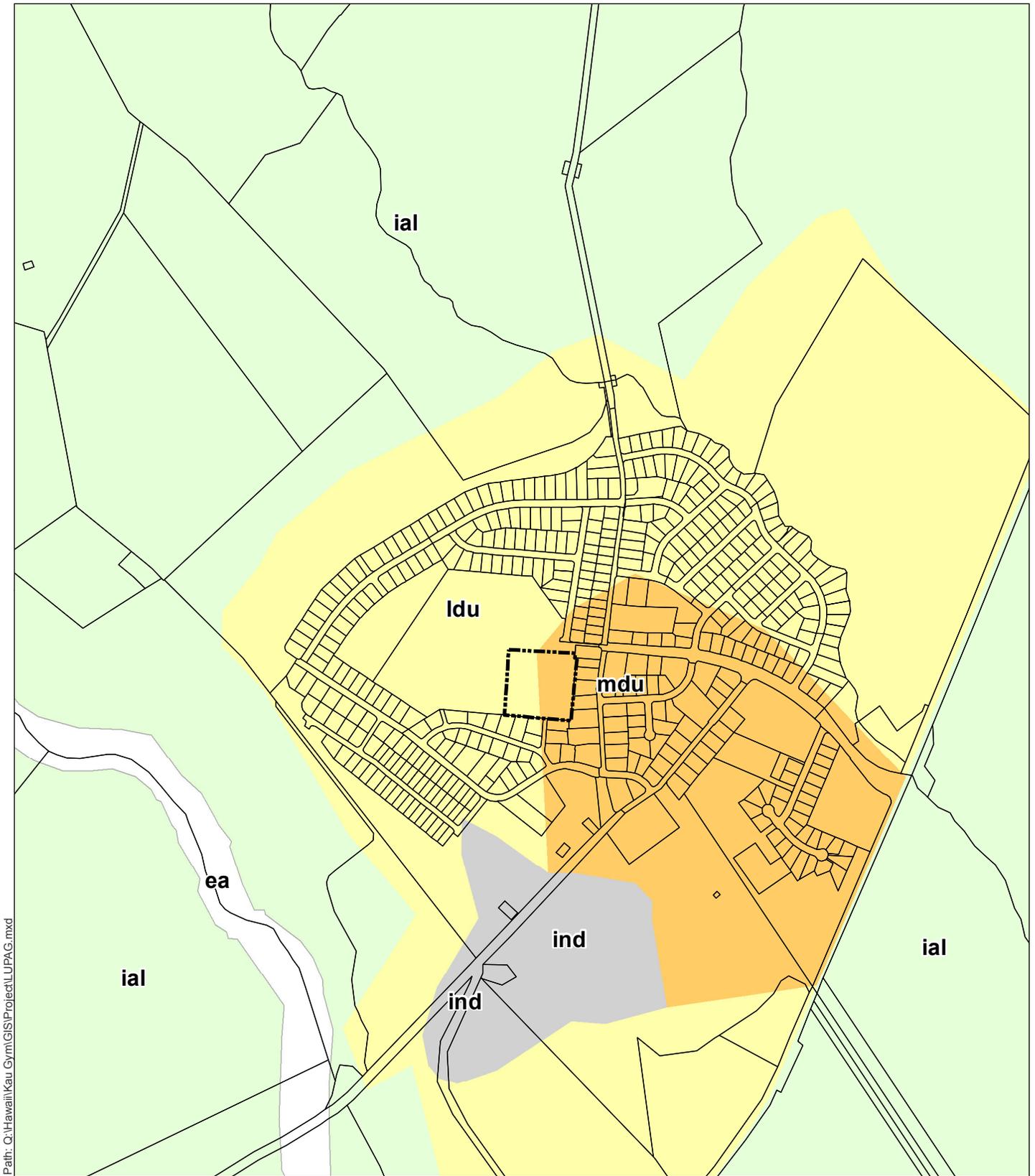


Linear Scale (feet)





Source: State Land Use Commission, (State GIS 2010)
 Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.



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LEGEND



Site LUPAG

- Extensive Agriculture
- Important Ag. Lands
- Industrial
- Low Density Urban
- Medium Density Urban

FIGURE 6:
General Plan LUPAG

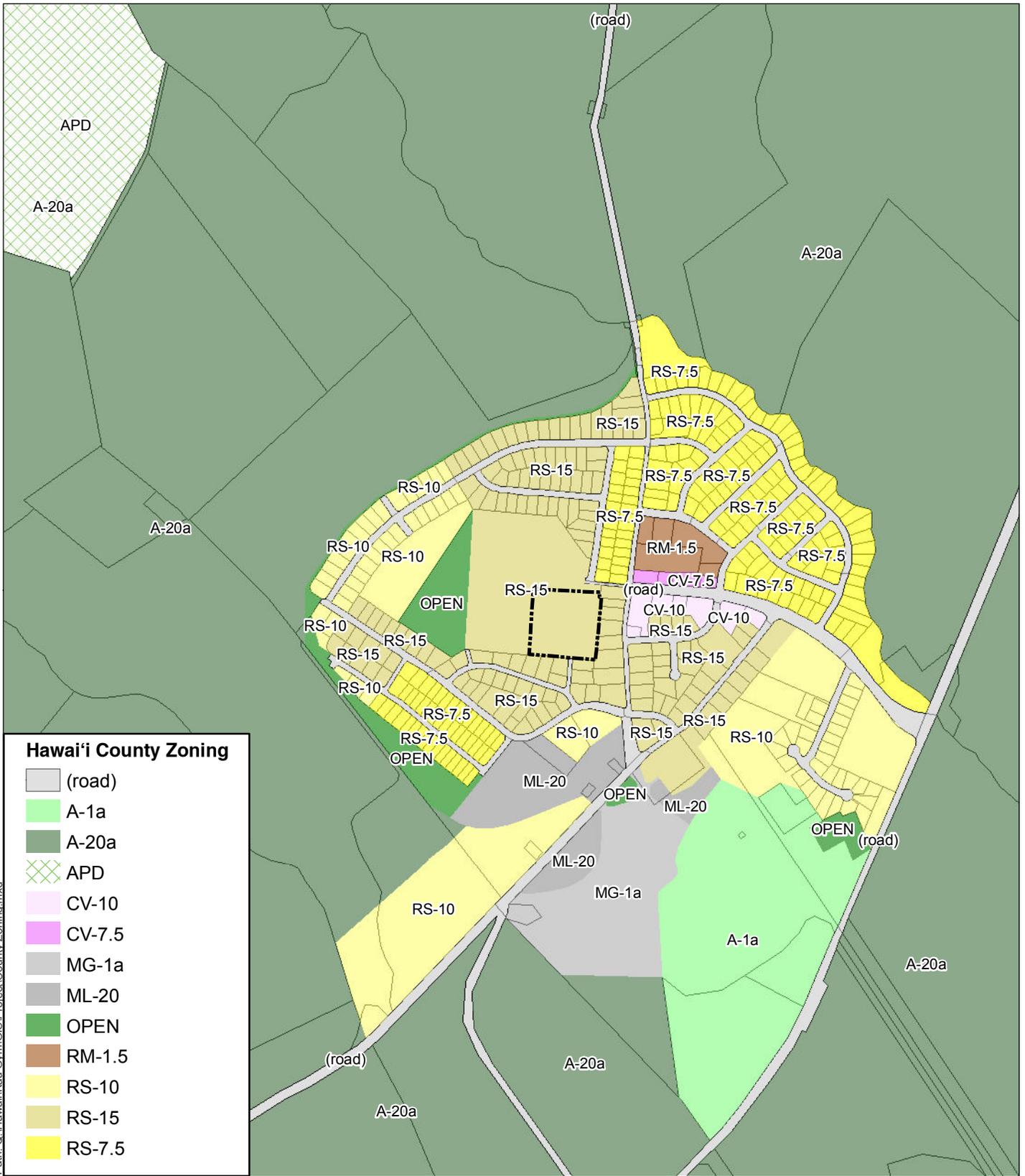
KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works Island of Hawaii

North

Linear Scale (feet)

Source: USGS 2011; Hawaii County TMK 2011, General Plan 2005
 Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.



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Hawai'i County Zoning

- (road)
- A-1a
- A-20a
- APD
- CV-10
- CV-7.5
- MG-1a
- ML-20
- OPEN
- RM-1.5
- RS-10
- RS-15
- RS-7.5

DATE: 2/8/2012

LEGEND



Site

FIGURE 7:

**County of Hawai'i Zoning
KA'Ū DISTRICT GYM & SHELTER**

County of Hawai'i Department of Public Works Island of Hawai'i

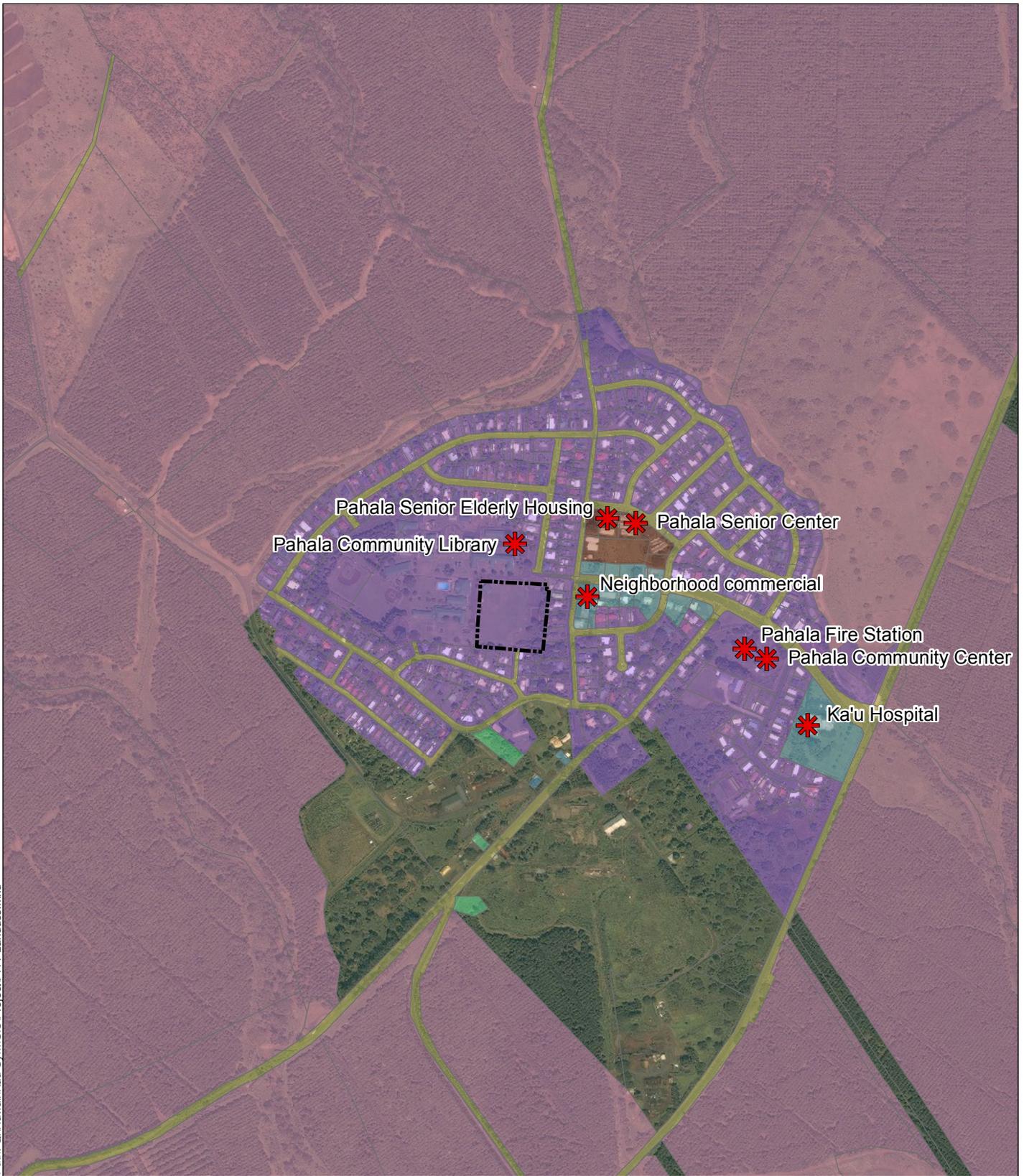
North

Linear Scale (feet)

Source: USGS 2011; County of Hawai'i Planning Department 2010

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

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LEGEND

Site

Community and Commercial Facilities

Surrounding Land Uses

Roads

Residential

Apartment

Commercial

Industrial

Agricultural and Rural

FIGURE 8:

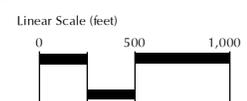
DATE: 2/8/2012

Surrounding Land Uses

KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works

Island of Hawaii



Source: State GIS, Hawaii County Real Property Tax (2011)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

Emergency and Congregate Shelter

The only emergency shelter for the entire Ka‘ū District is the Ka‘ū High and Pāhala Elementary school, designated as a special needs and pet-friendly shelter (see Figure 9) (Martin & Chock, Inc., 2010). The Ka‘ū High and Pāhala Elementary school buildings have not yet been evaluated in reference to the hurricane shelter criteria. There are four levels of hurricane shelters as shown in Table 1 below.

Table 1: Shelter Classification

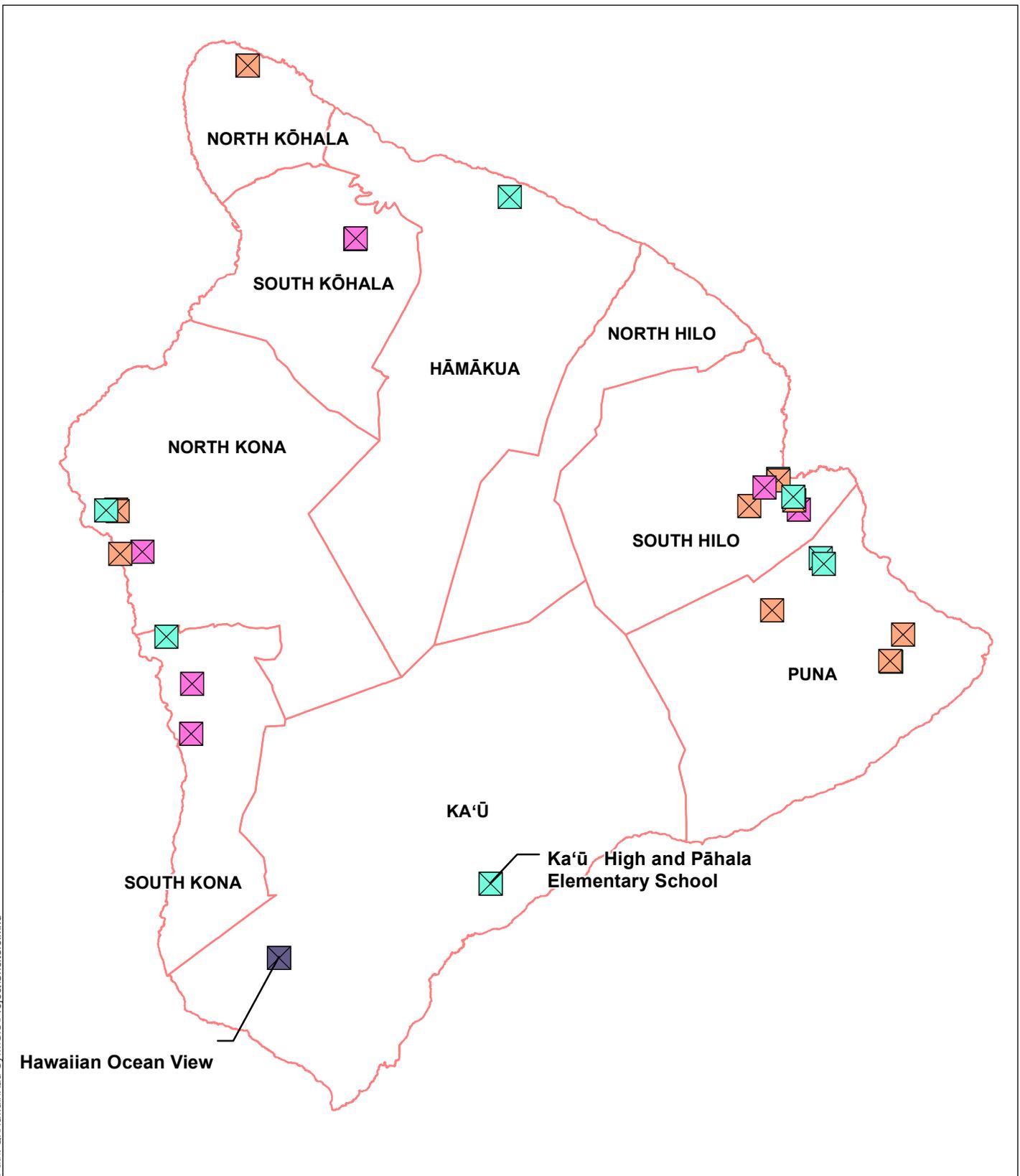
Shelter Classification	Expected Performance Objective	Hurricane Category
Type B Hurricane Shelter	Life Safety, with significant structural and nonstructural damage permitted	Category 1 Hurricane (structural capacity for 108 mph peak gust)
Type A Hurricane Shelter	Life Safety, with significant non-structural damage and low to moderate structural damage permitted	Category 2 Hurricane (structural capacity for 130 mph peak gust)
Enhanced Hurricane Protection Area	Operational during and after a 500 to 1,000-year event	Category 3 Hurricane (structural capacity for 155 mph peak gust)
Essential Facility for Continuity of Operations	Near-Absolute Protection and Continuity of Operations during and after a hurricane of maximum considered intensity	Category 4 Hurricane (structural capacity for 190 mph peak gust)

Source: (Hurricane Shelter Criteria Committee, 2005)

Only four shelters on Hawai‘i Island have been evaluated (Holualoa Elementary, Waikoloa Elementary Building D, Waikoloa Elementary Building E, and Konawaena Elementary), and those shelters have met the Type B criteria at best. Since the Ka‘ū High and Pāhala Elementary school buildings are much older than those four shelters, it is highly unlikely that the Ka‘ū High and Pāhala Elementary school’s wooden buildings would meet the Type B criteria, leaving the entire Ka‘ū District without a shelter that meets the minimum shelter criteria.

The Project’s proposed shelter capacity of 1,500 persons meets the needs of the Ka‘ū District. The State of Hawai‘i’s sheltering plan developed by State Civil Defense utilized behavioral analyses studies to determine the amount of shelter space government must be capable of providing for evacuees in public facilities (see Table 2). The needs shown in the table were based on the 2000 Census population and the sheltering plan’s finding that 90% of residents would likely leave their home, and of those, 35% would go to a public shelter, resulting in needed shelter capacity based on roughly one-third of the residential population.

Path: Q:\Hawaii\Kau_Gym\GIS\Project\Shelters.mxd



LEGEND

ShelterTypes

-  General Shelter
-  Special Needs Shelter
-  Special Needs and Pet Friendly Shelter
-  Proposed Shelter

FIGURE 9:

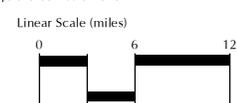
DATE: 2/8/2012

Emergency Shelter Inventory

KA'Ū DISTRICT GYM & SHELTER

County of Hawai'i Department of Public Works

Island of Hawai'i



Source: State GIS- Pacific Disaster Center (2005)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

Table 2: Resident Shelter Needs by District

District	Population (2000 Census)	Needs	Shelter Space	Difference
North Kōhala	6,038	1,902	1,590	-312
South Kōhala	13,131	4,136	2,920	-1,216
North Kona	28,543	8,991	5,275	-3,716
South Kona	8,589	2,706	2,225	-481
Ka‘ū	5,827	1,836	1,175	-661
Puna	31,335	9,871	8,435	-1,436
South Hilo	47,386	13,100	14,927	-1,827
North Hilo	1,720	640	542	98
Hāmākua	6,108	2,375	1,924	451

Source: (Martin & Chock, Inc., 2010)

According to the 2010 Census, the population of Ka‘ū grew by approximately 3,000 people from 5,827 people in 2000 to 8,451 people in 2010. The County plans to build a gym and shelter in Hawaiian Ocean View, where 53 percent of the district population resides. This Hawaiian Ocean View facility would supplement the Project’s shelter capacity to accommodate the existing and future district needs. Based on the 2010 Census population, Ka‘ū’s shelter capacity needs is approximately 2,700 persons. Until the Ocean View facility is built, the District shelter needs would be deficient even with the Project. Once the Ocean View facility is built and able to accommodate at least 50 percent of the resident population, the Project would be adequate for the remaining 50 percent.

Vog Shelter

The Ka‘ū District faces significant risk from volcanic emissions (vog) due to its proximity to Mauna Loa and Kīlauea Volcanoes which are actively erupting. Kilauea Volcano is recognized as the largest point source of sulfur dioxide (SO₂) gas in the United States. The mixture of sulfurous gases and particles appears visible as fog called vog. Prevailing trade winds carry the vog from the eruption vents southward through Ka‘ū District and onward along the Kona Coast exposing communities and the ecosystem along its path. Exposed Ka‘ū residents have significantly elevated odds for self-reported daily cough, phlegm, rhinorrhea, sore/dry throat, sinus congestion, wheezing, eye irritation, and acute bronchitis, as well significantly elevated odds for chronic bronchitis, higher systolic blood pressure, faster pulse. Of particular concern is the substantially elevated relative risk for children under 14 years old who have heightened vulnerability compared with adults due to higher ventilation rates, increased mouth breathing (which results in diminished nasal filtering of intake air), enhanced physical activity, larger lung surface area per unit of body weight, and ongoing development of respiratory organs (Longo et al, 2010).

The flux of air pollution penetrating inside a building is significantly less for rooms or buildings with cement block construction that uses air-conditioning (Longo et al, 2010). The Project will include a multi-purpose room with a specially designed air conditioning and filtration system to serve as a vog shelter¹ when emissions from Kīlauea volcano reach high levels. The vog shelter is intended for the most vulnerable persons sensitive to vog that include: asthmatic persons, respiratory and cardiac compromised individuals (including smokers), children and adolescents, and healthy but sulfur dioxide (SO₂)-sensitive individuals (Longo et al, 2010). For sensitive hospital patients and those requiring medical treatment or monitoring, the Ka‘ū Hospital is currently being upgraded for vog control. Additionally, the high school band room and the Pāhala community library are air-conditioned, cement block construction buildings that may not provide as effective vog protection as the Project, but have shown to have indoor SO₂ penetration of less than 10% (Longo et al, 2010).

2.3 KA‘Ū DISTRICT GYM AND SHELTER DESCRIPTION

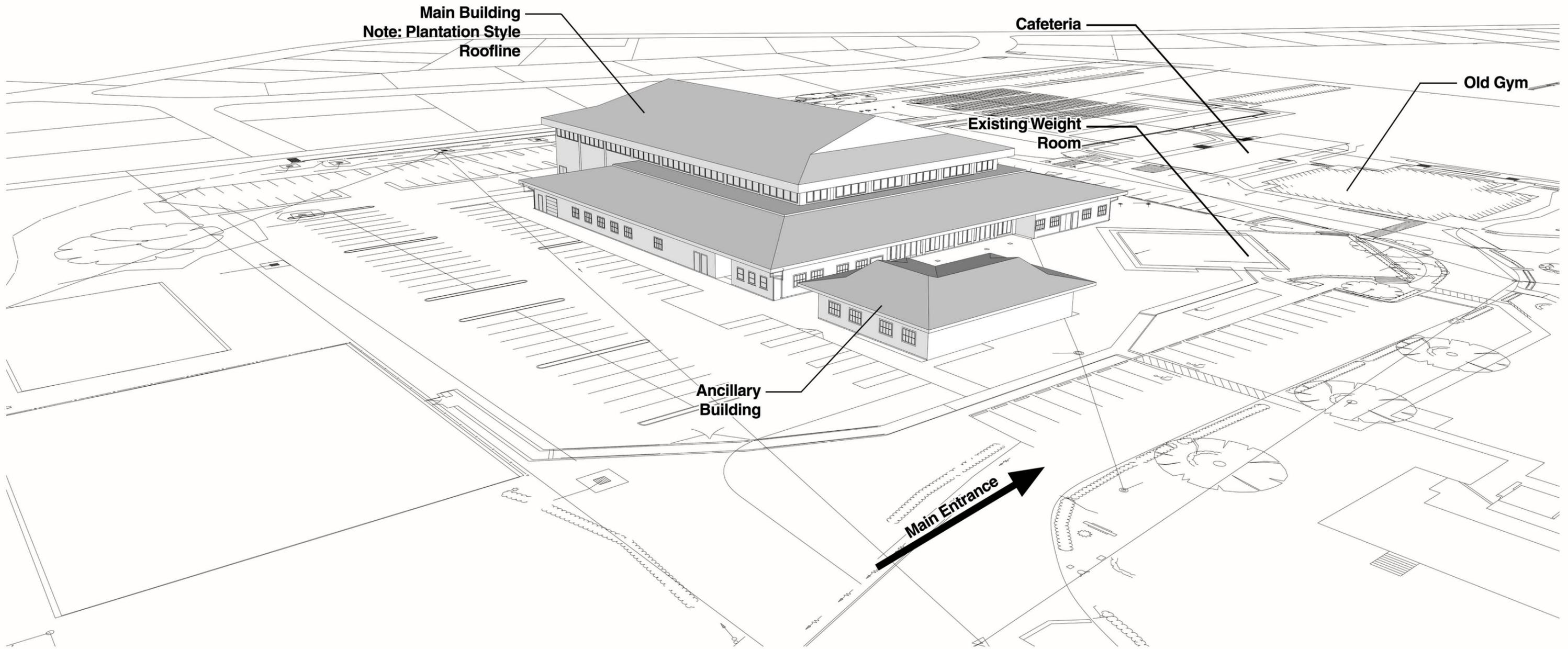
The Ka‘ū District Gym & Shelter consists of a main building connected to an ancillary building by an exterior courtyard, and parking (paved and grassed overflow) (see Figure 10). The parking is designed to accommodate shared needs of the school and community use. During school hours and after school (e.g., until 3:00pm), the facility will be reserved for the school. After school and weekends, the facility will be open for community use and DPR programs. The community has access to the Pāhala Community Center and the Pāhala Senior Center for activities during the school hours.

The Project’s primary functional areas include the main gym floor, a recreation room (e.g., pool and ping pong tables), and a multi-purpose room (see Table 3 and Figure 11).

All of the new facilities will be constructed on the grass field between the existing tennis courts/basketball court and Classroom buildings B, C, and D. A new parking lot will be constructed along the east and south sides of the gymnasium complex and include a total of 159 spaces. Some of these spaces may not be constructed with hardscape and may be provided in grass areas.

Access to the new site will be provided by a new driveway located immediately west of the tennis courts and opposite the on-site roadway serving the northern part of the school campus. The new parking area will be completely separate from the existing school campus parking area.

¹ At the present stage of design, it has not been definitively decided whether to vog-mitigate the multi-purpose room, recreation room, or both. The recreation room, which is part of the main building, would have a specially designed ventilation system. The multi-purpose room, located in the separate ancillary building, would have air conditioning and a ventilation system.



Main Building
Note: Plantation Style
Roofline

Cafeteria

Old Gym

**Existing Weight
Room**

**Ancillary
Building**

Main Entrance

FIGURE 10 A:
Project Overview

**KA'Ū DISTRICT GYM &
SHELTER**

County of Hawai'i Department of Public Works

Island of Hawai'i



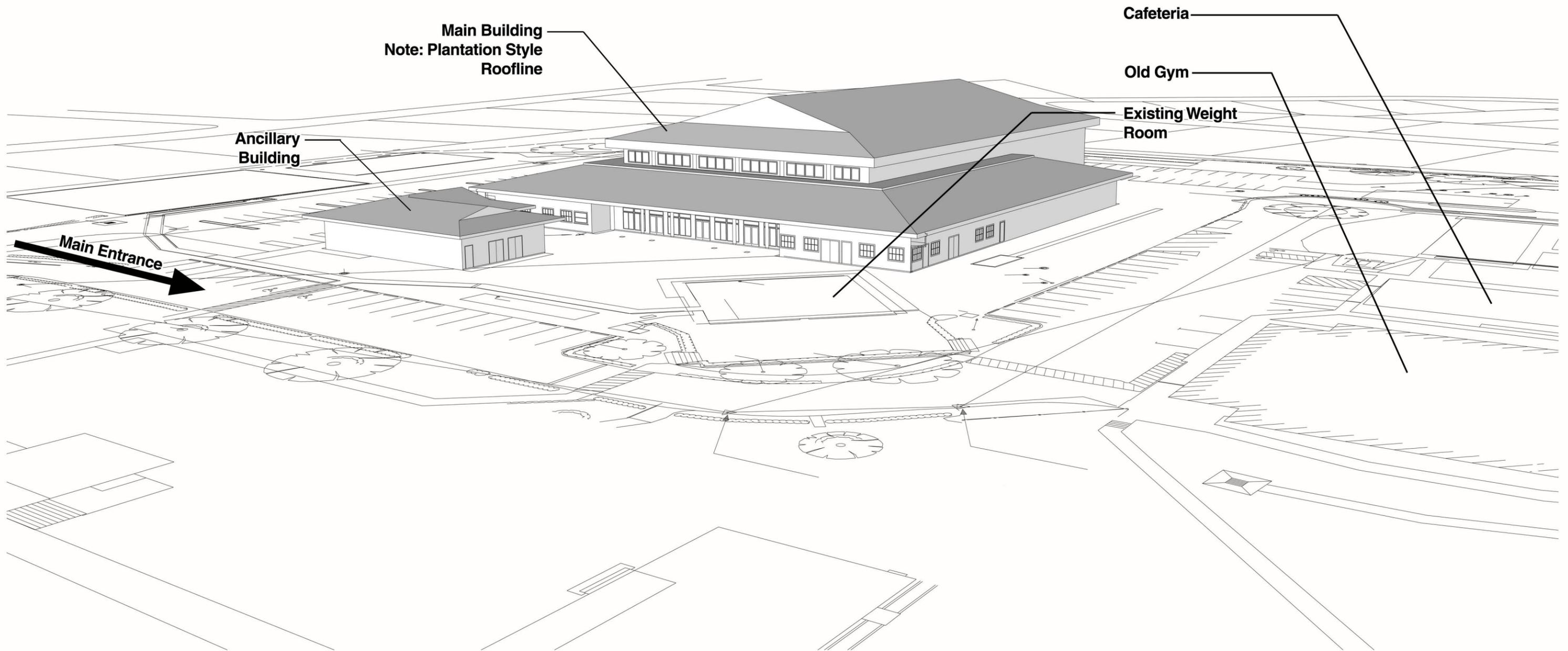


FIGURE 10 B:

Project Overview

KA'Ū DISTRICT GYM & SHELTER

County of Hawai'i Department of Public Works

Island of Hawai'i



Gym

The main gym floor will have space for one regulation NCAA basketball court (94' by 50'), volleyball courts with a minimum 10-foot unobstructed safety all around, and three HHSAA basketball cross-courts (84' by 50') and overlapping HHSAA volleyball cross-courts. The retractable bleachers have a maximum capacity of 1,030 persons, more than adequate to accommodate the entire school enrollment of 590 students for assemblies, and can be retracted fully or partially depending on full-court or cross-court configurations. A portable stage would be setup for performances and other events (e.g., graduation) with a removable floor covering to protect the hardwood gym floor.

Shelter

The main and ancillary buildings will be designed to meet State Civil Defense shelter criteria established pursuant to the Disaster Emergency Preparedness Act of 2005 (Act 5, Special Session 2005) (the "Act"). There are four levels of hurricane shelters as shown in Table 1. The Act requires new shelters to be designed to withstand a 500-year hurricane event, which corresponds to a low Category 3 hurricane, thereby establishing the Enhanced Hurricane Protection Area as the required shelter classification for the Project.

At the standard of 15 square feet of space per person during an emergency event (Hurricane Shelter Criteria Committee, 2005), the main gym floor (with bleachers retracted) and Recreation Room have a capacity of 1,500 persons. After the event, if the shelter needs to serve as temporary housing (called a congregate shelter), the standard space per person to setup cots is 40 square feet, resulting in a capacity as a congregate shelter of 560 persons.

At 15 square feet per person, the Multi-Purpose Room will have a capacity of 120 persons. Due to the exceptionally high cost to air-condition the entire Project, the cost-effective solution is to isolate the vog control measures to the Multi-Purpose Room, which is in a smaller separate building.

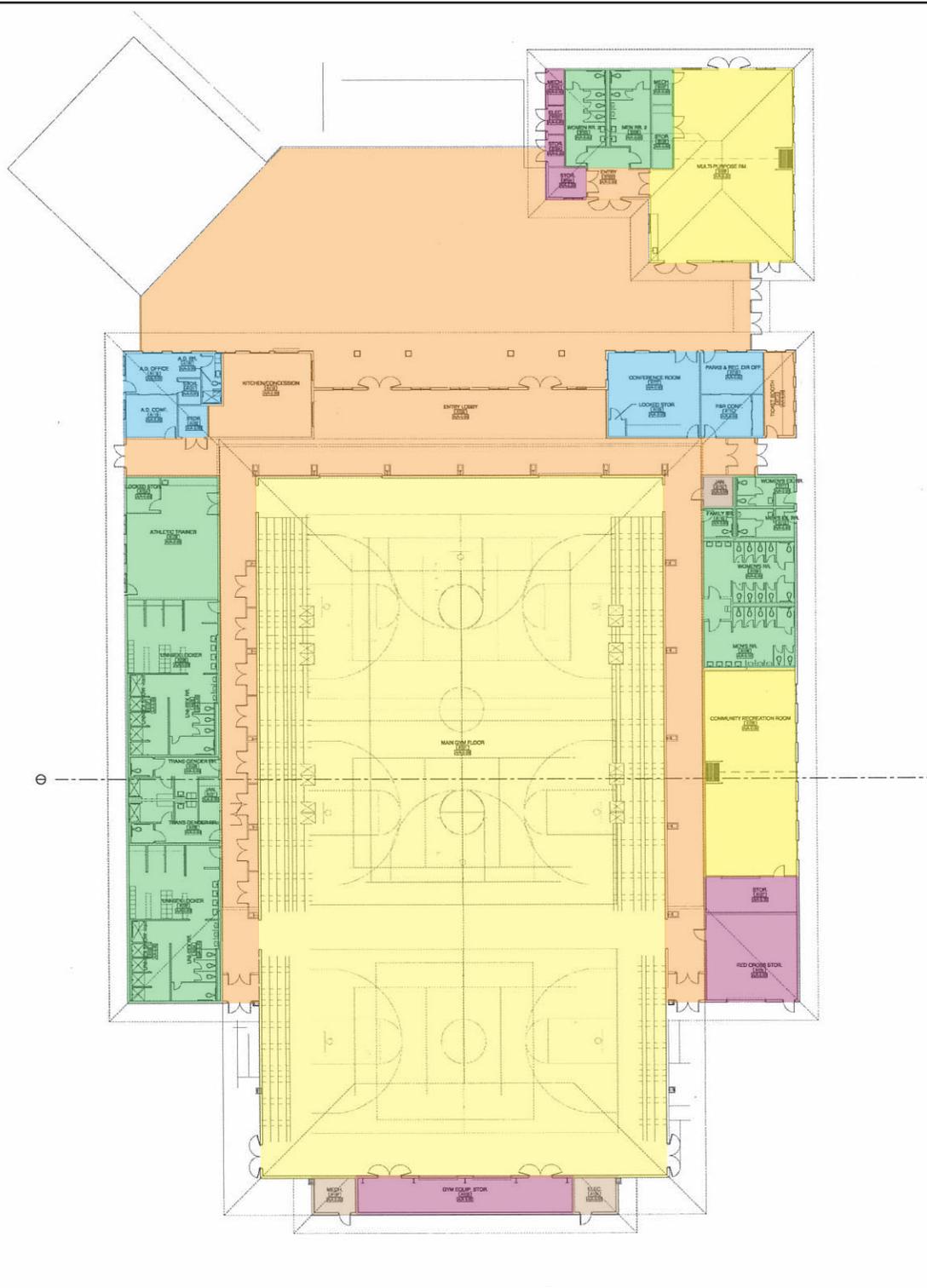
To complement the plantation architecture of the existing buildings and Pāhala town, and yet meet hurricane shelter criteria, the project cannot be made of wood but will have a plantation-style roofline. The indoor ceiling height needs to be high enough so that basketball shots or volleyball volleys do not hit the ceiling, resulting in a building height of approximately 48 feet (see Figure 12).

The existing gym, constructed in the 1930s, will be preserved and used primarily by the school for physical education and athletic practices.

Table 3: Design Program

Function	Area (SF)	Description	Shared Use
Recreation Areas			
Gym Main Floor	21,370	Primary athletic courts with spectator seating to double as assembly/display area for school functions and community purposes; emergency and congregate shelter space	DPR DOE Civil Defense
Recreation Room	1,200	Indoor recreational amenities such as pool/billiards, foosball, bumper pool, table tennis, etc.	DPR DOE
Multi-Purpose Room	2,000	Multi-function space providing home for DPR's recreational programs and Physical Education support classrooms for DOE; vog safe room	DPR DOE Civil Defense
Locker Rooms and Restrooms			
Interior Public Restrooms	1,200	Public restroom accommodations to support Main Floor activities and shelter occupants	DPR DOE Civil Defense
Exterior Public Restroom	400	Public restroom accommodations to support use of ancillary facility spaces and alleviate load on interior restrooms	DPR
Locker/Shower Rooms	1,000	Two similar spaces to separately but simultaneously serve the dressing, showering and restroom needs of the home and visiting teams (unisex approach)	DPR DOE
Athletic Training Room	1,000	Space dedicated for DOE use to support its athletics programs, including those that utilize the gym	DOE

Miscellaneous Areas			
Lobby/Gallery	2,000	Transitional space from exterior of facility into Main Floor area; serves as temporary holding area for consumption of concession items and provides interior access to concession and restrooms	DPR DOE
Exterior Lobby/Courtyard	TBD	Secure exterior space for patrons to lounge during intermission times of paid events after entering the gates	DPR DOE
Concession & Kitchen	650	Designed to meet commercial kitchen requirements of DOH; all kitchen equipment, sinks, controls, countertops, and shelving shall be of food-grade (as applies) stainless steel, fully welded construction; backup congregate shelter kitchen if cafeteria is damaged	DPR DOE Civil Defense
Ticket Booth	212	Space to sell tickets for events	DPR DOE
Office and Meeting Areas			
Athletic Director Office	300	Office for DOE's Athletic Director to include dedicated restroom and shower as well as storage	DOE
Recreation Director's Office	400	Office for DPR's Recreation Director who will manage facility's use; includes dedicated, secure storage space	DPR
Conference/Meeting Room	300	Private meeting space for up to 12 persons to be shared by DPR and DOE	DPR DOE
Radio/Shelter Operations Room	-	Space convertible for HAM Radio communication operations	Civil Defense
Dedicated Storage			
DOE Storage	400	DOE dedicated storage space	DOE
DPR Storage	750	DPR dedicated storage space	DPR
Red Cross Storage	600	American Red Cross dedicated shelter storage space	Red Cross
Support Spaces			
Custodial Room	-	-	DPR
Electrical Room	-	-	DPR
Mechanical Room	-	-	DPR



LEGEND

- Recreation Areas
- Locker Rooms and Restrooms
- Miscellaneous Public Areas
- Office and Meeting Areas
- Dedicated Storage
- Support Spaces

FIGURE 11:

Floor Plan

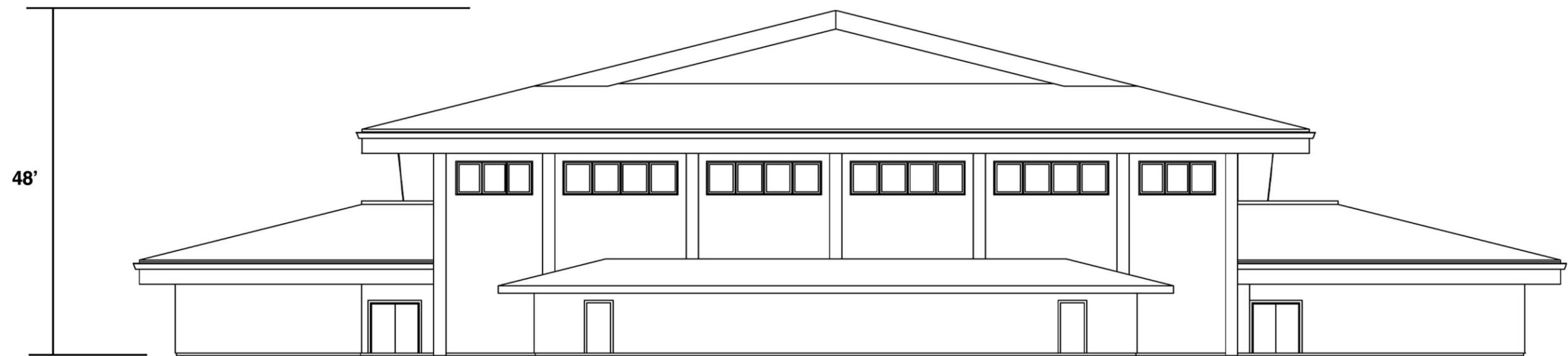
KA'Ū DISTRICT GYM & SHELTER

County of Hawai'i Department of Public Works

Island of Hawai'i



FRONT ELEVATION



REAR ELEVATION

FIGURE 12:
Front and Rear Elevations
KA'Ū DISTRICT GYM &
SHELTER

County of Hawai'i Department of Public Works

Island of Hawai'i



2.4 SUSTAINABLE PLANNING AND DESIGN

The County and Project architect will strive to meet the equivalent Leadership in Energy and Environmental Design (LEED) Silver Certification for this Project. The LEED Green Building Rating System is a nationally accepted benchmark for the design, construction, and operation of sustainable buildings. The LEED Green Building Rating System encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

LEED for New Construction addresses design and construction activities for both new buildings and major renovations of existing buildings. The intent is to promote healthful, durable, affordable, and environmentally sound practices in building and design and construction.

As part of incorporating LEED concepts, with the goal of achieving an equivalent to LEED Silver Certification, a broad range of measures will be considered from the various LEED strategies available, a few of which may include:

- Create and implement an erosion and sedimentation control plan for all construction activities associated with the project.
- Minimize parking lot size. Consider sharing parking facilities with adjacent buildings and grass parking.
- Divert demolition and new construction waste by 50% that would normally go to landfill.
- Use materials that are re-used, rapidly renewable, of recycled content, and of certified manufacturers.
- Reduce the heat island effect of roof and non-roof components by selecting reflective or low-heat gain materials.
- Reduce light pollution by providing shields and reflectors on exterior light fixtures.
- Utilize native and/or water efficient landscaping
- Optimize energy performance through design of AC and lighting systems.
- Improving indoor environmental quality by providing a construction management plan, specifying low emitting materials, providing daylight for 75% of spaces and views of 90% of spaces.

2.5 DESIGN PROCESS

The selected architect and engineering firm for the Project is Mitsunaga & Associates, who designed similar buildings on O'ahu such as the Mānoa Field House and Maryknoll gym. The architect and County have held several meetings with key stakeholders including the school principal and staff, State DOE facility planners, County DPR, coaches, Civil Defense, Red Cross, and the community.

General community input to date has been solicited as follows:

- The County held a public meeting on November 15, 2011 at the Ka'ū High and Pāhala Elementary School cafeteria. The County discussed the Project objectives, alternative sites, and Project timetable, then opened for comments and concerns;
- The County invited written, email, and telephone comments until early December, and received a few comments;
- The County and architect held a two-day charrette opened to the public on December 19 and 20 at the cafeteria. The outcome of the two days included more specific space requirements and alternative floor plans; and
- Pre-consultation letters for this EA were mailed to households residing within 500 feet of the Site to notify them of the Project and invite any comments to be addressed in the Draft EA. Comment and response letters are reproduced in Appendix A.

2.6 PROJECT COST AND SCHEDULE

The County expects to commence construction in Summer 2012. The project is estimated to be completed by 2014. The total anticipated cost for the design and construction will be \$16.9 million funded from the State capital improvement projects budget.

3 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes existing conditions of the natural environment, Project's potential impacts and mitigation measures to minimize impacts.

3.1 CLIMATE

Hawai'i Island's geological features heavily influence its climate. Mauna Loa (13,340 foot summit elevation) and Mauna Kea (13,796 foot summit elevation) dominate ground-based atmospheric influences and affect trade winds. Winds average approximately 7 miles per hour and blow predominantly from a northeasterly direction (NOAA, 2012). (Figure 13)

Regional temperatures are generally cool due to the approximately 900-foot elevation of Pāhala with average annual temperatures ranging from 65-75 degrees Fahrenheit (County of Hawai'i Data Book, 2008). Humidity ranges throughout the year between 68 percent in the morning to 80 percent in the afternoon (NOAA, 2003).

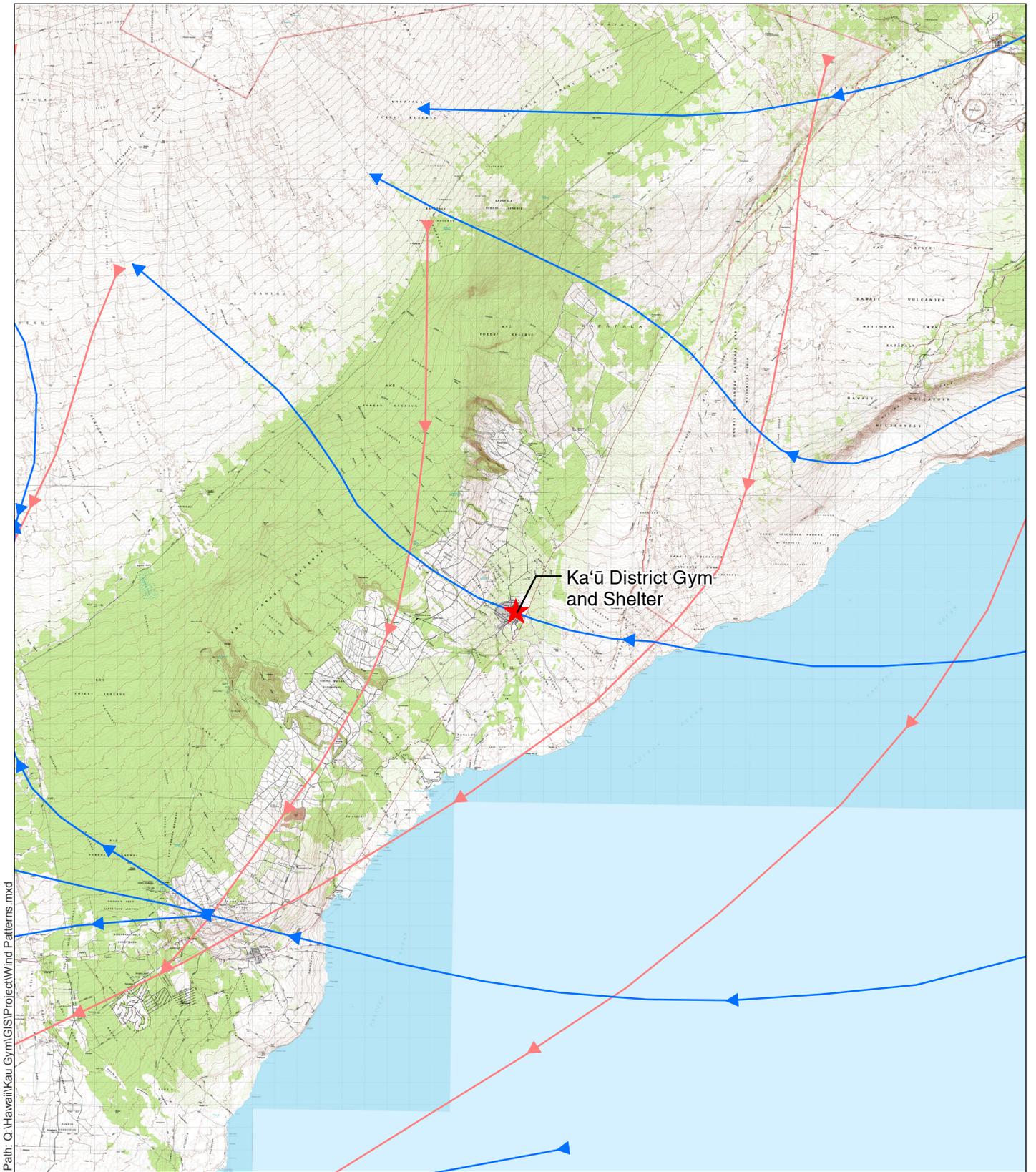
According to *The Rainfall Atlas of Hawai'i*, the Site receives an average annual rainfall of approximately 50 inches (Giambelluca, et al., 2011). Ka'ū's rainfall pattern is characterized by windward-leeward differences due to Mauna Loa and Kīlauea. Cast in the dry leeward shadow of Kīlauea, the eastern portion of Ka'ū is aptly known as the Ka'ū Desert where the average annual rainfall ranges up to 40 inches. However, the trade winds that blow through the saddle of Kīlauea and Mauna Loa bring moisture to the upland portion of Ka'ū on the windward side of the Mauna Loa southwest rift zone. On the leeward side of the Mauna Loa southwest rift zone, the maximum average annual rainfall is 60 inches compared with the maximum annual rainfall on the windward side at comparable elevation is twice as much as 120+ inches.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The predominant northeast trade winds blow vog from Kīlauea towards Ka'ū, heightening the need for the Project to provide a vog safe room. To mitigate excessive irrigation due to the relatively dry climate, the landscaping design should favor drought-tolerant plant species. The relatively dry climate also means relatively higher insolation, making photovoltaic a more promising option to consider.

3.2 GEOLOGY AND TOPOGRAPHY

Of the five volcanoes that formed the Big Island—Kōhala, Hualālai, Mauna Kea, Mauna Loa, and Kīlauea—only Mauna Loa and Kīlauea are presently considered active; the other three are considered dormant. The shield of Mauna Loa has been built by eruptions along this southwest rift zone and a northeast rift zone that radiate out from a summit caldera. The summit is located



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LEGEND

- ★ Ka'u District Gym & Shelter
- Wind Direction**
- ↶ ↷ 2 AM HST
- ↶ ↷ 2 PM HST

DATE: 2/8/2012

FIGURE 13:
Wind Patterns

KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works Island of Hawaii

North

Linear Scale (feet)

0 10,000 20,000

Source: State GIS- AWS Truewind, LLC, 2004

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

approximately 20 miles north of the Site. The Site is located on Kīlauea’s southwest rift zone. Elevations across the Site range from approximately 900 feet to 930 feet above mean sea level with slopes of generally five to ten percent.

Ka‘ū is characterized by several distinctive geological formations.

Mauna Loa and Kilauea – Mauna Loa and Kīlauea formed the lands of Ka‘ū. Mauna Loa is nearing the end of the shield stage and rises to 13,340 feet. Eruptions are rare, with three occurring in the last 50 years. Kīlauea, on the other hand has been continuously active throughout recorded history. Both volcanoes have northeast and southwest rift zones where land is slipping towards the ocean, generating both small and large earthquakes. Lō‘ihi Seamount is another volcano located 18 miles off the coast of Ka‘ū which has infrequent eruptions and small earthquakes.

Pāhala Ash – Near the town of Pāhala, the remnants of the Nīnole volcano are covered by a yellowish volcanic ash, known as the Pāhala ash. In Ka‘ū, it appears the ash is primarily from Kīlauea with some contribution from Mauna Loa.

Lava Tubes – A geotechnical survey was conducted for the Project and found no significant lava tubes underlying the Project down to a depth of approximately 25 feet. Appendix B contains the complete report.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Ka‘ū District Gym & Shelter will not adversely impact the topographic nature of the Site relative to the surrounding lands.

The geotechnical report recommends that due to its moderate to high compressibility and poor workability, the surface soils within the Project areas should be completely removed and, if required, replaced with imported non-expansive, granular structural fill. Since cavities and voids are commonly encountered in basalt formation, it is recommended that the Site be proof rolled prior to fill placement. Any cavities disclosed during the proof rolling operations should be exposed and properly backfilled with compacted fill or controlled low strength material.

The grading of the Site will be in conformance with the Hawai‘i County Grading Ordinance. To minimize potential impacts, necessary grading will be segmented and exposed areas will be immediately grassed or landscaped before commencement of grading in the next phase, in compliance with Chapter 10 (Erosion and Sedimentation Control) of the Hawai‘i County Code.

The grading will follow Best Management Practices (BMPs) as described in the National Pollutant Discharge Elimination System (NPDES) Permit. The contractor will submit a site specific construction BMP Plan to the State DOH before grading commences.

3.3 SOILS

There are three soil suitability studies prepared for lands in Hawai'i whose principal focus has been to describe the physical attributes of land and the relative productivity of different land types for agricultural production; these are: 1) the U.S. Department of Agriculture Natural Resource Conservation Services (NRCS) Soil Survey; 2) the University of Hawai'i Land Study Bureau (LSB) Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH) system.

3.3.1 Natural Resource Conservation Service Soil Survey

The NRCS Soil Survey for the Island of Hawai'i, classifies the soil of the Site as Waiaha Silt Loam (WAC) (Figure 14).

Waiaha Silt Loam, 0 to 10 percent slopes (WAC), occurs on coastal plains and low uplands ranging from near sea level to 1,200 feet and consists of shallow, well-drained silt loams underlain by pāhoehoe lava bedrock. These soils are nearly level to moderately steep. The surface layer is very dark brown. Permeability is moderately rapid, runoff is slow, and the erosion hazard is slight. Waiaha Silt Loam is used for pasture and orchards. Capability classification is IIIe, nonirrigated.

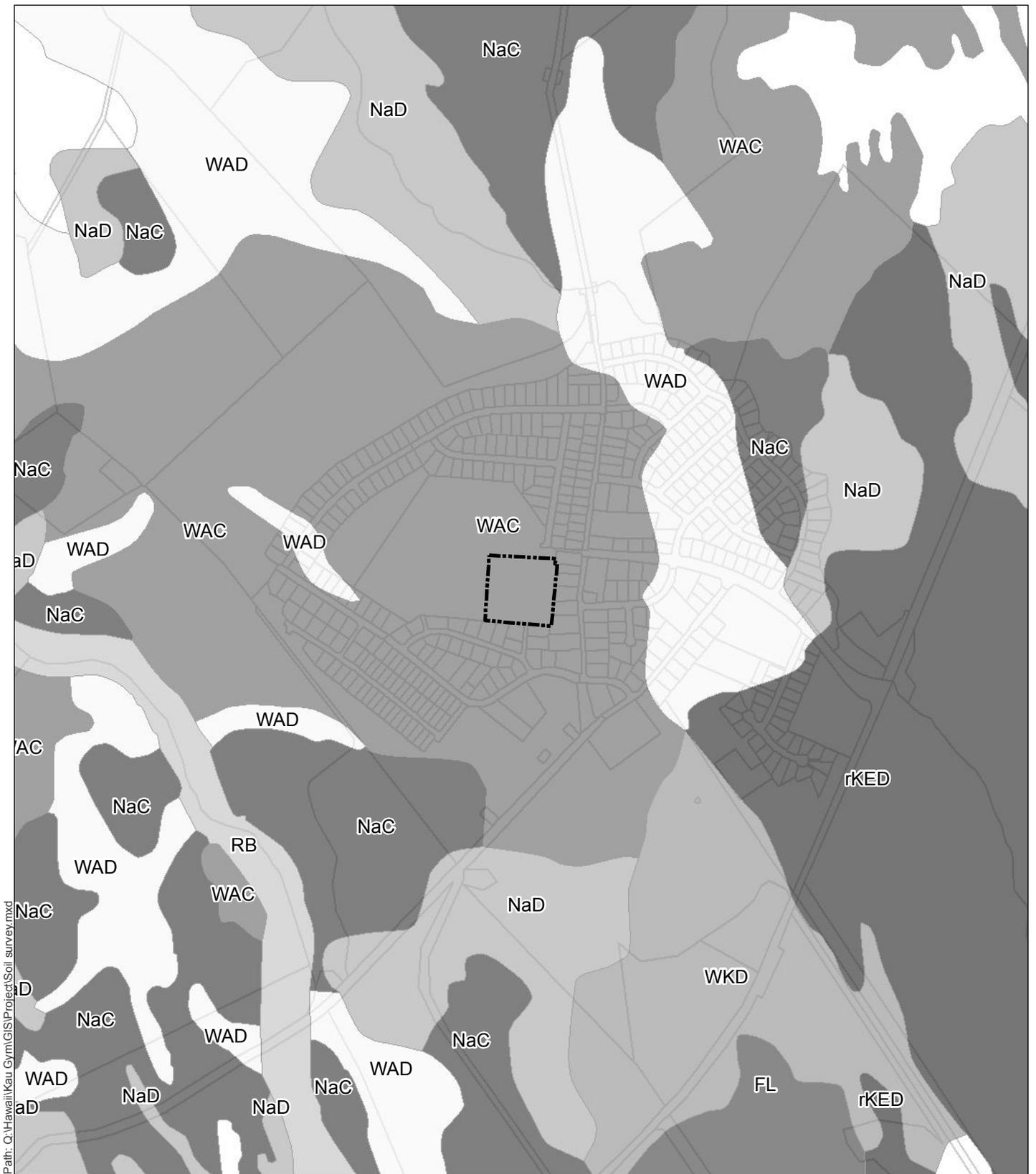
3.3.2 LSB Detailed Land Classification and Agricultural Lands of Importance to the State of Hawai'i

The University of Hawai'i LSB document, Detailed Land Classification, Island of Hawai'i, classifies soils based on a productivity rating. Letters indicate class of productivity with A representing the highest class and E the lowest. The ALISH system classifies agricultural lands as "Prime," "Unique," or "Other" lands. Neither the ALISH or LSB classification system identifies any of the land within Pāhala town, including the Site, as suitable agricultural land (Figure 15).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Construction of the Ka'ū District Gym & Shelter will not reduce the inventory of agriculturally significant land. The Site has a NRCS capability classification of IIIe, meaning it has very severe limitations that reduce the choice of plants, require very careful management, or both. The main limitation is risk of erosion unless close-growing plant cover is maintained. The Site is unclassified on the LSB classification and not classified under the ALISH system, indicating that the Site is not agriculturally significant.

Impacts to the soils of the Site include the potential for soil erosion and the generation of dust during grading and construction. All construction activities will comply with all applicable Federal, State, and County regulations and rules for erosion control. As typically required for



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DATE: 2/7/2012

LEGEND



Site

Soil Classification

- FL-Fill land
- NaC-Naalehu silty clay loam, 0-10% slopes
- NaD-Naalehu silty clay loam, 10-20% slopes
- RB-Rough broken land
- WAC-Waiaha silt loam, 0-10% slopes
- WAD-Waiaha silt loam, 10-20% slopes
- WKD-Waiaha very rocky silt loam, 10-20% slopes
- rKED-Kaimu extremely stony peat, 7-25% slopes

FIGURE 14:
NRCS- Soil Survey

KA'Ū DISTRICT GYM & SHELTER

County of Hawai'i Department of Public Works Island of Hawai'i

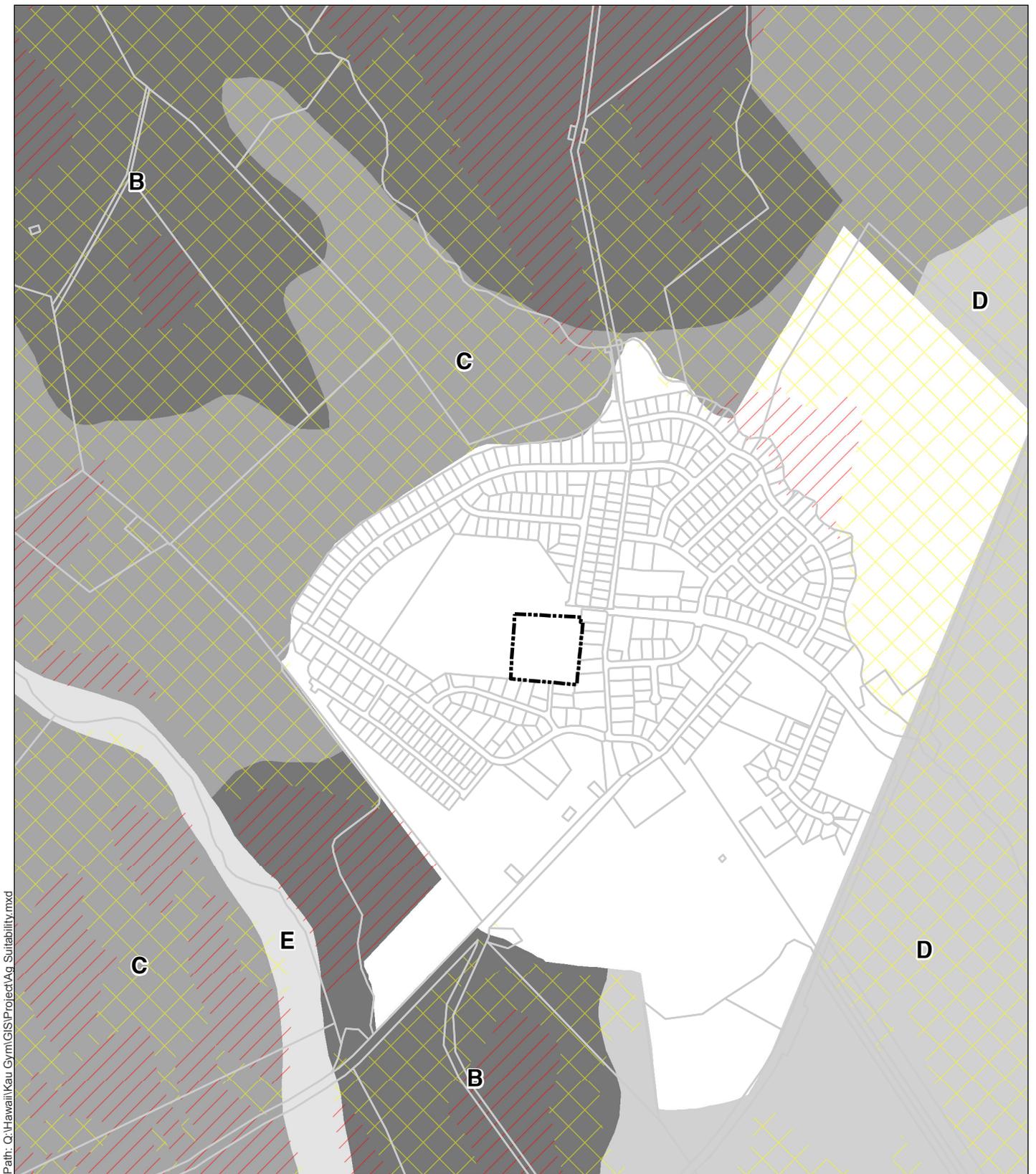
North

Linear Scale (feet)

PBR HAWAII & ASSOCIATES, INC.

Source: State GIS- USDA Natural Resources Conservation Service (2007)

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LEGEND

 Site	LSB Classification	ALISH
	 A - Very Good	 Prime ALISH
	 B - Good	 Unique ALISH
	 C - Fair	 Other ALISH
	 D - Poor	 Unclassified
	 E - Very Poor	
	 Unclassified	

FIGURE 15:
Agricultural Suitability

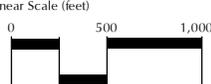
KA'Ū DISTRICT GYM & SHELTER

County of Hawai'i Department of Public Works Island of Hawai'i

North



Linear Scale (feet)





Source: State GIS- Department of Agriculture (1977)

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

projects on land greater than one acre in size, a NPDES Notice of General Permit Coverage (NGPC) for Storm Water Associated with Construction Activity will be necessary.

To minimize potential impacts, necessary grading will be segmented and exposed areas will be immediately grassed or landscaped before commencement of grading in the next phase, in compliance with the Chapter 10 (Erosion and Sedimentation Control) of the Hawai'i County Code.

3.4 HYDROLOGY

Due to relatively young and porous geology of Ka'ū, most of the rainfall infiltrates to the groundwater. Groundwater generally occurs as a basal lens with freshwater above the 2,000-foot elevation and brackish water below.

The State Commission on Water Resource Management (CWRM) established an aquifer coding system to characterize groundwater resources in Hawai'i. Based on the CWRM's coding system, the Site overlies the Nā'ālehu Aquifer System of the Southeast Mauna Loa Aquifer Sector. The system extends from the summit of Mauna Loa to near Māmalahoa Highway. Sustainable yield is the amount of groundwater that can be pumped without depleting the source. The sustainable yield of the Nā'ālehu Aquifer is 118 million gallons per day (MGD), and existing water use is 0.059 MGD or 59,000 gallons per day (CWRM 2008).

There are no perennial streams in the district.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Project is not anticipated to have any significant adverse impact on groundwater resources. No uses that could contaminate ground water are expected to be developed as part of the Project. Potable water will be supplied by the County DWS, which draws water from a network of groundwater wells. Section 3.4 (Water System) of this EA provides further information regarding anticipated water demands and water system improvements. The Project will use drywells to dispose the additional runoff generated by the impervious surfaces of the Project. The drywells will require an Underground Injection Well permit. The permit requirements mitigate any impacts on the groundwater.

The Ka'ū District Gym & Shelter is not anticipated to adversely impact surface water resources. Construction related water quality impacts will be mitigated by complying with the requirements of the NPDES permit. Mitigation measures that may be implemented include phasing grading activities, installing silt fences and other structural controls, directing runoff to retention/detention basins, and installing temporary groundcover. Section 4.7.3 of this EA includes further information regarding the drainage improvements.

3.5 MARINE WATERS

The Site is approximately 4 miles inland from the coast. Near shore marine waters off the coast of Ka‘ū are classified as “AA” by the State Department of Health (DOH). According to DOH Water Quality Standards, “It is the objective of class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions” (HAR §11-54-03(c)(1)).

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Project will increase the amount of impermeable surface area of the Site. Direct discharge of stormwater runoff into marine waters during or after construction is not expected due to the distance of the Site from the coast and high permeability of lavas in the vicinity of the Site. Compliance with NPDES and UIC permit requirements would mitigate the Project generating any contribution to the region’s cumulative nonpoint source pollution.

3.6 NATURAL HAZARDS

Hawai‘i is susceptible to potential natural hazards, such as flooding, tsunami inundation, hurricanes, volcanic hazards, earthquakes, and wildfires. This section provides an analysis of the Site’s vulnerability to such hazards.

The State of Hawai‘i Department of Defense, Office of Civil Defense operates a system of civil defense sirens throughout the State to alert the public of emergencies and natural hazards, particularly tsunamis and hurricanes. The closest siren to the Site is HA804 Pāhala Siren located in the park on the school grounds.

3.6.1 Flood

Over the past 50 years, the Island of Hawai‘i has experienced, on average, a damaging flood event every two years (County of Hawai‘i, 2005). The district of Ka‘ū has experienced 12 stream flooding events between 1917 and 1993. Between 2000 to 2008, nine flash flood events have occurred on the Island of Hawai‘i which equates to approximately one event per year, with one of those events occurring in Ka‘ū.

According to the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program, the Site is located within Zone X (Figure 16). Zone X is an area determined to be outside of the 0.2% annual chance floodplain. No base flood elevations or depths are shown within this zone. A portion of Pāhala, east of the Site, is located within a 500-year riverine flood boundary, an area that has a 0.2-percent chance of flooding in any given year.

Path: Q:\Hawaii\Kau_Gym\GIS\Project\DFIRM.mxd



DATE: 2/8/2012

LEGEND

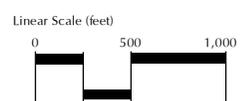
-  Site
- Zone Designation**
-  X500
-  X

FIGURE 16:
Flood Insurance Rate Map

KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works

Island of Hawaii



Source: State GIS- Federal Emergency Management Agency, 2005

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

3.6.2 Tsunami

Twenty-five of the tsunamis recorded since 1812 had an adverse impact on the Island of Hawai'i; seven caused major damage and three were generated locally. According to the *Hawai'i County Multihazard Mitigation Plan*, locally generated tsunamis are most frequent along the south coast, and the probability of impacts to the Ka'ū and Puna districts are higher than in other areas. The 1946, 1960, and 1975 tsunamis generated waves that caused localized inundation and damage in the district of Ka'ū, east of Ka Lae, South Point and also in Halape. The most recent tsunami to impact Hawai'i Island, which occurred on March 11, 2011, caused property damage at several locations on the Kona coast. There are, however, no records of inundation of developed lands in the Ka'ū district during any of the recorded tsunamis and there was no visible damage to vegetation at the Site from the March 11, 2011 tsunami.

The current tsunami evacuation zone is in the process of being updated by the Hawai'i County Civil Defense Agency. At elevation 900', the Site is definitely not in a tsunami evacuation zone. The Project would be available as a shelter for those coastal residents or visitors who need to evacuate in the event of a tsunami warning (Figure 17).

3.6.3 Hurricane

Since 1980, two hurricanes have had a devastating effect on Hawai'i. They were Hurricane 'Iwa in 1982 and Hurricane 'Iniki in 1992. In 2007, Hurricane Flossie threatened to reach Hawai'i, putting Hawai'i on a hurricane watch. The hurricane, however, was downgraded from a hurricane to a tropical storm after passing Hawai'i Island, 95 miles south of South Point (AP 2007). While it is difficult to predict such natural occurrences, it is reasonable to assume that future incidents are likely, given historical events. Several studies sponsored by the NASA Office of Earth Science have developed new models for estimating the probability of hurricanes in the Pacific. While the Island of Hawai'i has not been in the direct path of a hurricane since recordation began in 1950, the models indicate that the island has a long-term hurricane hazard higher than any of the other islands.

3.6.4 Volcanic Hazards

Volcanic hazards include lava flows, emission of volcanic gases (vog), and volcanic tephra.

Lava Flows

The volcanic hazard zone map for Hawai'i Island divides the island into zones ranked from one through nine, with one being the area of greatest hazard and nine being the area of least hazard. The zones are based chiefly on the location and frequency of both historic and prehistoric eruptions. According to this map, the Site is within Zone 3 (Figure 18), meaning between 1 to 5 percent of area has been covered by lava since 1800 and 15 to 75 percent in the last 750 years (USGS, 1997). Zone 3 indicates a moderate hazard from lava flows and corresponds to the



LEGEND

- Site
- Tsunami Evacuation Zone

FIGURE 17:

**Tsunami Evacuation Zone
KA'Ū DISTRICT GYM & SHELTER**

County of Hawaii Department of Public Works Island of Hawaii

North

Linear Scale (feet)

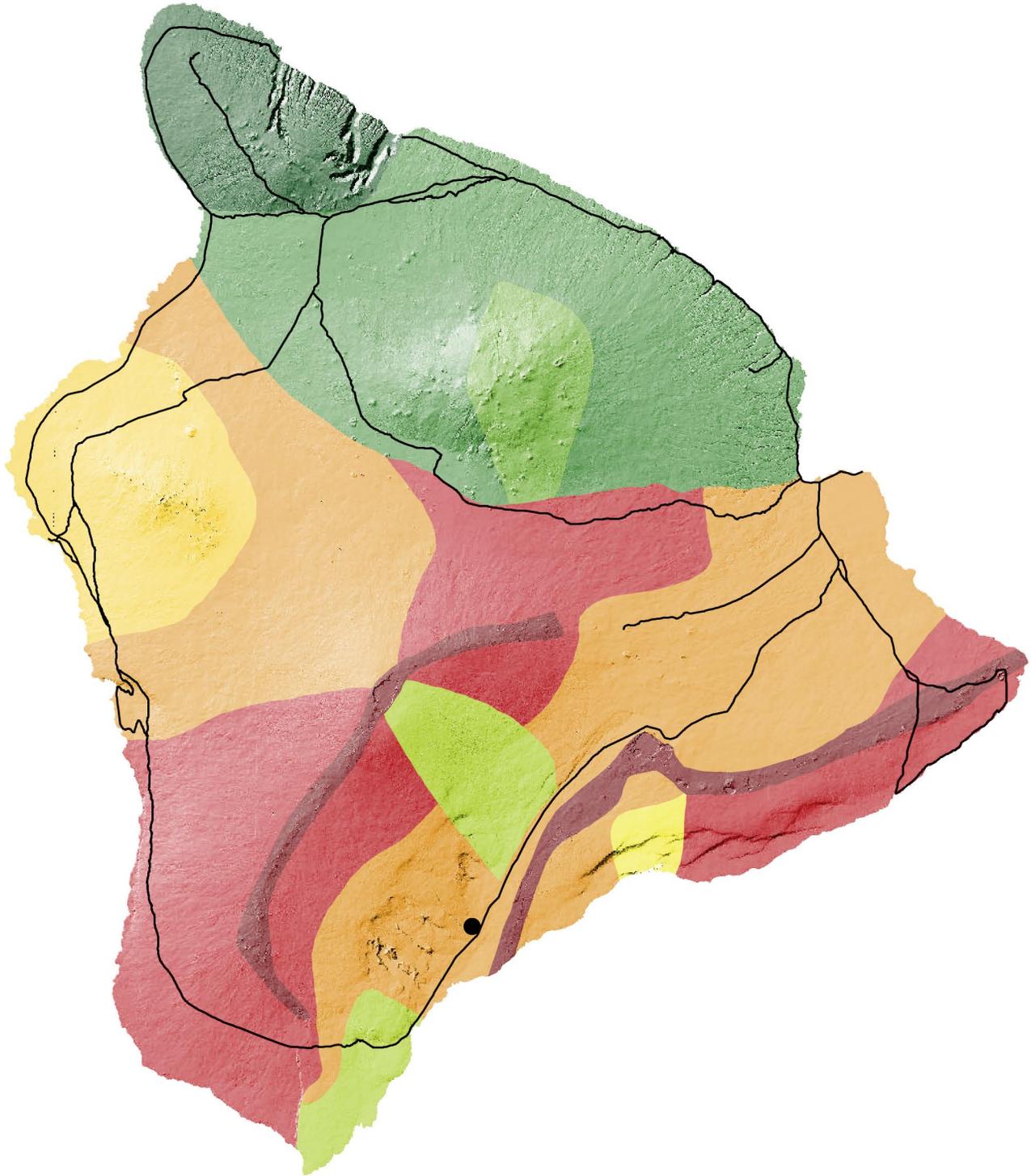
0 2,500 5,000

PBR HAWAII & ASSOCIATES, INC.

Source: State GIS- Pacific Disaster Center (PDC), 1998

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

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Path: Q:\Hawaii\Kau Gym\GIS\Volcanic Hazards.mxd



LEGEND

- Ka'ū District Gym & Shelter
- ~ Roadways

Hazard Zone

- 1-High
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9-Low

FIGURE 18:

Volcanic Hazards

KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works

Island of Hawaii



Linear Scale (feet)



Source: U.S. Geological Survey 1991

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

activity associated with Kīlauea volcano affecting areas adjacent to and down slope of the volcano's active rift zones.

Lava flows present potential threats to homes, infrastructure, natural and historic resources, and entire communities. The areas exposed to the highest risk from lava flows are those situated down slope and in close proximity to the active rift zones. Steep slopes may allow lava flows to move quickly from the summit to the ocean in a matter of hours. Besides the direct threat of inundation, lava flows may also cut across a community's single roadway escape route limiting the amount of time available for evacuation. Between 1868 and 1950, five eruptions from Mauna Loa's southwest rift zone have reached the ocean. These flows traveled quickly and in at least one instance reached the ocean in three hours.

Vog

Volcanic gases (vog) are emitted during all types of eruptions. Gases also can be released during repose periods by inactive eruptive vents and by fumaroles, vents that may never have produced any lava. Any hazard posed by volcanic gases is greatest immediately downwind from active vents; the concentration of the gases quickly diminishes as the gases mix with air and are carried by winds away from the source. Brief exposure to gases near vents generally does not harm healthy people, but it can endanger those with heart and respiratory ailments, such as chronic asthma (USGS, 1997).

Halema'uma'u, the crater located at the summit of Kīlauea is erupting large amounts of volcanic gas and small amounts of volcanic ash. The ash and gas are being transported downwind and can harm human health and agriculture. Pu'u 'Ō'ō, is a vent located further to the east of Halema'uma'u and is also erupting large amount of volcanic gasses.

A common gas produced during Hawaiian eruptions that is potentially harmful to human health is sulfur dioxide (SO₂). Even small concentrations of SO₂ can combine with water to form sulfuric acid, which can attack skin, cloth, metal, and other materials. When a volcanic plume mixes with atmospheric moisture, acid rain results. Acid rain can significantly retard the growth of cultivated or natural plant life downwind of a vent that degasses over a long period of time (USGS, 1997).

Volcanic Tephra

Most volcanic eruptions produce fragments of lava that are airborne for at least a short time before being deposited on the ground. These fragments are called "tephra," and include ash, cinders, and Pele's hair. In Hawai'i, tephra is usually ejected by lava fountains and poses a serious hazard only in the immediate vicinity of an erupting vent. Windborne tephra, however, can be disruptive at greater distances. The combination of high lava fountains and strong winds may result in tephra being carried many miles downwind of the eruption site. During lava

fountaining episodes at Pu'u 'Ō'ō from 1984 to 1986, the prevailing trade winds deposited most of the tephra in remote areas of Hawai'i Volcanoes National Park, but small particles reached the town of Nā'ālehu 39 miles away. During the same episodes, Kona winds (from the southwest) occasionally carried tephra to Hilo, 22 miles from the vent (USGS, 1997).

The small amount of tephra that fell on inhabited areas was not harmful to most people, but it was a source of irritation to those with respiratory problems and an inconvenience to the many residents with rain-water-catchment systems. Following at least three high-fountaining episodes, Hawai'i County Civil Defense recommended that people disconnect and clean their rain-water catchment systems to prevent the particles from washing into their water supply (USGS, 1997).

3.6.5 Earthquake

In Hawai'i, most earthquakes are linked to volcanic activity, unlike other areas where a shift in tectonic plates is the cause of an earthquake. Each year, thousands of earthquakes occur in Hawai'i, the vast majority of which are so small they are detectable only with highly sensitive instruments. However, moderate and disastrous earthquakes have occurred in the islands.

Since 1868, nine disastrous earthquakes have occurred in Hawai'i County. The largest earthquake series occurred between March 27 and April 2, 1868 with an epicenter a few miles north of Pāhala in the district of Ka'ū. It is estimated that the magnitude of these earthquakes were 7.1 and 7.9. These earthquakes resulted in 77 deaths (46 from tsunami and 31 from landslides triggered by the earthquake). In 1929, an earthquake with an epicenter in Hualālai and a magnitude of 6.5 resulted in extensive damage. Another earthquake in 1951, with its epicenter in Kona area and a magnitude of 6.9 also resulted in extensive damage. A series of earthquakes, with magnitudes of 6.7 and 6.0, occurred at Kīholo Bay on October 15, 2006. These earthquakes resulted in more than \$100 million in damages to the northwest area of the island (USGS, 2006). Within the district of Ka'ū, the last major earthquake occurred in 1975. While the earthquake resulted in minimal property damage, it was the second largest recorded earthquake in Hawai'i (magnitude 7.2). Two deaths occurred at Halape Beach from tsunami inundation, a result of the earthquake.

The Uniform Building Code (UBC), provided as Chapter 5 of the Hawai'i County Code, designates Hawai'i County into five seismic zones, ranging from 0 (no chance of severe ground shaking) to 4 (10 percent chance of severe shaking in a 50-year interval). The Site is located in Seismic Zone 4 Probability Rating.

Studies done of the 2006 Kīholo earthquake damage found that post and pier homes, typical of the plantation-style homes in Pāhala, were the most susceptible to damage from earthquake. Single- and double-wall homes built prior to 1993 (1994 UBC Code required improved structural measures) are potentially vulnerable (Figure 19). The study recommended retrofit options to improve foundational connections and lateral strength. These retrofit measures would also strengthen the home for hurricane winds. Unless the many older homes in the Ka'ū region

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LEGEND

 Site

Dwelling Types

 DOUBLE WALL

 SINGLE WALL/DBL BOARD

 WOOD/SINGLE WALL

FIGURE 19:

**Single and Double Wall Dwellings
Built Prior to 1993**

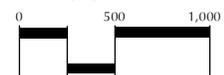
**KA'Ū DISTRICT GYM &
SHELTER**

County of Hawai'i Department of Public Works

Island of Hawai'i



Linear Scale (feet)



Source: State GIS

Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

retrofit to become more earthquake and hurricane resistant, the incidence of those needing shelter during and after a severe earthquake or hurricane event may be proportionately higher than other areas on the island.

3.6.6 Wildfires

Approximately 70 to 80 wildfires occur annually in Hawaii County. Droughts increase the vulnerability to wildfires. Due to the drought susceptibility in the Ka'ū region, the potential for wildfires is relatively high. Prevailing winds in the area can exacerbate a wildfire should one start.

Smoke from wildfire is composed primarily of carbon dioxide, water vapor, carbon monoxide, particulate matter, hydrocarbons and other organic chemicals, nitrogen oxides, trace minerals and several thousand other compounds. The actual composition of smoke depends on the fuel type, the temperature of the fire, and the wind conditions. Particulate matter is the principal pollutant of concern from wildfire smoke for the relatively short-term exposures (hours to weeks) typically experienced by the public. Particulate matter is a generic term for particles suspended in the air, typically as a mixture of both solid particles and liquid droplets. Particles from smoke tend to be very small - less than one micrometer in diameter. Such small particles can be inhaled into the deepest recesses of the lung and are thought to represent a greater health concern than larger particles.

The effects of smoke range from eye and respiratory tract irritation to more serious disorders, including reduced lung function, bronchitis, exacerbation of asthma, and premature death. Studies have found that fine particles are linked (alone or with other pollutants) with increased mortality and aggravation of pre-existing respiratory and cardiovascular disease. In addition, particles are respiratory irritants, and exposures to high concentrations of particulate matter can cause persistent cough, phlegm, wheezing and difficulty breathing. Particles can also affect healthy people, causing respiratory symptoms, transient reductions in lung function, and pulmonary inflammation. Particulate matter can also affect the body's immune system and make it more difficult to remove inhaled foreign materials from the lung, such as pollen and bacteria.

Similar to vog, certain sensitive population may experience more severe short-term and chronic symptoms from smoke exposure. These sensitive individuals include those with: asthma and other respiratory diseases; airway hyper-responsiveness, an exaggerated tendency of the bronchi and bronchioles to constrict in response to respiratory irritants; cardiovascular disease; elderly; children; pregnant women, and smokers (Washington Department of Health and others, 2001). The Project's vog shelter would provide relief for these sensitive individuals.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Project would provide significant beneficial impacts to the Ka'ū District to become disaster-resilient. The Project would provide a shelter that can withstand a Category 3 hurricane (500-

year return period), provide refuge to individuals sensitive to vog or wildfire smoke, and provide needed congregate shelter space for victims of damage from tsunami, hurricane, earthquake, flooding, and lava flow.

3.7 BOTANICAL RESOURCES

The Site is entirely grassed (see site photographs in Figure 4). No threatened or endangered plant species are known to exist within the Site or on the school campus.

Protected reserves in the vicinity of the Site include: Hawai'i Volcanoes National Park, Ka'ū and Kapāpala Forest Reserves, Ka'ū Preserves, Manukā Natural Area Reserve and Wayside, and Kamehameha Preserve.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Creation of the Ka'ū District Gym & Shelter will not impact any endangered plant species, as none are known to be present at the Site.

The building landscape will attempt to utilize the maximum amount of native species feasible or plants that have proven to be adaptable to the area.

3.8 WILDLIFE RESOURCES

Several species of native birds may traverse the area but they are not known to currently nest or forage on Site. According to the U.S. Fish and Wild Service (USFWS), the Site is located within a designated critical habitat area for the 'Io or Hawaiian Hawk (*Buteo solitaries*). This species hunts in a variety of habitats including forests, agricultural lands, and grasslands. The 'Io is a listed endangered species and is only found on Hawai'i Island.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Creation of the Ka'ū District Gym & Shelter will not result in deleterious impacts to native birds or mammal species as none were identified on Site.

To minimize the threat of disorientation or downing of these birds, such as the 'Io (Hawaiian Hawk), all exterior lighting will be shielded in compliance with Section 14-50, Hawaii County Code and night-time construction will be avoided.

In addition, in compliance with Section 14-50, Hawaii County Code, exterior lights will be shielded so as to lower the ambient glare caused by unshielded lighting to the astronomical observatories located on Mauna Kea.

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4 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the human environment, preliminary potential impacts of Ka'ū District Gym & Shelter, and preliminary mitigation measures to minimize any impacts.

4.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES

Historic Background

The district of Ka'ū has historically been a relatively independent district, isolated from the rest of the island. Polynesian voyagers probably settled Ka'ū very early. The natural setting of Ka'ū when first colonized looked much different from today. Early settlers found the region habitable, although it is now a desolation of recent and older lava. Large sections of this area are known to have been cultivated garden spots before their devastation by lava flows. Forested areas reached down to the coast fed by dewfall from the cold mist-laden breeze (kehau) that blows down from the wet or snow-clad heights of Mauna Loa. With more forests and dew condensation, there was probably more percolation and underground flow of water feeding springs and waterholes. In addition to a reduction of forested areas, earthquakes have also been known to diminish the groundwater flow. In short, the early colonists found a much more favorable habitat, climate, and water supply (Handy and Handy 1972:545). As population increased, the rest of the island was inhabited. Most of the early settlement in Ka'ū consisted of small fishing villages. By the time Captain Cook arrived in 1779, Ka'ū was a lava-covered landscape. Around the time of western contact, the ruler of Ka'ū was Keoua. With his death during the dedication of Heiau Pu'ukoholā, Kamehameha I became the ruler of the entire island.

Identified Sites

The Ka'ū High and Pāhala Elementary School is listed on the State of Hawai'i Register of Historic Places and under the State Inventory of Historic Places (SIHP) site 10-69-7522 for public schools on the Island of Hawai'i. This listing is for a thematic group of sites which includes several other public schools under this SIHP site number. This school was identified as a significant site based on the National Register Criteria A and C which are:

Criterion A – Property is associated with events that have made a significant contribution to the broad patterns of our history.

Criterion C – Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

Under Criterion A, the school was significant to the categories of education and social history. Under Criterion C, the school was significant to the category of architecture. The period of significance was from 1935 to 1950. The school has 8 out of 15 buildings, and 2 out of 8 structures which are contributing resources to this significance. The eight buildings of significance include:

1. Building E (main classroom building) – A large building “E” shaped in design with a lanai running through its spine, and a corrugated metal, hip roof.
2. Classroom Buildings A and B – These U-shaped, single-wall constructed, tongue-and-groove vertical board school buildings on post and pier foundation with a double-pitch hip roof.
3. Music Building – This old building is a very simple rectangular, single vertical board wall with posts structure.
4. Building D (Gymnasium Building) – This large-scaled building approximately 60 by 100 feet in size with a large hip, corrugated galvanized iron roof.
5. Teacher Cottages (3 buildings) – Teacher’s cottages built as duplexes typical of this rural plantation style using single wall construction and a chair rail on the interior of the house which acts as a girt.

Built in the 1930s, Ka'ū High and Pāhala Elementary School was determined to be significant as an intact example of a rural school to service the plantation community. This school reflected the time period in the County of Hawai'i building program of rapid expansion in the plantation population, and thus the educational needs in rural areas of the island.

It was also a largely intact campus designed by Frank F. Arakawa who was a County architect and engineer. This school, built in the later years of the school building boom, utilized some “Hawaiian style” characteristics. It was simple and vernacular in style, and was reflective of the surrounding plantation town it resided in.

The school was far from the main town center of Hilo, and the children of the burgeoning plantation towns needed education. Many of these rural schools throughout the island had teacher's housing, but today most of them have been torn down or reworked to house other school functions. Teacher's cottages were vital to attracting teachers to these rural areas. Ka'ū High and Pāhala Elementary School are one of few schools which still have the teacher's cottages.

Today, the school continues to be a major public institution in the area and visually retains its association with its plantation roots. While there are numerous new structures scattered throughout the campus, these buildings have been designed in the same vernacular architectural vocabulary, and did not detract from the rural character of the school. Many of the newer buildings also reflected the agrarian heritage of the area, including green houses and an imu (ground oven for roasting pigs) (NPS, 2002).

POTENTIAL IMPACTS AND MITIGATION MEASURES

No adverse impacts to archeological or historic resources are anticipated as a result of construction. No burials have been identified on the site.

The County of Hawai'i DPW and its contractors will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. Should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be inadvertently encountered during the construction activities, work will cease immediately in the immediate vicinity of the find and the find will be protected. The contractor shall immediately contact the State Historic Preservation Division, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

4.2 CULTURAL RESOURCES

Scientific Consultant Services Inc. prepared a cultural impact assessment for the Site to identify traditional customary practices within the site and in the vicinity of the area. The cultural impact assessment was conducted in accordance with the OEQC Guidelines for Assessing Cultural Impacts and includes archival research of Pāhala and the surrounding area. Findings of the cultural impact assessment and other relevant information are summarized below. Appendix C contains the complete cultural impact assessment.

Wahi Pana (Legendary Places)

The district of Ka'ū is translated as “the breast”, as it may appear rising from Mauna Loa (Maly, 1992). The ahupua'a of Pā'au'au is a traditional Hawaiian land division situated within Ka'ū between the coast and the upland slopes of Mauna Loa. Pā'au'au is a bath enclosure and used as a name for ponds (Pukui, 1974). The name Pāhala refers to cultivating by burning mulch.

Prehistoric and Historic Accounts of Ka'ū

Ka'ū has been known from old as Ka'ū Mākaha, or Fierce Ka'ū because the maka'āinana there did not lightly bear the abuses of the ali'i and konohiki (Kelly, Nakamura, & Barrère, 1981). In particular, there are three separate stories that relate the death of a chief for abusing his right to porters; the death of a chief for abusing his right to a portion of the fishermen's catch; and the death of a chief for abusing his right to demand labor for construction. Historically, the people of Ka'ū are also notably fierce warriors.

Kamakau notes that 'Umi-a-Liloa (ruler, 1600 to 1620) was thwarted in his attempt to subdue Ka'ū during his campaign to unite the six districts of the Island of Hawai'i (Kamakau, 1992). He was opposed by a particularly fierce chief named I-mai-ka-lani whose skill with a spear 'Umi-a-Liloa feared. It wasn't until after I-mai-ka-lani's death that 'Umi-a-Liloa captured Ka'ū. After the death of Lono-i-ka-makahiki (ruler 1640-1660), rule over Ka'ū, Kona, and Kohala passed to Kanaloa-kua'ana's (ruler 1640s) descendants. Keawe (ruler 1720-1740) later ruled over Ka'ū,

Kona, and Kohala. At his death, Keawe commanded that his son Ka-lani-nui'imamao become the ruler of Ka'ū. Ka-lani-nui'imamao's son Ka-lani-'opu'u (ruler 1754-1782) later added Puna to his rule over Ka'ū. Ka-lani-'opu'u reunified the six moku of Hawai'i in 1754.

In 1776, when Ka-lani-'opu'u's warriors were defeated by Ka-hekili's forces at Wailuku on Maui, Ka-lani-'opi'u turned to the chiefs of Hawai'i to renew the attack on Maui (Kamakau, 1992). One of the chiefs he turned to was Nu'u-anu-pa'ahu, known as the "tearer-up of the cutworms of Nā'ālehu, the hillside that withstands the winds of Ka-u." Ka-lani-'opi'u later feared that Nu'u-anu-pa'ahu would rebel against Ka-lani-'opi'u's son, and so plotted to induce Nu'u-anu-pa'ahu to surf and be eaten by sharks. Nu'u-anu-pa'ahu decided not to join in surfing, but was later attacked by sharks and died of his injuries after killing the shark.

Kamehameha, though born in Kohala, was raised by Ka-lani-'opu'u in Ka'ū after the death of Kamehameha's father. Ka-lani-'opu'u died in 1782 and his son Keoua became the ruling chief of Ka'ū and Puna. Kamehameha killed Keoua in battle in 1790 during Kamehameha's campaign to unify the Island of Hawai'i under his rule. Kamehameha often fished for ahi at Ka Lae (South Point) when they were running just offshore.

Post-Contact

The first Europeans to the Ka'ū coast, Captain Cook's crew of 1779, recorded the coastline to be a desolate and barren lava strewn land without water (King, 1784). Early travelers to the interior recorded a somewhat more verdant landscape. Archibald Menzies traveled through Ka'ū in 1794 on his way to the top of Mauna Loa and described the area of Wai'ōhinu as "a fine fertile valley" (Menzies, 1920). Menzies also recorded horticultural fields of bananas, vegetables, taro, and sweet potato along the lowland coast of Honu'apo. He noted that fallow fields were sown with grass that was cut and used as mulch in the growing fields.

William Ellis recorded his impressions of the area during his travel through Ka'ū in 1823. He wrote that the area surrounding Honu'apo seemed isolated and not often visited by foreigners (Ellis, 2004). A group of about 200 Hawaiians gathered there to hear him preach. Between Honu'apo and the village of Kapāpala to the northeast, Ellis passed through the villages of Hōkūkano, Hīlea, Nīnole, Punalu'u, Wailau, Makaaka [Mākaka], and Ka'ala'ala.

Ellis recorded the presence of a fresh water spring at Hōkūkano and several fish ponds at Hīlea. He described Nīnole as a small village, but gives no description of Punalu'u or Wailau. Ellis described the open land between Wailau and Makaaka as uncultivated rich, yellow-looking soil. Makaaka, 1.0 to 1.5 miles southwest of present day Pāhala, had only four or five houses with three or four families at the time of Ellis' visit. The land between Makaaka and Ka'ala'ala, 1.5 miles northeast of Pāhala, was only marginally cultivated until Ellis passed through numerous "large fields of taro, potatoes, with sugar-cane and plantains growing very luxuriantly" between Ka'ala'ala and Kapāpala. Pāhala did not exist as a village at the time of Ellis' visit, and Pāhala town is the product of the later commercial plantation era (Handy, 1972). The area likely was

sparsely populated and the location of dispersed households and upland gardens. Pāhala town is at the top of the dry barren zone and the bottom of the kula uka zone where dry-land taro, sweet potatoes, arrow root, and turmeric were grown.

The population of Ka'ū was estimated to be approximately 10,000 people in the early 1800s (Handy, 1972). By the late 1800s disease, starting with the 1804 cholera epidemic, drought, deforestation due to goats and cattle, and the introduction of a cash economy and the resultant changes in subsistence all brought about a reduction of the population to about 2,000 individuals.

Ka'ū suffered several recorded droughts around the period of 1845 (Kelly, Nakamura, & Barrère, 1981). The droughts were then followed by fire and a cycle of famine and disease from 1845 to 1865. An earlier fire was reported to have burnt nearly all of Ka'ū in 1830 or 1831. The fires, famine, and disease, most notably a measles epidemic in 1850, reduced the population of Ka'ū through death and emigration to other areas of the island. An additional factor that added to the famine is that Hawaiians turned to collecting pulu (the soft material at the base of the tree fern) to sell to foreign merchants. The practice thrived as Hawaiians could be contracted to collect the pulu as payment for goods. The goods would be given as a debt to be paid in pulu. The collected pulu was bought for three to five dollars per thousand pounds to pay off the debt. The foreign traders then sold the pulu for roughly \$105 per thousand pounds. In contrast, taro farming, wheat farming, and other subsistence crop products sold for much less. As a result, debt, food scarcity, famine, and depopulation accelerated in Ka'ū.

Land Grants

With the Mahele of 1848 and the two Acts of 1850, authorizing the sale of land in fee simple to resident aliens and the award of kuleana lands to native tenants, land tenure in Hawaii arrived at a significant turning point (Chinen, 1961). No Land Commission Awards were made within the project area. The project area is in the central portion of a large Land Grant. The Land Grant (GR. 2446) was a 173.5-acre parcel granted to Kamalo in Palima and Pā'au'au Ahupua'a in 1857 (waihona.com). No information was reported in the Land Commission records concerning land-use.

History of Sugar in Ka'ū

The first sugar mill in Ka'ū was built at Wai'ōhinu by Nicolas George in 1866 (Elwell & Elwell, 2004). The mill was constructed behind the present day Wai'ōhinu park. Samuel Clemens noted in that year there were 150 acres of sugar cane plantation and a dozen houses at Wai'ōhinu. In 1868, Alexander Hutchinson bought 225 acres of land and established the Naalehu Sugar Mill at Nā'ālehu. Hutchinson bought the Wai'ōhinu Sugar Company in 1877, established a plantation and mill at Hilea, and in 1879 he established another mill at Honu'apo. In 1879 after Hutchinson died, the Hutchinson Sugar Plantation Company continued under the direction Of W.G. Irwin.

Flumes were installed to bring sugar cane to the mill and railway lines were installed to transport raw sugar and molasses from Nā'ālehu to Honu'apo for shipping (after the construction of Honu'apo Wharf in 1883). Though the Nā'ālehu mill closed in 1912, the company continued sugar production and merge with C. Brewer and Company in 1919. The sugar railroads operated through the early 1940s. By 1942, the wharf at Honu'apo was closed and raw sugar was shipped to Hilo by truck for shipping to California. Honu'apo mill closed in 1972. All sugar industry ended at Ka'ū in 1996.

The sugar industry changed the social fabric of the area. Chinese laborers were brought in by Hutchinson to work in the sugar cane fields in the 1876. Portuguese, Japanese, and Pacific Islanders were brought in during the 1880s, and Filipinos began arriving at the beginning of the 1900s. Numerous sugar camps were established in the area to house the sugar cane industry workers. The camps were often segregated by ethnic background. There was a Japanese camp on both sides of the Naalehu Spur road in Naalehu, just west of the current project area. The town of Naalehu owes much of its growth the sugar industry in the region.

C. Brewer and Company operated a dairy and butchery in Nā'ālehu that provided milk and beef. The remains of the dairy still stand just west of the current project area. They also had a company store in Nā'ālehu. Several other stores also operated in Naalehu town beginning in the era of sugar cane agriculture. After the 1960s, raw sugar production moved to other parts of the world where it was cheaper to produce. Large land owning corporations, once engaged in sugar production, switched to macadamia nut farming as a means of income.

Sugar cane agriculture was followed by macadamia nut plantations, especially common in the area surrounding Pāhala town. Sugar cane is no longer a large scale industry in Ka'ū, though macadamia plantations still exist and coffee production is enjoying new growth.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The cultural impact assessment concludes that the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected. Because there were no cultural activities identified within the project area, there are no adverse effects.

4.3 ROADWAYS AND TRAFFIC

Fehr and Peers conducted a focused transportation impact analysis to evaluate the potential traffic impacts resulting from the creation of Ka'ū District Gym & Shelter. The transportation report includes an analysis of existing conditions and near-term future conditions with the Project in place. Key conclusions of the report are summarized below. Appendix D contains the complete report.

Primary vehicle access to the Site is from the mauka terminus of Kamani Street, immediately west of Puahala Street. A pedestrian access way is provided at the Hala Street terminus by way of a short flight of stairs and an opening in the fence (see Figure 4). No sidewalks, designated walking paths, or separate bicycle facilities are provided within the vicinity of the Site. There are 46 parking spaces immediately adjacent to the Site and approximately 26 more spaces on the school grounds adjacent to Puahala Street. A bus stop is located on the southeast corner of the Kamani Street/Pikake Street intersection and includes a bus shelter and ADA-compliant loading area.

Roadways

Māmalahoa Highway (Hawaii Belt Road or State Highway 11) is a 2-lane rural highway in the vicinity of Pāhala that extends: 1) north and east toward Volcano (25 miles away) and ultimately Hilo (55 miles away); and 2) south and west to Nā'ālehu (12 miles away) and Ocean View (24 miles away) before aligning north-south along the Kona coast. At the Kamani Street intersection, Māmalahoa Highway is posted with a 55-mile per hour speed limit. The highway serves two-way traffic and includes shoulders wide enough for a stalled vehicle to stand clear of the adjacent travel lane. Immediately north of Kamani Street, the highway includes a two-lane bridge with shoulders. No separate turn lanes are provided at the Kamani Street intersection.

Kamani Street is a nearly 0.5-mile collector street serving as the main vehicular access for Pāhala. This roadway includes two travel lanes and shoulders along most of its length between Māmalahoa Highway and Puahala Street. All-way stop control is provided at the intersection of Pikake Street, which represents the primary constraint point of the local street system within the community. The posted speed limit for this roadway is 25 miles per hour.

Puahala Street extends between Kamani Street and Pakalana Street and provides access to the northern area of Pāhala. Puahala Street includes wide shoulders and a substantial grade mauka of Pumeli Street. The posted speed limit is 25 mph and the approach to Kamani Street is stop-sign controlled.

Existing Traffic Volumes

The overall vehicle trip generation in the vicinity of the Site is relatively low due to the number of dwelling units (less than 500) in Pāhala and the distance to major activity centers on the island. Drivers experience little or no delay at all intersections within the study area turning into and out of the Site. A substantial number of students are bused to school from areas outside Pāhala. There is no traffic congestion except for a brief time when school classes end. The afternoon peak lasts for a maximum of five to seven minutes.

The daily and peak hour volumes on Māmalahoa Highway makai of the Site are relatively low. State Hawaii Department of Transportation (DOT) data indicates that the daily volume on this roadway in 2008 was less than 2,300 vehicles per day, and the maximum two-way peak hour

volume is slightly more than 200 vehicles occurring between 3:00 pm and 4:00 pm. Although this data is several years old, there has not been substantial growth in this area since 2008. This volume represents less than approximately 20 percent of the capacity of the roadway.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The transportation impact analysis concluded the following:

- **Impact on Surrounding Roads and Access.** Given the low existing traffic volumes on the surrounding roadways, the anticipated future traffic conditions for the Project will not warrant additional road improvements in the area.
- **Efficiency and Safety of Proposed Site Plan Circulation.** Overall, the Project will provide adequate vehicle circulation within the vicinity of the Site, with recommendations to the existing site plan for improvement.
- **Adequacy of Proposed Parking.** No parking deficiency is anticipated with typical operations at the Site assuming the proposed on-site supply of 159 spaces, as well as the 72 additional existing spaces at the school. Hence, a parking variance seems reasonable to allow shared parking with the school and grass (unpaved) overflow parking. A final determination has not been made as to the number of paved spaces and those that could be accommodated on grass areas.
- **Impact on Pedestrian and Bicycle Access.** The feasibility of providing a wider pedestrian path on Kamani Street between Puahala Street and Pikake Street should be investigated. Improved pedestrian and bicycle access to the Site from Hapu Street as part of an emergency access should be investigated.

4.3.1 Impact on Surrounding Roads and Access

Future Traffic Volumes—Typical Operations

The Project will not generate any new trips during school hours since the on-site student population will be the users of all of the facilities through the dismissal time of 2:15 pm. After that time, members of the community will be allowed to selectively use the new facilities. However, school students are still expected to be the primary users through the afternoon hours as they practice for school sports. After 5:00 pm, the proportion of community users is expected to increase as students leave for home. Operations are expected to vary from day to day, but the maximum use of all facilities is only expected to happen on rare occasions. The analysis of future traffic and parking conditions was evaluated for assumed typical operations, but an estimate of maximum use was also developed for informational purposes.

The number of trips estimated was based on the simultaneous use of all facility components. Typical late afternoon/evening use would generate a total of 195 peak hour vehicle trips (104 in/91 out). If a high school basketball game was scheduled instead of league play, the number of trips would increase to 215 (167 in/48 out). The amount of traffic generated during school hours before 2:15 pm would be negligible (less than 15 peak hour trips). For a major basketball game that would fill every seat in the gym, the number of peak hour trips generated by the site would

theoretically be as high as 580. However, given the existing and proposed parking supply at the Site, all of the vehicles could not be accommodated and other arrangements for transporting people to the site would have to be made. This would likely include remote/off-site parking and frequent shuttle service, or the use of high-capacity passenger buses.

A potential vehicle connection to Hapu Street is located at the southwest corner of the Site. Based on the relatively low trip generation and the fact that vehicle delays are expected to be minimal, a second public street connection to the Site is not required from a capacity perspective. While increased connectivity is always desirable to distribute traffic over the entire street network, this connection is not needed. However, an emergency access connection should be provided via a locked gate such that emergency responders can drive onto the school campus should vehicle access be blocked at the Kamani Street entrance.

Emergency Shelter Use

During the event of a natural disaster the Project will serve as an emergency shelter for Ka'ū residents. Residents will arrive using various modes of travel including automobile, bus, walking and bicycling. At that time, it is assumed that all access points to the Project will be open.

4.3.2 Efficiency and Safety of Proposed Site Plan Circulation

Overall, the proposed site plan will provide adequate vehicular circulation within the school area. Minor suggestions to improve circulation that are under consideration by the Project designers include:

- Move the new driveway access slightly to the west to create a four-way on-site intersection. This will better direct drivers as they enter and exit the adjacent Kamani Street/Puahala Street intersection;
- Install stop signs on the new driveway access to the project site and on the driveway approach serving the north part of the school (i.e., where the buses currently exit the site). This will clearly delineate right-of-way and improve safety as vehicles turn at this location;
- Relocate the drive aisle connection at the southeast corner of the site. This will encourage more traffic to use the outside circulation aisle and reduce traffic immediately adjacent to the building;
- Complete a turning template analysis to ensure that full-size buses are able to turn and park at the southeast corner of the new building.

4.3.3 Adequacy of Proposed Parking

Similar to the trip generation estimate, the assumptions for parking were developed using a conservative approach regarding simultaneous demand and expected turnover. Peak parking demand under typical late afternoon/early evening conditions is estimated to be 194 spaces assuming activities in all parts of the gym complex. If a basketball game is scheduled the peak

demand is expected to be slightly higher at 214 spaces. A major event where every available seat in the gym is occupied would generate a theoretical demand of 577 parking spaces. However, this scenario is expected to occur rarely and would require provision of alternative transportation options to accommodate that level of patrons.

Additional vehicle parking is available on the north side of the school campus if all of the spaces near the Site are occupied. No other changes to circulation are anticipated when the gym operates as a shelter.

A final determination has not been made as to the number of paved spaces and those that could be accommodated on grass areas. Given the infrequency of major basketball games relative to the total number of days in a year, it may be feasible to limit the number of paved spaces and “land bank” an area for future expansion of the paved area if needed.

4.3.4 Impact on Pedestrians and Bicyclists

Local Pāhala residents should be encouraged to walk and bicycle and avoid driving to the new community amenity given the multiple access routes (Kamani Street, Puahala Street and Hala Street). With development of a new emergency access point on Hapu Street, installation of a new fence opening to allow bicyclists and pedestrians to access the school and district gym is recommended. This will benefit residents who choose to walk from their homes on portions of Huapala, Hau, ‘Īlima, and Pakalana Streets.

It is recommended that the feasibility of installing a new separate path on the south side of the street be investigated and evaluated as part of project development. The evaluation would consider right-of-way impacts to the adjacent residential parcel amongst other considerations.

Given the relatively low speeds and traffic volumes, bicyclists are able to share the road with vehicles, and no separate bicycle lanes or paths are needed near the project site. However, bicycle racks should be provided near building entrances to encourage cycling and to provide a safe location for bike parking and storage. Also consider creating an improved pedestrian- and bicycle-only access from Hapu Street.

4.4 NOISE

Sources of noise from the Project include the activity noise from the building and the traffic noise from vehicles entering and exiting the Project. The Project buildings were sited in the corner of the Site furthest from the neighboring residents. The parking lot noise would be primarily limited to the start and end of the activity. The hurricane-criteria results in a building that is enclosed, which also serves to contain noise.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Construction activities will inevitably create temporary noise impacts. If necessary contractors will employ mitigation measures to minimize those temporary noise impacts including the use of mufflers and implementing construction curfew periods. Pursuant to Chapter 11-46, HAR, all construction activities must comply with all community noise controls.

Temporary noise impacts will also be generated during the course of school and community sporting events. These noise disturbances are an unavoidable element of Project usage but nonetheless will be intermittent and of short duration. All night activities will end no later than 10:00 p.m., and thereby comply with the community noise regulation that imposes quieter standards after 10:00 p.m.

4.5 AIR QUALITY

Air quality in the Ka'ū district is variable and at times impaired by emissions from Kīlauea Volcano, whose vents are approximately 12 miles east of the Site. Prevailing wind patterns tend to carry emissions to the southwest, in the direction of the Site. Air flow from this direction carrying volcanic vog can lead to an increase in pollution and a decrease in visibility.

Sulfur Dioxide from Kīlauea is the primary pollutant monitored by the Environmental Protection Agency (EPA) throughout Hawai'i County. The data reported from the Hawai'i Island vog monitoring stations indicate that concentrations of sulfur dioxide at Pāhala (near the source) tend to be higher than those measured in Kona.

Kīlauea Volcano is recognized as the largest point source of sulfur dioxide (SO₂) gas in the United States. Gaseous emissions increased dramatically in 2008 when a new vent opened at the volcano's summit. Emission estimates increased to 3,000 – 5,000 tons per day (tpd) of SO₂, in contrast to previous average emission of 1,700 tpd. SO₂ levels are greater near the sources (Halema'uma'u and Pu'u 'Ō'ō) and less further away or upwind from the vents.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No State or Federal air quality standards will be violated due to the construction of the Ka'ū District Gym and Shelter.

The Hawai'i County Civil Defense Agency has a system in place to issue advisories for vulnerable populations based on these natural conditions. The DOH maintains a toll-free help line that provides daily updates on vog levels and also maintains a website in conjunction with the EPA that provides vog advisory levels based on current sulfur dioxide levels.

Short-term impacts that would result from the creation of Ka'ū Gym would be the emission of fugitive dust during site preparation and construction. An effective dust control plan will be implemented as necessary. All construction activities will comply with the provisions of Section

11-60.1-33, HAR related to Fugitive Dust. Measures to control dust during various phases of construction include:

- Providing an adequate water source at the site prior to start-up construction activities;
- Irrigating the construction site during periods of drought or high winds;
- Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Disturbing only the areas of construction that are in the immediate zone of construction to limit the amount of time that the areas will be subject to erosion;
- Providing adequate dust control measures during weekends, after hours, and before daily start-up of construction activities; and
- Installing silt screening in the areas of disturbance.

Long-term negative impacts related to air quality are not expected.

4.6 VISUAL RESOURCES

Within the vicinity of the Site, the County General Plan identifies the pu'ū of Enuhe, Makaanau, Kaiholena, and One as natural beauty sites (§7.5.8). These landmark pu'ū are located on the slopes southwest of Pāhala at an elevation of approximately 2000'.

The historic architecture of the Ka'ū High and Pāhala Elementary School has been recognized by its placement on the Hawaii Register of Historic Places. This architectural style contributes to the rural character of Pāhala town.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Ka'ū District Gym & Shelter will be noticeable from Kamani Street and will change the visual character of the Site from an open grass field to a landscaped parking lot and approximately 40,000 square feet building. However, the structure will be visually compatible with the adjacent historic school buildings with the proposed plantation-style roofline and complementary paint color. The placement and height of the building will not obstruct any view planes toward the pu'ū nor obstruct any existing views of the ocean (see Figure 20 and Figure 21).

The height of the Project building at approximately 48 feet will exceed the zoning height limit of 35 feet. The tallest existing school building is approximately 40 feet. A height variance is being sought to allow the building to exceed the maximum height requirement of 35 feet.

4.7 INFRASTRUCTURE AND UTILITIES

Mitsunaga & Associates, Inc. prepared an Engineering Report for the Ka'ū District Gym & Shelter. Key findings of the report are summarized in the following sections. Appendix B contains the complete report.



1. View from Pumeli Street.



2. View from Puahala Street.



3. View from Pikake Street.



4. View from Hala Street and Hinano Street.



5. View from Pakalana Street.



FIGURE 20:
Views toward Site

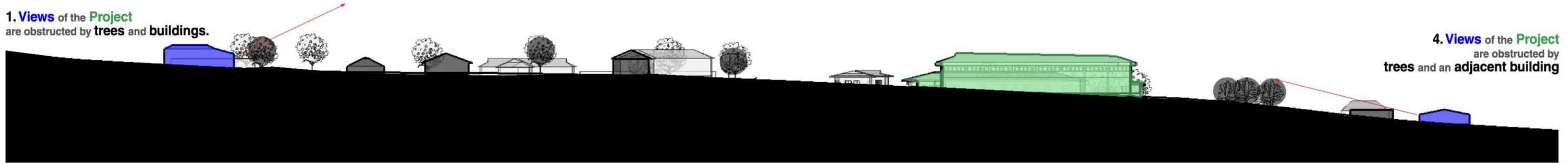
KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works

Island of Hawaii

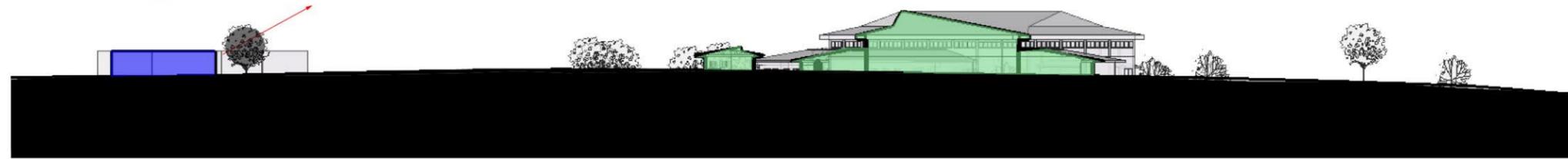


1. Views of the Project are obstructed by trees and buildings.

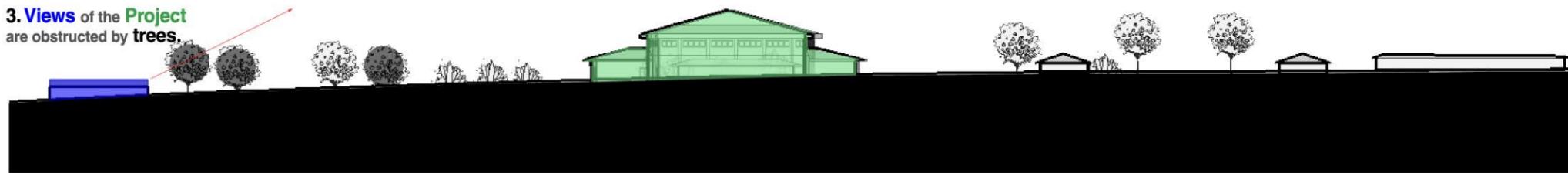


4. Views of the Project are obstructed by trees and an adjacent building

2. Views of the Project are unobstructed with scenic views towards the pu'u in the background.



3. Views of the Project are obstructed by trees.



5. Views of the Project are obstructed by a grove of trees and existing buildings.

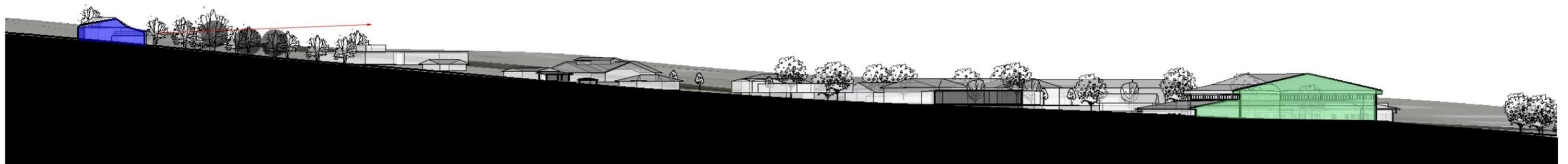
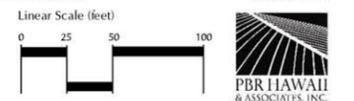


FIGURE 21:
Section Elevations of Sightlines

KA'Ū DISTRICT GYM & SHELTER

County of Hawaii Department of Public Works Island of Hawaii



4.7.1 Water System

Pāhala is supplied by the Nā‘ālehu Aquifer System. The system extends from the summit of Mauna Loa to near Māmalahoa Highway. The sustainable yield of the Nā‘ālehu Aquifer is 118 million gallons per day (MGD), and existing water use is 0.059 MGD or 59,000 gallons per day (CWRM 2008).

The County of Hawai‘i Department of Water Supply (DWS) is the major purveyor for potable water.

An existing 6-inch water line runs along Kamani Street and through the school grounds.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The potable water system will connect to the County water system and comply with the current *Water System Standards* and *Standard Details for Water System Construction*, Board of Water Supply. The existing 6-inch water line will provide service for the Project’s potable water supply and fire protection. A new water meter and water line will provide domestic service to the building, and a new 6-inch water meter and 6-inch water line will provide water for the fire sprinklers. Potable water laterals will fulfill all mechanical requirements. New and existing fire hydrants will be accessible onsite in order to meet the Hawai‘i County Fire Department’s coverage requirement.

Potable water demand for the Ka‘ū District Gym & Shelter uses are designed using water consumption assumptions based on Board of Water Supply Planning Guidelines. The assumed water consumption standards are provided in Table 4 below:

Table 4: Water Consumption Standards

Usage	Demand (gpd)
Average Daily Demand	62,640
Maximum Daily Demand	93,960
Peak Hour Demand	313,200
Fire Flow at Key Buildings	2,000 gpm

4.7.2 Wastewater System

Ka‘ū High and Pāhala Elementary School replaced its Large Capacity Cesspool (LCC) with an approved septic system. However, the former sugar plantation operated a LCC system serving over 100 lots in Pāhala. Several commercial properties in Pāhala also have illegal LCCs. In order to conform with the Underground Injection Control regulations of the U.S. Environmental

Protection Agency, the County of Hawai'i is assisting the residents and businesses to eliminate the use of all LCCs. (SSFMI International, Inc., 2007).

A new County sewer system providing secondary wastewater treatment for designated properties in Pāhala is being planned. New sewer system improvements consist of three components which are: 1) sewer collection system; 2) wastewater treatment; and 3) wastewater disposal. The County sewer system will be designed to handle wastewater flows of 117,300 gallons per day (gpd).

In accordance with Section 21-5, Hawai'i County Code (HCC), Ka'ū High and Pāhala Elementary School, including the Ka'ū District Gym and Shelter, will be required to connect to the County sewer system when access becomes available. The State Department of Education will be responsible for coordinating and constructing the connection to the sewer system via a branch main on Hala Street and properly closing their onsite system.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Ka'ū High and Pāhala Elementary School, including the Ka'ū District Gym and Shelter, will connect to the new County sewer system when access becomes available. A sewer main will be installed within the access road and Hala Street to link the school to the County sewer main.

In the interim, the Project will install a septic system in a location that will easily tie into the County sewer system when it becomes available. The school's existing system does not have the capacity to accommodate the Project.

4.7.3 Drainage System

Site elevations range from approximately 900 to 930 feet above mean sea level with slopes of generally five to ten percent. The Site is entirely grassed and areas immediately mauka include the existing entrance driveway, parking, and weight room. Residential homes are located makai of the Site.

Currently, surface runoff sheet flows across the Site. There is no existing municipal drainage system onsite or in the surrounding area.

The Site is designated on the FIRM as Zone X, an area determined to be outside the 500-year flood plain (Figure 16).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Roadway and parking lot drainage shall be designed based on Hawai'i County's 10-year storm standard, and the runoff will be disposed by using drywells on the Site, which will percolate into the ground.

The Project will have roof drains connecting to the new subsurface drainage system. Existing drainage patterns will be maintained, as much as possible, runoff will sheet flow across the Site to landscaped areas, or to proposed drainage structures. Building finished floors will be higher than the surrounding grades and runoff will be directed away from the buildings. Additional peak storm water runoff generated by the Project will be detained.

4.7.4 Solid Waste

The County of Hawai'i Solid Waste Division operates and maintains, either by County personnel or by contracted services, all solid waste collection and disposal facilities on the island. This includes two landfills, twenty-one transfer stations and island wide hauling operations in accordance with local, state and federal guidelines and regulations.

In the Ka'ū District, the nearest transfer station to the Site is the Pāhala Transfer Station, located less than one mile away on Maile Street.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Waste generated by site preparation will primarily consist of green waste from grading, and solid waste during construction. Soil and rocks displaced from grading and clearing will be used as fill within the site as needed. To reduce waste during construction, recycled materials and locally produced products will be used where possible.

After construction, the Ka'ū District Gym and Shelter will generate solid waste related to facility operations and events. To minimize waste, recycling bins will be provided for users.

Waste that cannot be recycled will be disposed of at the Pāhala Transfer Station.

4.7.5 Electrical and Communications System

Electrical power for Ka'ū High and Pāhala Elementary School is provided by Hawaii Electric Light Company (HELCO). HELCO currently has two overhead circuits in the vicinity of the Site, a 4KV (kilovolt) system along Puahala Street and a 12KV system that runs from Hapu Street to the Pāhala substation. Both systems are mounted on utility poles which also hold telephone and cable lines.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Although the 4KV system powers the school, HELCO has determined the 4KV system cannot accommodate the Project's electrical load. Therefore, the overhead distribution system to serve the Project will come from the 12KV system on Hapu Street, which has adequate existing capacity to accommodate the Project.

The primary overhead system on Hapu Street consists of a three phase 12.47KV system that currently serves the baseball field. The overhead extension from Hapu Street would consist of

approximately seven new utility poles and terminate with either a new three phase transformer bank on the last pole or pad mounted transformer. The secondary extension will be routed underground to the Project's electrical room. The routing of the new overhead lines would be installed near an existing tree line to mitigate any visual impacts. The alternative to install the system entirely underground would cost two to three times the overhead system cost, and would not result in significant tradeoff benefits since the visual impact of the overhead system is minimal and the "hardening" of the system from high winds could still result in power loss since the rest of the circuit system is overhead.

The telephone and cable service will be connected to the overhead poles from Hapu Street and extended to the Project's buildings. The communication system would be routed underground at the last pole and terminated at the Project's electrical room.

Solar power is being considered for the parking lot lights, as well as a photovoltaic system for the entire facility if the budget can accommodate. Measures for energy efficiency will be implemented into the Project to reduce the maximum electrical load and energy consumption. The following energy saving methods and technologies will be considered during the design phase of the Project:

- Maximum use of day lighting;
- Use of high-efficiency fluorescent lighting;
- Exceeding Model Energy Code requirements;
- Roof and wall insulation, radiant barriers, and energy efficiency windows;
- Multi-level and/or zone switching for selectivity and task lighting;
- Use of occupancy sensors in offices;
- Use of solar parking lot lighting;
- Use of light color roofs;
- Use of roof and gutters to divert rainwater for landscaping (water conservation measures reduce pumping needs); and
- Use of landscaping for dust control and to minimize heat gain to the area (heat gain from the parking lot can increase the desire to increase mechanical ventilation or turn on air conditioning).

4.8 SOCIO-ECONOMIC CHARACTERISTICS

4.8.1 Population

The overall population of Hawai'i County has exhibited relatively stable growth over the past decade. The U.S. Census reported that the population of Hawai'i County was 185,079 people in 2010, a 24.5 percent increase from the 2000 population of 148,677 people.

While Ka'ū is the largest district on the island, it is the second smallest in population. The population of Ka'ū was 8,451 people in 2010, a 45 percent increase from the 2000 population of 5,827 (U.S. Census Bureau).

The Site is within the U.S. Census Bureau's Pāhala Census Designated Place. According to the data, the population for the Pāhala Census Designated Place was 1,356 people in 2010, a 1.6 percent decrease from the 2000 population of 1,378 (U.S. Census Bureau).

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Ka'ū District Gym & Shelter will not affect area population. The construction of the Project will improve the school's facilities, provide a recreational amenity for the entire district, and provide a public emergency shelter in the event of a natural hazard.

4.8.2 Economy

The local economy is agrarian in nature. Coffee, orchids, vegetables, flowers, cattle, and macadamia nuts are grown in this district. According to the Hawai'i County General Plan, approximately five million dollars have been invested in Ka'ū to establish a forestry industry. The macadamia nut industry remains the primary industry in the district. Tourism currently plays a very limited role in the local economy as there are only 68 transient units located at two facilities within Ka'ū.

As of December 2011, Hawai'i County's unemployment rate was 9.2 percent, compared to the State's overall rate of 6.6 percent (State of Hawai'i Department of Labor and Industrial Relations, 2012).

In the Pāhala Census Designated Place, the population ages 16 years and over was 1,064 people in 2010. Of that total, approximately 592 people were considered to be in the labor force with 529 employed and 63 unemployed. Of the 592 people in the labor force, approximately 24 percent were employed in the management, business, science, and arts occupations, 27.6 percent in service occupations, 11 percent in sales and office occupations, and 26.7 percent in natural resources, construction, and maintenance occupations. The remaining 10.8 percent were employed in the production, transportation and material moving occupations.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Ka'ū District Gym & Shelter will have little impact on the growth of the regional economy. Through its indirect impacts, Ka'ū District Gym & Shelter will provide positive economic benefits in terms of construction jobs, construction spending, and multiplier effects on the local economy.

After the Project is built, the facilities may be used to generate revenue during paid sporting and community events.

4.8.3 Environmental Justice

On February 11, 1994, President Clinton signed Executive Order (E.O.) 12898. This E.O. directs federal agencies to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high adverse human health or environmental effects of its activities on minority and low-income populations.

Each Federal agency must make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health, environmental, economic, and social effects of its programs, policies, and activities on minority and low-income populations, particularly when such analysis is required by NEPA.

The Site of the Ka‘ū District Gym and Shelter is located in a predominantly mixed-race neighborhood typical of many in the State. No single cultural or ethnic group in the vicinity of the Site are disproportionately impacted relative to the Ka‘ū community at large.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Ka‘ū District Gym and Shelter would provide a needed recreational facility for the district of Ka‘ū and further protect the Ka‘ū community from natural hazards. The availability of a district gym and shelter in the immediate vicinity of the Site and neighboring properties is a positive and reassuring public service and may also have a positive impact on lowering home insurance rates for neighboring residents.

Although several sites were initially evaluated, this Site was not selected because of the neighborhood’s “economic status,” but because land was immediately available in a central location near major thoroughfare.

As such, the notion of environmental justice has been evaluated, and there would be no activity performed with federal funds that would in any way create discrimination or isolation of any group of people based on the siting or purpose of the Ka‘ū District Gym and Shelter.

4.9 PUBLIC SERVICES AND FACILITIES

4.9.1 Schools

Presently, DOE operates three public schools in the district of Ka‘ū. They are the combined campus of Ka‘ū High and Pāhala Elementary School (grades K-12) and Nā‘ālehu Elementary School (grades K-7). There are no public charter or private schools in the district of Ka‘ū. Table 5 presents current and projected school enrollment information.

Table 5: Capacity and Enrollment for Public Schools

School	Capacity for 2008-2009 School Year	Enrollment in 2009-2010 School Year	Projected Enrollment 2011- 2012
Ka‘ū High School/Pāhala Elementary School (Grades K-12)	624	576	590
Nā‘ālehu Elementary School (Grades K-7)	342	356	395

Source: State of Hawai‘i Department of Education, 2009

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Ka‘ū District Gym & Shelter will provide a recreational facility for Ka‘ū High and Pāhala Elementary School students that supports athletic, recreational, educational and artistic uses. During school hours and after school, the facility will be reserved for the school. After school and weekends, the facility will be open for community use and DPR programs.

The main gym floor will have space for regulation NCAA basketball, HHSAA basketball and HHSAA volleyball courts. The retractable bleachers have a maximum capacity of 1050 persons, more than adequate to accommodate the entire school enrollment of 590 students for assemblies, and can be retracted fully or partially depending on full-court or cross-court configurations. A portable stage would be setup for performances and other events (e.g., graduation) with a removable floor covering to protect the hardwood gym floor.

4.9.2 Police, Fire and Medical

The Ka‘ū District is served by the County of Hawai‘i Police Department through the Ka‘ū District Station located in Nā‘ālehu and a police substation located at Pōhue Plaza.

The nearest critical access health care facility to the Site is the Ka‘ū Hospital, located on Kamani Street in Pāhala, approximately 0.5 miles east of the Site. The 21-bed facility provides acute and long-term care services (Hawai‘i Health Systems Corporation, 2009). The Ka‘ū Family Health Center operated by the Bay Clinic is a Federally Qualified Health Center providing non-emergency medical, dental and behavioral health care during regular business hours. The Ka‘ū Family Health Center is located approximately 13 miles away on Māmalahoa Highway in Nā‘ālehu.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Ka‘ū District Gym & Shelter is not expected to create an increased demand on existing Police, Fire and Medical services.

4.9.3 Recreational Facilities

Park facilities owned and managed by the County of Hawai'i include Kahuku Park, Wai'ōhinu Park, Nā'ālehu Park, Whittington Beach Park and the Pāhala Community Center and swimming pool (although located on the school site, the Pāhala recreational facilities are County facilities).

State Park facilities, which are operated by the Department of Land and Natural Resources (DLNR) include Manukā State Wayside and three marine facilities Honu'apo Pier, Kaulana Ramp and Punalu'u Harbor. The State also manages the Manukā Natural Area Reserve as well as the Ka'ū and Kapāpala Forest Reserves.

Hawai'i Volcanoes National Park (HVNP), the largest of Hawai'i's eight National Parks, is located in Ka'ū. In addition to the land surrounding Kilauea's crater, the park owns considerable mauka areas of Mauna Loa.

POTENTIAL IMPACTS AND MITIGATION MEASURES

According to the General Plan, a district recreational facility should include a gymnasium with office, storage, restrooms, and showers (General Plan §12.4). The existing gym does not meet this standard. The project will provide beneficial recreational impacts by remedying deficiencies and expanding opportunities as follows:

- Court space for simultaneous activities;
- Opportunity to host NCAA games;
- Opportunity to host HHSAA basketball or volleyball tournaments using the multiple cross-court configurations;
- Opportunity to host parks & recreation tournaments with multiple simultaneous games;
- Expanded space for weight room for use by students and community (existing weight room is deficient in space and quality);
- Space for athletic offices, lockers, showers, training room, storage, where existing space is non-existent or deficient;
- Bleacher space with capacity to comfortably accommodate the community for school assembly, athletic, performance, or community events (existing gym too small);
- Opportunity to participate in more diverse athletic or physical education activities such as wrestling, martial arts, and other activities using the recreation room or multi-purpose room; and
- Indoor recreation or physical education opportunity when vog conditions are not conducive to outdoor activity.

5 LAND USE CONFORMANCE

State of Hawai'i and Hawai'i County land use plans, policies, and ordinances relevant to the Ka'ū District Gym and Shelter are described below.

5.1 STATE OF HAWAI'I

5.1.1 State Land Use Law, Chapter 205, Hawai'i Revised Statutes

The State Land Use Law (Chapter 205, HRS), establishes the State Land Use Commission (LUC) and authorizes this body to designate all lands in the State into one of four Districts: Urban, Rural, Agricultural, or Conservation.

The Site is located within the State Land Use Urban District (Figure 5). A gym and shelter is a permitted use in the State Land Use Urban District.

5.1.2 Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes

The Coastal Zone Management Area as defined in Chapter 205A, HRS, includes all the lands of the State. As such, the proposed Ka'ū District Gym and Shelter lies within the Coastal Zone Management Area.

The relevant objectives and policies of the Hawai'i Coastal Zone Management (CZM) Program, along with a detailed discussion of how Ka'ū District Gym and Shelter conforms with these objectives and policies, is discussed below.

Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

Policy A: Improve coordination and funding of coastal recreational planning and management; and

Policy B: Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

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

(ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

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

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

(v) Ensuring public recreational uses of County, State, and Federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and County authorities; and crediting such dedication against the requirements of section 46-6.

Discussion: The Ka'ū District Gym & Shelter is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, policies regarding shoreline recreation resources are not applicable; however to protect marine water quality the Project will be designed and built in compliance with all applicable Federal, State, and City regulations pertaining to stormwater management including the City & County of Honolulu's grading ordinance, and the DOH NPDES permit program.

Historic Resources

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

Policy A: Identify and analyze significant archaeological resources;

Policy B: Maximize information retention through preservation of remains and artifacts or salvage operations; and

Policy C: Support State goals for protection, restoration, interpretation, and display of historic resources.

Discussion: The cultural impact assessment concluded that "No cultural activities were identified within the project area, and the proposed undertaking will not produce adverse effects to any Native Hawaiian cultural practices (see Section 4.2 and Appendix C).

Scenic and Open Space Resources

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

Policy A: Identify valued scenic resources in the coastal zone management area;

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

Policy C: Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

Policy D: Encourage those developments which are not coastal dependent to locate in inland areas.

Discussion: The proposed Ka'ū District Gym & Shelter will be located inland, away from the shoreline; therefore, it is anticipated that there will be no effect on the quality of the coastal scenic and open space resources.

Coastal Ecosystems

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

Policy A: Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

Policy B: Improve the technical basis for natural resource management;

Policy C: Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

Policy D: Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

Policy E: Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion: The Ka'ū District Gym & Shelter is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, policies regarding coastal ecosystems are not applicable; however to protect marine water quality the Project will be designed and built in

compliance with all applicable Federal, State, and City regulations pertaining to stormwater management including the City & County of Honolulu's grading ordinance, and the DOH NPDES permit program.

Economic Uses

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

Policy A: Concentrate coastal dependent development in appropriate areas;

Policy B: Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

Policy C: Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental effects are minimized; and

(iii) The development is important to the State's economy.

Discussion: The Ka'ū District Gym & Shelter is not a coastal dependent development, is not located on the coastline, and is not in the SMA; therefore, these policies are not applicable.

Coastal Hazards

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

Policy A: Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;

Policy B: Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and non-point source pollution hazards;

Policy C: Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

Policy D: Prevent coastal flooding from inland projects.

Discussion: As discussed in Section 2.2 (Purpose and Need), the Ka'ū District Gym & Shelter will help ensure residents are protected during the event of a natural disaster and aide in the post-disaster recovery process.

Managing Development

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

Policy A: Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

Policy B: Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

Policy C: Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion: The Ka'ū District Gym & Shelter is not a coastal development, is not located on the coastline, and is not in the SMA; however, the County DPW held several community meetings and provided opportunity for public input in the course of planning the Ka'ū District Gym & Shelter.

Pre-consultation comments were obtained and are reproduced in Appendix A. In addition, this EA discusses potential impacts and mitigation measures of Ka'ū District Gym & Shelter and provides an opportunity for input.

Public Participation

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

Policy A: Promote public involvement in coastal zone management processes;

Policy B: Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

Policy C: Organize workshops, policy dialogues, and site- specific mediations to respond to coastal issues and conflicts.

Discussion: The Ka'ū District Gym & Shelter is not a coastal development, is not located on the coastline, and is not in the SMA; however, the County DPW held several community meetings and provided opportunity for public input in the course of planning the Ka'ū District Gym & Shelter.

Pre-consultation comments were obtained and are reproduced in Appendix A. In addition, this EA discusses potential impacts and mitigation measures of Ka'ū District Gym & Shelter and provides an opportunity for input.

Beach Protection

Objective: Protect beaches for public use and recreation.

Policy A: Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

Policy B: Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

Policy C: Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion: The Ka'ū District Gym & Shelter is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, this objective and these policies are not applicable.

Marine Resources

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

Policy A: Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

Policy B: Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

Policy C: Assert and articulate the interests of the State as a partner with Federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

Policy D: Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

Policy E: Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The Ka'ū District Gym & Shelter is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, policies regarding shoreline recreation resources are not applicable; however to protect marine water quality the Project will be designed and built in

compliance with all applicable Federal, State, and City regulations pertaining to stormwater management including the City & County of Honolulu's grading ordinance, and the DOH NPDES permit program.

5.1.3 Hawai'i State Plan

The Hawai'i State Plan (Chapter 226, HRS), establishes a set of goals, objectives and policies that serve as long-range guidelines for the growth and development of the State. Objectives and policies pertinent to the proposed project are as follows:

HRS § 226-21: Objectives and policies for socio-cultural advancement – education.

Objective: Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.

Policies:

- (1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.*
- (2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.*

- (8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.*

Discussion: The Ka'ū District Gym & Shelter provides educational and recreational opportunities for Ka'ū residents to enable them to fulfill their needs, responsibilities, and aspirations. The Ka'ū District Gym & Shelter will support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits. It is designed to provide an adequate and accessible educational and recreational facility to meet individual and community needs. The provision of the Ka'ū District Gym & Shelter will promote quality educational programs and academic excellence.

HRS § 226-23: Objectives and policies for socio-cultural advancement – leisure.

Objective: Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.

Policies:

- (2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.*

(3) *Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.*

(5) *Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.*

Discussion: The Ka'ū District Gym & Shelter supports planning for the State's socio-cultural advancement with regard to leisure through the provision of a quality educational and recreational facility meets community needs. The facility will contribute toward fulfilling recreational needs of the Ka'ū community and enhance the enjoyment of recreational experiences by providing a modern, up-to-date recreational facility.

HRS § 226-26: Objectives and policies for socio-cultural advancement – public safety.

Objectives: *Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:*

- (1) *Assurance of public safety and adequate protection of life and property for all people.*
- (2) *Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.*
- (3) *Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.*

Policies related to public safety:

- (1) *Ensure that public safety programs are effective and responsive to community needs.*
- (2) *Encourage increased community awareness and participation in public safety programs*

Policies related to emergency management:

- (1) *Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.*
- (2) *Enhance the coordination between emergency management programs throughout the State.*

Discussion: The Ka'ū District Gym & Shelter contributes toward the State's socio-cultural advancement with regard to public safety by providing: 1) a shelter that can withstand a Category 3 hurricane (500-year return period); 2) refuge to individuals sensitive to vog or wildfire smoke; and 3) needed congregate shelter space for victims of damage from tsunami, hurricane, earthquake, flooding, and lava flow.

5.2 COUNTY OF HAWAI'I

County-specific land use plans and ordinances pertaining to the Project include the General Plan of the County of Hawai'i, the Ka'ū Community Development Plan, the Hawai'i County Code, and the County of Hawaii Multi-Hazard Mitigation Plan.

5.2.1 County of Hawai'i General Plan

The County of Hawai'i General Plan is the policy document for the long-range comprehensive development of the Island of Hawai'i. Among the purposes of the General Plan are to guide the pattern of development in Hawai'i County and to provide the framework for regulatory decisions and capital improvement projects. The General Plan undergoes a comprehensive review every ten years, with the last review being completed in 2005.

The policy land use map, referred to as the Land Use Pattern Allocation Guide (LUPAG) Map, is intended to guide the direction and quality of future developments in a coordinated and rational manner. The Site is split-designated as Low Density Urban and Medium Density Urban (Figure 6). Generally, these designations do not apply to public facilities so the split designation does not affect the Project.

Specific General Plan goals, policies, and courses of action most applicable to the Project are discussed below.

Flooding and Other Natural Hazards

5.2 GOALS

- (a) *Protect human life.*
- (b) *Prevent damage to man-made improvements.*

5.3 POLICIES

- (l) *Continue to promote public education programs on tsunami, hurricane, storm surge, and flood hazards.*
- (q) *Consider natural hazards in all land use planning and permitting.*

Discussion: The General Plan policies emphasize mitigation of flooding hazards and are relatively weak on other natural hazards. Soon after adoption of the updated General Plan in 2005, the County worked on their multi-hazard mitigation plan, and will probably incorporate pertinent policies into the next round of the General Plan update. Meanwhile, the adopted multi-hazard mitigation plan provides comprehensive guidance relating to natural hazards. Conformance with this plan is discussed in Section 5.2.2 below.

Public Facilities

10.1.2 Goal

(a) Encourage the provision of public facilities that effectively service community and visitor needs and seek ways of improving public service through better and more functional facilities in keeping with the environmental and aesthetic concerns of the community.

10.2.2 Policies (Education)

(b) Encourage combining schoolyards with county parks and allow school facilities for afterschool use by the community for recreational, cultural, and other compatible uses.

Discussion: The relationship between Ka'ū High School/Pāhala Elementary and DPR is an exemplary model of cooperation. The recreation facilities (e.g., playfields, swimming pool) are combined on the school grounds and used jointly by the school and community. The Project furthers that cooperative relationship where the Project would be prioritized for school use during school hours and available to the community thereafter. The County Department of Parks & Recreation would assume overall management responsibilities.

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.

(j) Develop local citizen leadership and participation in recreation planning, maintenance, and programming.

12.4 STANDARDS

(b) District Parks:

- *Offer diversified types of recreational activities to an entire district that include indoor and outdoor sports. Minimum size: 10 to 30 acres.*
- *Within a district consisting of several populated communities.*
- *Facilities include: gymnasium with office, storage, restrooms, showers; a center for community and recreational programs; swimming pool (if justifiable); play area and equipment for young children; courts for basketball, tennis, and volleyball; ballfields for soccer, baseball, softball, and football; night lights; and an adequate parking area.*

Discussion: Where the existing gym does not have space for offices, storage, and locker rooms with showers, the Project will remedy these deficiencies for a district facility.

5.2.2 County of Hawaii Multi-Hazard Mitigation Plan

By Executive Order, the County of Hawaii officially recognizes the Multi-Hazard Mitigation Plan (updated April 2010) as the policy document guiding priorities and actions relating to major hazards. One of the goals of the plan is to “Provide adequate pre- and post-disaster emergency shelters to accommodate residents and visitors.” (Martin & Chock, Inc., 2010, p. xiv). Priority action #1 is to harden and retrofit critical facilities: “Conduct all hazard evaluations and develop cost-effective retrofits for priority facilities including: hurricane shelters and schools...” (Martin & Chock, Inc., 2010, p. xiv). The Project implements this priority action by skipping the evaluation (in expectation that the old buildings will not meet standards) and providing a facility that meets the hurricane shelter criteria cited in the plan (Martin & Chock, Inc., 2010, pp. 17-6 et seq.).

5.2.3 Ka'ū Community Development Plan

The County of Hawai'i General Plan authorizes Community Development Plans (CDP) to translate broad General Plan goals, policies and standards as they apply to specific geographic regions on Hawai'i Island. The CDPs are also intended to serve as a forum for community input into land use, delivery of government services, and other land use issues relating to the CDP area. The Site is located within the Ka'ū CDP planning area, for which preparation is presently ongoing.

The community profile prepared for the Ka'ū CDP recognizes Ka'ū as vulnerable to the major natural hazards. As a remote rural area, the profile implies a need for adequate sheltering capacity in order to be self-sufficient in times of disaster. The Project addresses that policy awareness.

5.2.4 County of Hawai‘i Zoning

Similar to the State Land Use Districts, the Hawai‘i County Code regulates the type and location of development permitted on the island. Hawai‘i County zoning designations, Chapter 25 HCC, are more specific in terms of describing permitted land uses. The Site is zoned RS-15 (Single-Family Residential) and O (Open). However, the Site is entirely within the RS-15 district.

The Single-Family Residential district provides for low and medium density residential use, for urban and suburban family life. Section 25-5-3(a)(12) HCC states that public uses and structures, such as Ka‘ū District Gym & Shelter, are allowed in Single-Family Residential districts provided that the Planning Director has issued plan approval for each use. Section 25-5-3 (b)(10) HCC states that schools are allowed in Single-Family Residential districts provided that a use permit is issued for each use. The Project is being proposed as a recreational and public safety facility, rather than a school; therefore, a Use Permit is not required. The height limit in the RS district is 35 feet.

The zoning code specifies parking requirements and building height limits. A parking and height variance would be needed for this Project. The parking variance would address the acceptability of the proposed parking of 159 stalls that reflects shared parking with the school and grass (unpaved) overflow parking. Due to the proposed building height of 48’, a height variance would address the acceptability of exceeding the RS height limit of 35’ (see section on view impact analysis).

5.2.5 Special Management Area

The Site is not located within the Special Management Area (SMA).

5.3 APPROVALS AND PERMITS

A listing of anticipated permits and approvals required for the Project is presented below:

Table 6: Anticipated Approvals and Permits

Permit/Approval	Responsible Agency
Chapter 343, HRS Compliance	Hawai‘i Parks and Recreation Department Office of Environmental Quality Control
National Pollutant Discharge Elimination System (NPDES) Permit	State Department of Health
Plan Approval	Hawai‘i Planning Department
Height/Parking Variance	Hawai‘i Planning Department
Grading/Building Permits	Hawai‘i Department of Public Works
Underground Injection Control Permit	State Department of Health

6 ALTERNATIVES

This section identifies and evaluates a range of alternatives that could meet the purpose and need and possibly avoid, reduce, or minimize adverse environmental effects. The reference point to compare alternatives is the “no action” alternative.

6.1 NO ACTION ALTERNATIVE

The purpose and need for the Project, as discussed in Section 2.2, include: 1) to improve the capacity and quality of athletic facilities for the school and community and 2) to provide adequate emergency shelter especially for hurricane and vog to serve the district. Under the “no action” alternative, the district population would have to rely on existing facilities. For athletic and community activities, the existing gym is too small to hold simultaneous practices, tournaments, school-wide assemblies, graduations, or other large gatherings. The school also serves as the existing emergency shelter. Although the school has not been formally evaluated for its ability to withstand hurricane forces, it is unlikely that its wooden structure built in the 1930’s meet the minimum Type B hurricane shelter criteria. There is also no adequate vog shelter in the district for the general population (Ka‘ū Hospital will soon be upgraded for vog mitigation for patients only). Ka‘ū is the most vulnerable district in the State to vog. It also has a very high percentage of post and pier homes susceptible to hurricane and earthquake damage. With “no action,” the district needs for community and emergency facilities with adequate capacity and shelter capabilities would not be met.

6.2 RENOVATION OR REPLACEMENT OF EXISTING BUILDING(S)

As an alternative to constructing a new facility, the existing gym could be renovated or replaced. The disadvantages of this alternative include: the demolition or retrofitting costs would reduce the funds available for more and better features; the available land area would limit the size of the renovated or replacement facility; the historic status of the existing gym would need to be addressed since the building is on the National Register of Historic Places. One advantage would be the existing open field remains with impacts avoided on those whose views would have been obstructed by the new building.

6.3 ALTERNATIVE SITES

Alternative locations include alternative sites within the Pāhala school grounds and alternative sites within the Ka‘ū District. There are other open areas within the Pāhala school grounds, but the available land area would limit the size comparable to the existing gym. Similar to the renovation/replacement alternative discussed above, the advantage would be the avoidance of view impacts and the continued availability of the Site for recreational use, but the disadvantage would be that the need to increase capacity would not be met.

Alternative locations within the Ka‘ū District include Nā‘ālehu and Ocean View. A gym and shelter is already proposed for Ocean View that would supplement the Project to meet the full shelter needs of the District’s existing and projected population. Both facilities are needed. The advantage of locating the Project in Pāhala over Naalehu is primarily to have the facility available for elementary, middle, and high school. Ka‘ū High School serves the entire district. Naalehu is an elementary and intermediate school. The Pāhala school buildings already serve as the District shelter, so the Project does not introduce any new traffic impacts to Pāhala as a shelter.

6.4 ALTERNATIVE DESIGNS

Pertinent impacts that could change depending on design include:

- View impacts due to building height. The building height could be lowered at the expense of the available trajectory of basketball or volleyballs, or compromised plantation roof lines;
- Architectural character. If the plantation style roof lines were eliminated for budget or other reasons (e.g., denial of height variance), the Project would not complement the existing historic school buildings;
- Balancing school and community needs within budget. The determination whether functional spaces should be designed for a recreation room, multi-purpose room, weight room, wrestling/martial arts room; and whether these rooms duplicate existing facilities at the community center or school, provide multi-purpose opportunities such as classroom space, or complement the uses of the old gym and existing room building, are questions being worked on by a multi-stakeholder user group that includes the Department of Education, County Parks & Recreation, and Civil Defense Agency;
- Vog shelter capacity. The air-conditioning and filters for the vog mitigation system are expensive. The capacity would depend on the primary use of the selected space and the relative proportion of the budget allocated to this purpose. Civil Defense is comfortable with the present design capacity for 120 persons.
- Sustainability features. Sustainability features reduce the impact in terms of energy and resource consumption, and water quality impacts (e.g., mitigation of impervious surfaces). The proposed design and current budget supports an equivalent to LEED silver. The potential to increase impacts on energy consumption and water quality increases as compromises are made in the design to fit budget constraints.

7 FINDINGS AND DETERMINATION

To determine whether the implementation of the Project may have a significant impact on the physical and human environment, all phases and expected consequences of the proposed project have been evaluated, including potential primary, secondary, short-range, long-range, and cumulative impacts. Based on this evaluation, the Proposing Agency (County of Hawai'i Department of Parks and Recreation) anticipates issuing a Finding of No Significant Impact (FONSI). The supporting rationale for this anticipated finding is presented in this chapter.

7.1 SIGNIFICANCE CRITERIA

The discussion below evaluates the significance of the Project's impacts based upon the Significance Criteria set forth in Hawaii Administrative Rules section 11-200-12.

(1) *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;*

Discussion: The Site is an open grassed field. Environmental and cultural studies conducted in and around the Site reveal the absence of any resources potentially subject to irrevocable loss as a result of construction.

(2) *Curtails the range of beneficial uses of the environment;*

Discussion: Although the recreational use of the Site as an open field will be curtailed, the Project will provide offsetting beneficial recreational uses.

(3) *Conflicts with the State's long term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;*

Discussion: The Environmental Policies enumerated in Chapter 344, HRS, and NEPA promote conservation of natural resources, and an enhanced quality of life for all citizens. The Project is not expected to significantly impact any natural resources and is expected to enhance the quality of life of Ka'ū citizens with its recreation and shelter benefits.

(4) *Substantially affects the economic or social welfare of the community or State;*

Discussion: The Project's impact on the social welfare of the community is beneficial in that it will protect lives during disaster events and enhance recreational opportunities.

(5) *Substantially affects public health;*

Discussion: The Project's recreational facilities will promote exercise and a healthy lifestyle; the shelter functions will improve public health, particularly the health of those vulnerable to vog.

(6) *Involves substantial secondary impacts, such as population changes or effects on public facilities;*

Discussion: The Project responds to an existing deficiency (recreational and shelter capacity) and does not generate or stimulate growth.

(7) *Involves a substantial degradation of environmental quality;*

Discussion: Wherever possible, green materials like recycled flooring, paints with low volatile organic compounds, solar hot water panels and photovoltaic panels will be integrated into the ultimate design of the Project. Landscaping will attempt to utilize native trees and shrubbery. No substantial environmental degradation is anticipated as a result of the Project. Also, as the Project will be in compliance with all pertinent statutes and regulations (e.g., regulations pertaining to grading), no substantial environmental degradation is anticipated.

(8) *Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;*

Discussion: The Project is not part of a larger project, nor does it commit the State or County to any other larger actions, and will not generate any additional actions having a cumulative effect on the environment.

(9) *Substantially affects a rare, threatened or endangered species or its habitat;*

Discussion: Exterior lighting mitigation measures will minimize impact on night-flying birds.

(10) *Detrimentially affects air or water quality or ambient noise levels;*

Discussion: No State or Federal air quality standards will be violated during or after the construction of the Project. The only anticipated issues related to air quality would be during construction; however, construction activities would be temporary. Long-term negative impacts related to air quality are not expected.

No State or Federal water quality standards will be violated during or after the construction of the Project; the Project will be required to comply with nonpoint source prevention measures through the NPDES permit.

Construction activities will inevitably create temporary noise impacts. If necessary, contractors will employ mitigation measures to minimize those temporary noise impacts including the use of mufflers and implementing construction curfew periods. Pursuant to Chapter 11-46, Hawai'i Administrative Rules, all construction activities must comply with all community noise controls.

Temporary noise impacts will also be generated during the course of regular operations and events. These noise disturbances are an unavoidable element of the facility usage but nonetheless will be intermittent and of short duration. The Project has been sited as far away from

neighboring residences as possible. Mitigation measures specify that operational policies not allow activities after 10:00 p.m. to curtail activity and vehicular noise in compliance with nighttime noise standards pursuant to the community noise controls.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

Discussion: The Site does not lie in an environmentally sensitive area such as a tsunami zone, geologically hazardous area, beach, erosion-prone area, estuary, freshwater or coastal waters.

(12) Substantially affects scenic vistas and view planes identified in County or State plans or studies; or,

Discussion: The Project will exceed the zoning code height limit of 35' (approximately 10' higher) and will require a height variance. However, the views of neighboring residents will not be significantly affected since their current views of the mountains or ocean are obstructed by existing school buildings or trees. The views of a few residents may be unavoidably impacted, but there are no acceptable alternatives to avoid or mitigate that impact.

(13) Requires substantial energy consumption.

Discussion: The preliminary engineering analysis finds that power is currently available in the area and the capacity can support the Project. Energy saving design elements will be integrated into building design.

7.2 ANTICIPATED DETERMINATION

Pursuant to Chapter 343, HRS, the accepting authority, who is the County of Hawai'i Department of Public Works as the Mayor's designee, anticipates issuing a Finding of No Significant Impact (FONSI) for this environmental assessment. This finding is founded on the basis of impacts and mitigation measures examined in this document, public comments received during the pre-consultation and public review phases, and analyzed under the above criteria.

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8 CONSULTATION

8.1 INDIVIDUALS AND ORGANIZATIONS CONSULTED WITH PRIOR TO THE EA PROCESS

In the course of planning for the Ka'ū District Gym & Shelter, the Project team held community meetings, pre-consultation letters were mailed to solicit comments to be addressed in the Draft EA, and several articles were published in the Ka'ū Calendar (local newspaper).

8.1.1 Pre-Consultation Letters

The Environmental Consultant mailed letters to the following individuals, community organizations, private groups, and government agencies notifying them that an EA was being prepared for the Project and soliciting any concerns or comments. The comments received and corresponding responses are reproduced in Appendix A.

State of Hawai'i

- Department of Agriculture
- Department of Accounting and General Services
- Department of Business, Economic Development & Tourism
- DBEDT - Energy Division
- DBEDT - Office of Planning
- Department of Defense
- Department of Education
- Department of Hawaiian Home Lands
- Department of Health
- Department of Human Services
- Department of Labor and Industrial Relations
- Department of Land and Natural Resources
- DLNR - Historic Preservation Division
- Department of Transportation
- Hawaii Housing Finance and Development Corporation
- Office of Hawaiian Affairs
- UH Environmental Center

Federal

- U.S. Army - Engineer Division
- U.S. Geological Survey - Hawaiian Volcano Observatory
- U.S. Fish and Wildlife Service
- U.S. National Park Service - Hawaii Volcanoes National Park
- Federal Emergency Management Agency

County of Hawai'i

- Department of Environmental Management
- Department of Parks and Recreation
- Department of Research and Development
- Department of Water Supply
- Fire Department
- Office of Housing and Community Development
- Planning Department
- Police Department
- Ka'ū Community Development Plan Steering Committee
- Civil Defense

Other

- Nā'ālehu Public Library
- UH Hilo
- Hawaii Tribune Herald
- Ka'ū Calendar
- State Senator Gilbert Kahele
- State Representative Robert Herkes
- County Council Member Brittany Smart
- Ka'ū Hawaiian Civic Club
- Ka'ū Preservation Council
- Ka'ū Chamber of Commerce
- Residents within 500 feet of the Site using mailing addresses from the County Real Property Tax office

8.1.2 Community Meetings

The County held an introductory meeting on November 15, 2011 and a two-day charrette on December 19 and 20, 2011. Meeting materials and public comments resulting from the meetings are provided in Appendix E.

November 15, 2011

The County mailed notice of this meeting to all post office boxes in Ka'ū. At this November 15 meeting, residents shared their ideas, offered suggestions, and expressed their concerns for the facility. Meeting attendees include the following:

December 19 & 20, 2011

The County mailed notice of this meeting to all post office boxes in Ka'ū. At this two-day charette, residents had the opportunity to participate in the design of the facility with the project

team. The meeting resulted in the Ka'ū Community and County agreeing the facility needed to be between 35,000 to 40,000 square feet, hold up to 1,000 people, support athletic, recreational, educational and artistic uses, and provide residents shelter from vog and hurricanes.

8.1.3 Ka'ū Calendar Newspaper Articles

The Ka'ū Calendar is a free publication that is mailed to all post office boxes in Ka'ū as well as available at various public areas. The Ka'ū Calendar is also made available online at <http://kaucalendar.com>. Several news articles regarding the Ka'ū District Gym & Shelter notified the community of the Project including the following:

- “Planning to Begin for \$17.9 Million Emergency Shelter & Gym”, November 2011
- “Public Invited Dec. 19 & 20 to Plan Pahala Gym & Shelter”, December 2011
- “New Comments on Disaster Shelter, Gym Due Jan. 10”, January 2012.

8.2 INDIVIDUALS AND ORGANIZATIONS TO BE CONSULTED DURING THE EA PROCESS

The Draft EA has been distributed to the following agencies, organizations and individuals. Comments received on the Draft EA will be included in the Final EA.

State of Hawai'i

- Department of Agriculture
- Department of Accounting and General Services
- Department of Business, Economic Development & Tourism
- DBEDT - Energy Division
- DBEDT - Office of Planning
- Department of Defense
- Department of Education
- Department of Hawaiian Home Lands
- Department of Health
- DOH – Office of Environmental Quality Control
- Department of Human Services
- Department of Labor and Industrial Relations
- Department of Land and Natural Resources
- DLNR - Historic Preservation Division
- Department of Transportation
- Hawaii Housing Finance and Development Corporation
- Office of Hawaiian Affairs
- UH Environmental Center
- State Senator Gilbert Kahele
- State Representative Robert Herkes

Federal

- U.S. Army - Engineer Division
- U.S. Geological Survey - Hawaiian Volcano Observatory
- U.S. Fish and Wildlife Service
- U.S. National Park Service - Hawaii Volcanoes National Park
- Federal Emergency Management Agency

County

- Department of Environmental Management
- Department of Parks and Recreation
- Department of Public Works
- Department of Research and Development
- Department of Water Supply
- Fire Department
- Office of Housing and Community Development
- Planning Department
- Police Department
- Ka'ū Community Development Plan Steering Committee
- Civil Defense
- Office of Aging
- County Council Member Brittany Smart

Other

- Pāhala and Nā'ālehu Public Libraries
- UH Hilo
- Hawaii Tribune Herald
- Ka'ū Calendar
- Ka'ū Hawaiian Civic Club
- Ka'ū Preservation Council
- Ka'ū Chamber of Commerce
- Ka'ū Hospital
- Ka'ū Athletic Boosters
- JN Coffee Farms
- Red Cross
- Ka'ū High and Pāhala Elementary School principal and staff
- Various Pāhala businesses
- Surrounding residents

9 REFERENCES

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APPENDIX A

Pre-Consultation Comments & Responses

PRE- CONSULTATION COMMENTS AND RESPONSES

Agencies/Organizations/Individuals	Pre-Consultation Sent	Comment Date
Department of Public Works (Accepting Authority)	Yes	-
OEQC	Yes	-
STATE		
Department of Agriculture	Yes	-
Department of Accounting and General Services	Yes	12-27-2011
DBEDT	Yes	-
DBEDT - Energy Division	Yes	-
DBEDT - Office of Planning	Yes	-
Department of Defense	Yes	02-06-2012
Department of Education	Yes	01-17-2012
Department of Hawaiian Home Lands	Yes	12-29-2012
Department of Health	Yes	-
Department of Human Services	Yes	01-05-2012
Department of Labor and Industrial Relations	Yes	12-20-2011
Department of Land and Natural Resources	Yes	-
SHPD	Yes	-
SHPD (Hawaii Island)	Yes	-
Department of Transportation	Yes	12-23-2011
HHFDC	Yes	-
Office of Hawaiian Affairs	Yes	01-05-2012
UH Environmental Center	Yes	-
FEDERAL		
U.S. Army - Engineer Division	Yes	-
U.S.G.S. - Hawaiian Volcano Observatory	Yes	-
U.S. Fish and Wildlife Service	Yes	01-11-2012
U.S. NPS - Hawaii Volcanoes National Park	Yes	01-10-2012
Federal Emergency Management Agency	Yes	01-18-2012
COUNTY		
Department of Environmental Management	Yes	12-29-2011
Department of Parks and Recreation	Yes	-
Department of Research and Development	Yes	-
Department of Water Supply	Yes	-
Fire Department	Yes	12-27-2011
Office of Housing and Community Development	Yes	-
Planning Department	Yes	01-09-2012
Police Department	Yes	12-19-2011
Ka'ū CDP Steering Committee	Yes	-
Civil Defense	Yes	-

Agencies/Organizations/Individuals	Pre-Consultation Sent	Comment Date
LIBRARIES		
Nā'ālehu Public Library	Yes	-
UH Hilo	Yes	-
NEWS MEDIA		
Hawaii Tribune Herald	Yes	-
Ka'ū Calendar	Yes	-
ELECTED OFFICIALS		
State Senator	Yes	-
State Representative	Yes	-
County Council Member	Yes	-
CITIZEN GROUPS/INDIVIDUALS		
Ka'ū Hawaiian Civic Club	Yes	-
Ka'ū Preservation Council	Yes	-
Ka'ū Chamber of Commerce	Yes	-
Ka'ū Hospital	Yes	01-16-2012
SURROUNDING LANDOWNERS 500 FT		
Earl Louis	Yes	01-08-2012
Teresa Tico	Yes	01-08-2012
John Repolgle	Yes	01-09-2012
Darcy/David Hu	Yes	01-10-2012

NEIL ABERCROMBIE
GOVERNOR



JAN S. GOUVEIA
ACTING COMPTROLLER
KERRY K. YONESHIGE
ACTING DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1351.1

DEC 27 2011

Ms. Tammy Kapali
PBR Hawaii
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Kapali:

Subject: Pre-Consultation for Ka'u District Gym and Shelter Located at
Pahala, Ka'u, Hawaii
TMK: (3) 9-6-005:008

This is in response to your letter regarding the subject project. The proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities, and we have no comments to offer at this time.

If you have any questions, please call me at 586-0400 or have your staff call Mr. David DePonte of the Public Works Division at 586-0492.

Sincerely,

A handwritten signature in black ink, appearing to read "Jan S. Gouveia".

JAN S. GOUVEIA
Acting State Comptroller

c: Mr. Jerry Watanabe, DAGS Hawaii District Office



PBR HAWAII

& ASSOCIATES, INC.

February 9, 2012

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President

R. STAN DUNCAN, ASLA
Executive Vice-President

RUSSELL Y. J. CHUNG, FASLA, LEED® AP
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VINCENT SHIGEKUNI
Vice-President

GRANT T. MURAKAMI, AICP, LEED® AP
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1001 Kamokila Boulevard
Kapolei Building, Suite 313
Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

Ms. Jan S. Gouveia, Acting State Comptroller
State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai'i 96810-0119

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Ms. Gouveia:

Thank you for your letter dated December 27, 2011 regarding our request for pre-consultation comments for the Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

We acknowledge that the Ka'ū District Gym and Shelter will not impact any of the Department of Accounting and General Services' (DAGS) projects or existing facilities and that DAGS has no comments to offer at this time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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NEIL ABERCROMBIE
GOVERNOR

MAJOR GENERAL DARRYLL D. M. WONG
DIRECTOR OF CIVIL DEFENSE

VICTOR G. GUSTAFSON
ACTING VICE DIRECTOR OF CIVIL DEFENSE



PHONE (808) 733-4300
FAX (808) 733-4287

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

February 6, 2012

Ms. Tammy Kapali, Planner
PBR Hawaii & Associates
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Kapali:

Environmental Assessment Statement Review
Ka'u District Gym and Shelter, Pahala, Ka'u Hawaii, Hawaii
TMK: (3) 9-6-005:008 (portion)

Thank you for the opportunity to comment on this development. The site of this gym is currently served by the HA804 Pahala siren. We support this project, as it provides additional shelter to Ka'u district residents during emergencies. We have no other comments at this time.

If you have any questions, please call Ms. Fay Alailima-Rose, State Civil Defense Assistant Telecommunications Officer, at (808) 733-4300, ext. 531.

Sincerely,

VICTOR G. GUSTAFSON
Interim Vice Director of Civil Defense

c: Hawaii Civil Defense



PBR HAWAII

& ASSOCIATES, INC.

February 9, 2012

PRINCIPALS

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Associate

DACHENG DONG, LEED® AP
Associate

Victor Gustafson, Interim Vice Director
State of Hawai'i
Department of Defense
Office of the Director of Civil Defense
3949 Diamond Head Road
Honolulu, Hawai'i 96816-4495

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Gustafson:

Thank you for your letter dated February 6, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we thank you for your supportive comments and note that the Project will provide additional shelter to Ka'ū residents during emergencies.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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

OFFICE OF THE SUPERINTENDENT

January 17, 2012

Ms. Tammy Kapali
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Kapali:

SUBJECT: Pre-Consultation for Ka`u District Gym and Shelter Located at Pahala
Ka`u, Hawaii, TMK: (3) 9-6-005:008 (portion)

The Department of Education (DOE) has received your pre-consultation request for the proposed Ka`u District Gym and Shelter and appreciates the opportunity to provide comments.

The DOE has concerns regarding the existing and proposed traffic circulation situation and its impact on school operations and staff. In addition, how is parking going to be managed?

Please keep us informed as this project goes forward as the DOE is already working with the County of Hawaii regarding existing and proposed plans, policies, etc.

Thank you for the opportunity to provide comments. If you have any questions, please call Tracy Okumura of the Facilities Development Branch (FDB) at 586-0721 or email at tracy_okumura@notes.k12.hi.us.

Very truly yours,

Kathryn S. Matayoshi
Superintendent

KSM:jmb

c: Randolph G. Moore, Assistant Superintendent, OSFSS
Duane Y. Kashiwai, Public Works Administrator, FDB



PBR HAWAII

& ASSOCIATES, INC.

February 9, 2012

PRINCIPALS

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Kathryn S. Matayoshi, Superintendent
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, Hawai'i 96804

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Ms. Matayoshi:

Thank you for your letter dated January 17, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

The Draft Environmental Assessment (EA) will include a transportation impact analysis report, which will contain information regarding existing conditions, near-term future conditions with the Project in place, and proposed mitigation measures.

Regarding parking, a parking variance is being sought for shared parking of the existing stalls and possible grass parking on the field.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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NEIL ABERCROMBIE
GOVERNOR
STATE OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879
HONOLULU, HAWAII 96805

ALBERT "ALAPAKI" NAHALE'A
CHAIRMAN
HAWAIIAN HOMES COMMISSION

MICHELLE K. KAUHANE
DEPUTY TO THE CHAIRMAN

M. WAI'ALEALE SARSONA
EXECUTIVE ASSISTANT

December 29, 2011

Tammy Kapali
Planner, PBR Hawaii
1001 Bishop Street, Suite 650

RE: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAII'I
TMK: (3) 9-6-005:008 (PORTION)

Aloha Ms. Kapali,

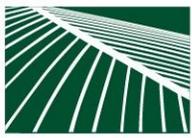
Mahalo for the opportunity to provide comments prior to the Draft Environmental Assessment (DEA) for the proposed Ka'ū District Gym and Shelter that the County of Hawai'i Department of Public Works is developing in Pāhala, Ka'ū, Hawai'i.

We have no information or comments at this time.

Please keep us informed and involved in the development of this DEA. If there are any questions, please contact Kaleo Manuel in our Planning Office at (808)620-9485 or Kaleo.L.Manuel@hawaii.gov.

Me ke aloha,

Albert "Alapaki" Nahale'a, Chairman
Hawaiian Homes Commission



PBR HAWAII
& ASSOCIATES, INC.

February 9, 2012

Alapaki Nahale'a, Chairman
State of Hawai'i
Department of Hawaiian Home Lands
Planning Office
P.O. Box 1879
Honolulu, Hawai'i 96805

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Nahale'a:

Thank you for your letter dated December 29, 2011 regarding our request for pre-consultation comments on the proposed Ka'ū District Gym and Shelter.

As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we acknowledge that you have no comments at this time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

PRINCIPALS

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President

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DACHENG DONG, LEED® AP
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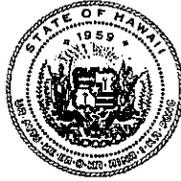
HONOLULU OFFICE

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
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Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

KAPOLEI OFFICE

1001 Kamokila Boulevard
Kapolei Building, Suite 313
Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

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

In reply, please refer to:
EMD/CWB

01017PDCL.12

January 19, 2012

Ms. Tammy Kapali
Planner
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Kapali:

**SUBJECT: Pre-Consultation for Kau District Gym and Shelter
Pahala, Kau, Island of Hawaii
TMK: (3) 9-6-005:008 (Por.)**

The Department of Health, Clean Water Branch (CWB), has reviewed the subject document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at:

<http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for an NPDES general permit coverage by submitting a Notice of Intent (NOI) form:
 - a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple

separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. This includes areas used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.

b. Hydrotesting water.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at:

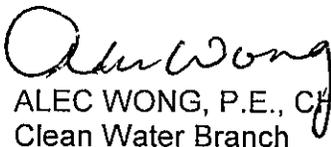
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

3. For other types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 1 or Class AA waters, an NPDES individual permit will need to be obtained. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at <http://hawaii.gov/health/environmental/water/cleanwater/forms/environmental/water/cleanwater/forms/indiv-index.html>.
4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

If you have any questions, please visit our website at:

<http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,


ALEC WONG, P.E., CHIEF
Clean Water Branch

DCL:ml

c: DOH-EPO #11-272 [via email only]



PBR HAWAII
& ASSOCIATES, INC.

February 9, 2012

Alec Wong, P.E., Chief
State of Hawai'i
Department of Health
Clean Water Branch
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Wong:

Thank you for your letter (01017PDCL.12) dated January 19, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

We have reviewed the Clean Water Branch's standard comments and the Ka'ū District Gym and Shelter will comply with all requirements of Chapters 11-54 and 11-55, Hawai'i Administrative Rules (HAR).

1. We acknowledge that Ka'ū District Gym and Shelter and its potential impacts to State Waters must meet the following criteria:
 - a. Antidegradation policy (Section 11-54-1.1, HAR)
 - b. Designated uses (Section 11-54-3, HAR), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (Sections 11-54-4 through 11-54-8, HAR)
2. We acknowledge that a National Pollutant Discharge Elimination System (NPDES) permit is required.
3. An NPDES Notice of General Permit Coverage (NGPC) for Storm Water Associated with Construction Activity will be sought instead of an NPDES individual permit.
4. We acknowledge that all discharges related to the project construction or operation activities must comply with the State's Water Quality Standards (Chapter 11-54, HAR) and permitting requirements (Chapter 11-55, HAR).

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

PRINCIPALS

THOMAS S. WITTEN, ASLA
President

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DACHENG DONG, LEED® AP
Associate

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Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

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STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Benefit, Employment & Support Services Division
820 Mililani Street, Suite 606
Honolulu, Hawaii 96813

January 5, 2012

Refer to 11-0887

Ms. Tammy Kapali
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Kapali:

Thank you for your letter that requests the Department review a Pre-Consultation for the Ka'u District Gym and Shelter Project located at Pahala, Ka'u, Hawaii. The Director of the Department of Human Services (DHS) has forwarded your letter to me for a response.

After a review of the proposed project, we do not have any recommendations or concerns to approve the project. However, we do foresee an impact in child care services in the community as the proposed project will likely increase after-school activities by school-aged children who may use the shelter, a community recreational center and the main gymnasium.

If you have any questions or need further information, please contact Mr. Robert Reed, Program Specialist, at (808) 586-0978

Sincerely,


Pankaj Bhanot
Administrator

c: Patricia McManaman, Director
County of Hawaii Department of Public Works



PBR HAWAII

& ASSOCIATES, INC.

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Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

February 9, 2012

Pankaj Bhanot, Administrator
State of Hawai'i
Department of Human Services
Benefit, Employment & Support Services Division
820 Mililani Street, Suite 606
Honolulu, Hawai'i 96813

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Bhanot:

Thank you for your letter (11-0887) dated January 5, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

We acknowledge that the Department of Human Services does not have any recommendations or concerns.

We note that the Ka'ū District Gym and Shelter will likely increase after-school activities by school-aged children which may impact existing child care services in the community.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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NEIL ABERCROMBIE
GOVERNOR



DWIGHT TAKAMINE
DIRECTOR

AUDREY HIDANO
DEPUTY DIRECTOR

**STATE OF HAWAII
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS**

830 PUNCHBOWL STREET, ROOM 321
HONOLULU, HAWAII 96813
www.hawaii.gov/labor
Phone: (808) 586-8844/Fax: (808) 586-9099

December 20, 2011

Ms. Tammy Kapali
Planner
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813

Dear Ms. Kapali:

This is in response to your letter dated December 13, 2011 requesting comments as to whether the proposed Ka'u District Gym and Shelter project may have an impact on any of our existing or proposed projects, plans, policies, or programs.

The Department of Labor and Industrial Relations has no comments and we foresee no impact on our existing or proposed programs. Should you have any questions, please call me at 586-8844.

Sincerely,

DWIGHT TAKAMINE
Director



PBR HAWAII
& ASSOCIATES, INC.

February 9, 2012

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1001 Kamokila Boulevard
Kapolei Building, Suite 313
Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

Dwight Takamine, Director
State of Hawai'i
Department of Labor and Industrial Relations
830 Punchbowl Street, Room 321
Honolulu, Hawai'i 96813

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Takamine:

Thank you for your letter dated January 5, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

We acknowledge that the Department of Labor and Industrial Relations does not foresee any impact on its existing or proposed programs.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 26, 2012

PBR Hawaii & Associates, Inc.
Attn: Tammy Kapali
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

via email: tkapali@pbrhawaii.com

Dear Ms. Kapali

SUBJECT: Pre-Consultation for Ka'u District Gym and Shelter located at Pahala, Ka'u, Island of Hawaii; TMK: (3) 9-6-005:008 por

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 (a) Engineering Division; and (b) Land Division – Hawaii District on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at 587-0417. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosures



12 JAN 19 AM 11:21 ENGINEERING



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 13, 2012

MEMORANDUM

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division**
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Hawaii District
- Historic Preservation

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

Pre-Consultation for Ka'u District Gym and Shelter

LOCATION:

Pahala, Ka'u, Island of Hawaii; TMK: (3) 9-6-005:008 por.

APPLICANT:

PBR Hawaii & Associates, Inc. on behalf of the County of Hawaii

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by January 25, 2012.

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 Darlene Nakamura at 587-0417. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:

Date: 1/24/12

cc: Central Files

RECEIVED
LAND DIVISION
2012 JAN 25 P 2:29
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/DarleneNakamura
Ref.: PreconsultationKauDistrictGym&Shelter
Hawaii.545

COMMENTS

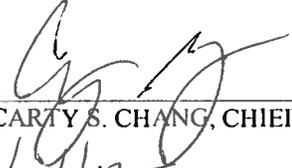
- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) **Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The Flood Insurance Program does not have any regulations for developments within Flood 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 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. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
 - () Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
 - () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
 - () Ms. Wynne Ushigome at (808) 241-4890 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 Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: 
CARTY S. CHANG, CHIEF ENGINEER

Date: 1/24/12



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

2012 JAN 19 A 11: 31

RECEIVED
LAND DIVISION
HILO, HAWAII

January 13, 2012

MEMORANDUM

TO:

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division – Hawaii District
- Historic Preservation

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

2012 JAN 23 A 10: 09

RECEIVED
LAND DIVISION

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

Pre-Consultation for Ka'u District Gym and Shelter

LOCATION:

Pahala, Ka'u, Island of Hawaii; TMK: (3) 9-6-005:008 por.

APPLICANT:

PBR Hawaii & Associates, Inc. on behalf of the County of Hawaii

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by January 25, 2012.

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 Darlene Nakamura at 587-0417. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:

Date: 1/20/12

cc: Central Files



PBR HAWAII

& ASSOCIATES, INC.

February 9, 2012

PRINCIPALS

THOMAS S. WITTEN, ASLA
President

R. STAN DUNCAN, ASLA
Executive Vice-President

RUSSELL Y. J. CHUNG, FASLA, LEED® AP
Executive Vice-President

VINCENT SHIGEKUNI
Vice-President

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SCOTT ALIKA ABRIGO, LEED® AP
Associate

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Associate

DACHENG DONG, LEED® AP
Associate

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1001 Kamokila Boulevard
Kapolei Building, Suite 313
Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

Russell Y. Tsuji, Land Administrator
State of Hawai'i
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawai'i 96809

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Tsuji:

Thank you for your letter dated January 26, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to the comments received from each Department of Land and Natural Resources division.

Engineering Division

We acknowledge that the Ka'ū District Gym and Shelter is located within Flood Zone X on the Flood Insurance Rate Map and that there are no regulations for developments within Flood Zone X. This information will be included in the Draft Environmental Assessment (EA).

Land Division – Hawai'i District

We acknowledge that the Land Division – Hawai'i District has no comments.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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NEIL ABERCROMBIE
GOVERNOR



GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JADE T. BUTAY
FORD N. FUCHIGAMI
RANDY GRUNE
JADINE URASAKI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
STP 8.0691

December 23, 2011

Ms. Tammy Kapali
Planner
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Kapali:

Subject: Kau District Gym and Shelter
Pre-Assessment for Draft Environmental Assessment (DEA)

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project.

DOT understands the Department of Public Works (DPW) proposes to develop a new gym and shelter at Kau High and Pahala Elementary School that will serve as a shelter, community recreational center and main gym for the school.

DOT offers the following comments:

1. The DEA should discuss and evaluate project's contribution to the cumulative traffic impacts on State highways facilities in the area.
2. The developer should be informed that a permit is required from DOT Highways Hawaii District Office, to transport oversized and overweight equipment/loads within the State highway facilities.

DOT appreciates the opportunity to provide comments. If there are any other questions, please contact Mr. Elton Teshima of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7978.

Very truly yours,

A handwritten signature in black ink, appearing to read "Glenn M. Okimoto".

GLENN M. OKIMOTO, Ph.D.
Director of Transportation



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& ASSOCIATES, INC.

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Fax: (808) 535-3163

February 9, 2012

Glenn Okimoto, Director
State of Hawai'i
Department of Transportation
Statewide Transportation Planning Office
200 Rodgers Boulevard
Honolulu, Hawai'i 96819-1880

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Okimoto:

Thank you for your letter dated December 23, 2011 (STP 8.0691) regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

The Draft Environmental Assessment (EA) will include a traffic study, which will contain information regarding existing traffic conditions, projected future conditions, and proposed mitigation measures.

We acknowledge that a permit is required from the DOT Highways Hawaii District Office to transport oversized and overweight equipment/loads within State highway facilities during construction.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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

HRD11/6056

January 5, 2012

Tammy Kapali, Planner
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

**Re: Pre-Draft Environmental Assessment Consultation
Recreational Center Construction
Pāhala, Ka'ū, Island of Hawai'i**

Aloha e Tammy Kapali,

The Office of Hawaiian Affairs (OHA) is in receipt of your December 13, 2011 letter requesting comments ahead of a draft environmental assessment (DEA) which will be prepared to support the construction of a recreational center (center) which is proposed by the County of Hawai'i-Department of Public Works on the Ka'ū High School and Pāhala Elementary School Campus on the Island of Hawai'i. The center will include a gymnasium and will serve as an emergency shelter when needed.

OHA has no comments to offer ahead of the DEA. Please send one electronic copy of the DEA to OHA attn: Compliance Program when it is available. Should you have any questions or concerns, please contact Keola Lindsey at 594-0244 or keolal@oha.org.

'O wau iho nō me ka 'oia'i'o,

A handwritten signature in black ink, appearing to read "Richard Pezzulo".

Richard Pezzulo
Interim Chief Executive Officer

RP:kl

C: OHA, East Hawai'i Community Outreach Coordinator



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& ASSOCIATES, INC.

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February 9, 2012

Kamana'o Crabbe, Chief Executive Officer
State of Hawai'i
Office of Hawaiian Affairs
711 Kapi'olani Boulevard, Suite 500
Honolulu, Hawai'i 96813

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Crabbe:

We received the Office of Hawaiian Affairs' (OHA) letter dated January 5, 2012 (HRD11/6056) regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we acknowledge that OHA has not comments to offer ahead of the Draft Environmental Assessment (EA).

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

Attachment

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

O:\Job28\2886.01 Kau Gym\EA\Pre-Assessment\Comments\Response\OHA.docx

From: Tim_Langer@fws.gov
Sent: Wednesday, January 11, 2012 3:45 PM
To: Tammy Kapali
Subject: Pre-consultation for Kau District Gym and Shelter Project located at Pahala, Kau, Hawaii

Dear Tammy,

Nice speaking with you today. The Service's administrative number for this project is 2012-TA-0117; please refer to this number in the Environmental Assessment and all future correspondence with the Service. Based on pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program, I produced the following list of species and designated critical habitat for the proposed action area: the endangered hawaiian hawk (*Buteo solitarius*). I recommend you incorporate appropriate Best Management Practices into your project description to avoid impacting this species. Please contact me directly if I can be of further assistance. Aloha and mahalo, Tim.

~~~~~  
Tim Langer, Ph.D.  
Branch Chief, Consultation and HCP Program  
United States Fish and Wildlife Service  
Pacific Islands Field Office  
300 Ala Moana Boulevard, Room 3-122, Box 50088  
Honolulu, Hawaii 96850

Direct line (808) 792-9462  
~~~~~



PBR HAWAII

& ASSOCIATES, INC.

February 9, 2012

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President

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Tim Langer, Branch Chief
U.S. Fish and Wildlife Service
Pacific Islands Field Office
Consultation and HCP Program
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawai'i 96850

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Langer:

Thank you for your e-mail sent on January 11, 2012 (reference #2012-TA-0117) regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

We note that according to your files, the proposed Ka'ū District Gym and Shelter site is located within designated critical habitat for the endangered Hawaiian Hawk (*Buteo solitaries*). The Draft Environmental Assessment (EA) will include discussion of Best Management Practices to minimize any impact to this species.

We appreciate your participation in the environmental review process. Your e-mail will be included in the Draft EA. We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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United States Department of the Interior



NATIONAL PARK SERVICE
Hawai'i Volcanoes National Park
Post Office Box 52
Hawaii National Park, Hawai'i 96718

IN REPLY REFER TO:
L7621

January 10, 2012

PBR Hawaii & Associates, Inc
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

Subject: Pre-consultation for Ka'ū District Gym and Shelter located at Pāhala, Ka'ū, Hawaii

Thank you for your letter dated 12/13/2011 requesting comments on the proposed development of a new gym and shelter at Ka'ū High and Pāhala Elementary School. At this time we do not foresee any impact of the proposed project on our existing projects, plans, policies, or programs.

Please keep us on the mailing list for this project and other projects in the vicinity of Hawaii Volcanoes National Park.

Sincerely,

A handwritten signature in cursive script, appearing to read "Cindy Orlando".

Cindy Orlando
Superintendent



PBR HAWAII
& ASSOCIATES, INC.

February 9, 2012

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THOMAS S. WITTEN, ASLA
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Cindy Orlando, Superintendent
U.S. Department of the Interior
National Parks Service
Hawai'i Volcanoes National Park
P.O. Box 52
Hawai'i National Park, Hawai'i 96718

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Ms. Orlando:

Thank you for your letter dated January 10, 2012 (L7621) regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

We acknowledge that Hawai'i Volcanoes National Park does not foresee any impact to its existing projects, plans, policies, or programs at this time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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FEMA

January 18, 2012

Tammy Kapali, Planner
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Kapali:

This is in response to your request for comments on correspondence regarding Pre-Consultation for Ka'U /district Gym and Shelter located at Pahala, Ka'U, Hawaii (TMK: (3) 9-6-005:008 (Portion).

Please review the current effective countywide Flood Insurance Rate Maps (FIRMs) for the County of Hawaii (Community Number 155166), Maps revised April 2, 2004. Please note that the County of Hawaii, Hawaii is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.
- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any **development** must not increase base flood elevation levels. **The term development means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

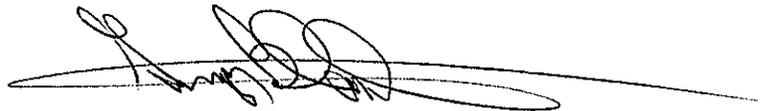
- All buildings constructed within a coastal high hazard area, (any of the “V” Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.
- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA’s Flood Map Revision Application Packages, please refer to the FEMA website at <http://www.fema.gov/business/nfip/forms.shtm>.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community’s floodplain manager for more information on local floodplain management building requirements. The Hawaii County floodplain manager can be reached by calling Carter Romero, Director and Floodplain Administrator, Department of Public Works, at (808) 961-8943.

If you have any questions or concerns, please do not hesitate to call Sarah Owen of the Mitigation staff at (510) 627-7050.

Sincerely,



Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch

cc:

Carter Romero, Director and Floodplain Administrator, Department of Public Works, County of Hawaii

Mitsunaga & Associates, Honolulu, Hawaii

Carol L. Tyau-Beam, NFIP State Coordinator, Hawaii Department of Land & Natural Resources

Sarah Owen, NFIP Planner, CFM, DHS/FEMA Region IX

Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX



PBR HAWAII & ASSOCIATES, INC.

February 9, 2012

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Gregory Blackburn, CFM Branch Chief
U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER LOCATED
AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Blackburn:

Thank you for your letter dated January 18, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

We have reviewed the current effective countywide Flood Insurance Rate Maps (FIRMs) for the County of Hawai'i. Ka'ū District Gym and Shelter is located with Zone X and will comply with all requirements as described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

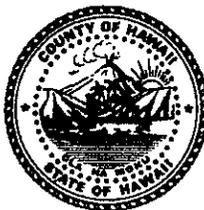
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William P. Kenoi
Mayor

William T. Takaba
Managing Director

Dora Beck, P.E.
Acting Director

Hunter Bishop
Deputy Director

County of Hawai'i

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street • Hilo, Hawai'i 96720

(808) 961-8083 • Fax (808) 961-8086

http://co.hawaii.hi.us/directory/dir_envmng.htm

December 29, 2011

Ms. Tammy Kapali
Planner
PBR HAWAII & ASSOCIATES, INC.
1001 Bishop Street, ASB Tower, Suite 650
Honolulu, HI 96813

RE: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAII
TMK: (3) 9-6-005:008 (PORTION)

Dear Ms. Kapali,

See the enclosed comments from our Wastewater Division on the subject project.

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

Sincerely,

Dora Beck, P.E.
ACTING DIRECTOR

cc: WWD

enclosure



**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WASTEWATER DIVISION**

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

MEMORANDUM

Date: December 27, 2011
To: DORA BECK, P.E., Acting Director
Via: LYLE HIROTA, P.E., Deputy WWD Chief 
From: RIZ MANGAOANG, P.E., Civil Engineer
Subject: Pre-Consultation for Ka'u District Gym and Shelter located at Pahala, Ka'u, Hawaii
TMK (3) 9-6-005:008

The County of Hawai'i Department of Environmental Management Wastewater Division (WWD) has received the request for pre-consultation regarding the proposed development of a new gymnasium and shelter for the Ka'u High and Pahala Elementary Schools. The WWD provides the following comments:

- The WWD is currently in the planning stage for closure of an existing large capacity cesspool which served as the disposal method for the sewer system which was previously owned and operated by C. Brewer in order to conform with the Underground Injection Control regulations of the Environmental Protection Agency.
- Proposed is the installation of a new sewer collection system and a treatment and disposal system providing secondary wastewater treatment. Tax Map Key 9-6-005:008 will become accessible to the public sewer system via a branch main on Hala Street and the property would be required to connect to the County sewer system in accordance with Section 21-5 of the Hawai'i County Code.

Should you have any questions, please contact me at (808) 961-8279 or you may contact Mr. Lyle Hirota at (808) 961-8333. Thank you.

cc: Lyle Hirota, P.E, Deputy WWD Chief
Merton Ogata, West Hawai'i Superintendent



PBR HAWAII
& ASSOCIATES, INC.

February 9, 2012

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Dora Beck, Acting Director
County of Hawai'i
Department of Environmental Management
25 Aupuni Street
Hilo, Hawai'i 96720

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Ms. Beck:

Thank you for your letter dated December 29, 2011 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to the comments received from the Department of Environmental Management, Wastewater Division (WWD).

We note that WWD is in the planning stage for closure of an existing large capacity cesspool and installation of a new public sewer system in Pāhala. In accordance with Section 21-5, Hawai'i County Code, Ka'ū District Gym and Shelter will connect to the public sewer system when it becomes available.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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William P. Kenoi
Mayor



Darren J. Rosario
Fire Chief

Renwick J. Victorino
Deputy Fire Chief

County of Hawai'i
HAWAII FIRE DEPARTMENT
25 Aupuni Street • Room 2501 • Hilo, Hawai'i 96720
(808) 932-2900 • Fax (808) 932-2928

December 27, 2011

PBR Hawaii
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484

**SUBJECT: PRE-CONSULTATION FOR KA'U DISTRICT GYM AND
SHELTER LOCATED AT PAHALA, KA'U HAWAII
TMK: (3) 9-6-005:008 (portion)**

In regards to the above-mentioned draft environmental assessment, the following shall be in accordance:

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

"Fire Apparatus Access Roads

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



DARREN J. ROSARIO
Fire Chief

KT:lpc



February 9, 2012

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Darren Rosario, Fire Chief
County of Hawai'i
Hawai'i Fire Department
25 Aupuni Street, Room 2501
Hilo, Hawai'i 96720

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Chief Rosario:

Thank you for your letter dated December 27, 2011 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments

Regarding roadways and access, Ka'ū District Gym and Shelter will be in accordance with UFC Section 10.207, Fire Apparatus Access Roads.

Regarding water system, Ka'ū District Gym and Shelter will be in accordance with UFC Section 10.301(c), Water Supply.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

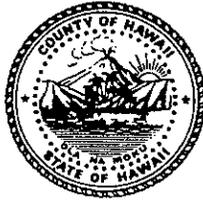
PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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William P. Kenoi
Mayor



BJ Leithead Todd
Director

Margaret K. Masunaga
Deputy

West Hawai'i Office
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January 9, 2012

Ms. Tammy Kapali
PBR Hawai'i & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

Dear Ms. Kapali:

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Project: Ka'ū District Gym and Shelter
TMK: (3) 9-6-005:008; Paauau, Ka'ū, Hawai'i

Thank you for your letter dated December 13, 2011, requesting comments from this office regarding the preparation of a Draft Environmental Assessment (DEA) for the subject project.

The County of Hawai'i Department of Public Works is proposing to develop a new gym and shelter at Ka'ū High and Pahala Elementary School on the subject property. The gym will serve as a shelter, a community recreational center, and the main gymnasium for the school.

The subject parcel is zoned RS-15 (Single-Family- Residential) and Open. The property is situated within the State Land Use Urban District. In addition, according to the County of Hawai'i General Plan 2005 (amended December 2006), the subject property is designated as Low Density Urban and Medium Density Urban by the Land Use Pattern Allocation Guide. The subject area is not within the Special Management Area (SMA).

The project site is located in the Ka'ū Community Development Plan (CDP) planning area. The Ka'ū CDP has not yet been adopted and is currently in the planning process. However, the DEA should reference the Ka'ū CDP Community Objectives adopted by

Ms. Tammy Kapali
PBR Hawai'i & Associates, Inc.
January 9, 2012
Page 2

the Steering Committee in November 2009. The Community Objectives can be found at the following web address: <http://www.hawaii-county-cdp.info/kau-cdp/plan-input/charrette/charrette-materials/Community%20Objectives.pdf>. Objectives that may be relevant to the project are:

1. Preserve and enhance viewsapes that exemplify Ka'ū's rural character;
2. Protect, restore, and enhance Ka'ū's unique cultural assets, including archeological and historic sites and historic buildings;
3. Establish and enforce standards for development and construction that reflect community values of architectural beauty and distinctiveness;
4. Encourage future settlement patterns that are safe, sustainable, and connected. They should protect people from natural hazards, and they should honor the best of Ka'ū's historical precedents; and
5. Identify viable sites for critical community infrastructure, including water, emergency services and educational facilities, to serve both youth and adults.

We have no further comments to offer, at this time. However, please keep us informed and provide our department with a copy of the Draft Environmental Assessment for our review and comment.

If you have any questions or if you need further assistance, please feel free to contact Bethany Morrison of this office at 961-8138.

Sincerely,



BJ LEITHEAD TODD
Planning Director

BJM:cs

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cc: Mr. Warren Lee
Director, Department of Public Works



PBR HAWAII

& ASSOCIATES, INC.

February 9, 2012

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BJ Leithead Todd, Director
County of Hawai'i
Planning Department
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Hilo, Hawai'i 96720

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Ms. Leithead Todd:

Thank you for your letter dated January 9, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

Thank you for confirming that the current land use designations for the Ka'ū District Gym and Shelter Site ("the Site") are: 1) RS-15 (Single-Family Residential) and open; 2) State Land Use Urban District; 3) Low Density Urban and Medium Density Urban by the Land Use Pattern Allocation Guide; and 4) not within the Special Management Area.

We acknowledge that the Site is located in the Ka'ū Community Development Plan (CDP) planning area. The Draft Environmental Assessment (EA) will include discussion on how Ka'ū District Gym and Shelter complies with the Ka'ū CDP Community Objectives.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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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

December 19, 2011

Ms. Tammy Kapali, Planner
PBR Hawaii & Associates Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813

Dear Ms. Kapali:

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PAHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

This responds to your letter dated December 13, 2011, requesting comments on the above-referenced project.

We have reviewed the project and have no comments or concerns to offer at this time.

Should you have any questions, please contact Captain Andrew Burian, Commander of the Ka'ū District, at (808) 939-2520.

Sincerely,

HARRY S. KUBOJIRI
POLICE CHIEF



PAUL H. KEALOHA JR.
ASSISTANT POLICE CHIEF

AB
RS110834



PBR HAWAII

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February 9, 2012

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Paul Kealoha Jr., Assistant Police Chief
County of Hawai'i
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349 Kapi'olani Street
Hilo, Hawai'i 96720-3998

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Chief Kealoha:

Thank you for your letter dated December 19, 2011 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we acknowledge that the Police Department has no comments or concerns to offer at this time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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From: Marilyn Harris <mharris@hhsc.org>
Sent: Monday, January 16, 2012 2:03 PM
To: Tammy Kapali
Subject: FW: Pahala Gym/Shelter

Hello Tammy,

I am the administrator at Ka'u Hospital and apologize for the delay in sending this email. I know it is overdue. I had heard from Nelson Ho that at the planning meeting held in Pahala regarding the Pahala Gym there was some mention of Ka'u Hospital providing shelter in a disaster. I am pretty sure that you would be aware that this is not the case but just in case I thought I should pass along what I shared with him.

Hospitals cannot provide shelter to the community in the event of a disaster. In emergency planning, hospitals have to focus on sheltering their own patients and the staff and possibly the families of their staff so that our inpatients continue to be safe and cared for and so that our emergency department can continue to function to provide emergency medical care. We have procedures to ensure that we have enough food/water/power/ staff etc. to meet that need but would not be able to operate if we welcomed the community. That is why the hospital doesn't store community disaster supplies not only because we sure don't have room but also so that there is no confusion as to our role.

Again, I apologize if this is old news but I felt bad having missed the meetings and then due to illness had not followed up with comments to you. Best wishes for this important project. Marilyn

Marilyn Harris
Administrator, Ka'u Hospital
1 Kamani Street
Pahala, HI 96777
808-932-4370 Fax 808-928-8980
Please note new phone number.

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February 9, 2012

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Merilyn Harris, Administrator
Ka'ū Hospital
1 Kamani Street
Pāhala, Hawai'i 96777

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Ms. Harris:

Thank you for your e-mail sent on January 16, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

Thank you for confirming that the Ka'ū Hospital does not have the capacity to provide shelter for the greater community in the event of a disaster. We understand that in the event of a natural disaster, the hospital's role is to shelter in-patients and staff and continue to provide emergency medical care.

We appreciate your participation in the environmental review process. Your e-mail will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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From: Darcy/David <kuhudd@hawaiiintel.net>
Sent: Tuesday, January 10, 2012 6:06 PM
To: Tammy Kapali
Subject: preliminary concerns about proposed gym in Pahala

Dear Ms. Kapali,

Thank you for soliciting input early in the planning process. I'd like to ask you to consider potential impacts of night lighting on nocturnal seabirds that may be transiting the area. The endangered Hawaiian Petrel, or 'Ua'u, nests in low numbers in sparsely-vegetated, upslope areas of Mauna Loa high above the Ka'u coastline. The threatened Newell's Shearwater, or 'A'o, also still nests in low numbers on Hawaii Island. This species appears to prefer heavily vegetated, 'uluhe-covered slopes, and so also may nest mauka of the coastline. The state-listed Band-rumped Storm-petrel, or 'Ake'ake, also likely nests in sparsely-vegetated habitat overlooking the Ka'u coastline.

All three of these species come and go to nesting colonies after dark. Both adults and young of these species, the latter on their first (solo) flights to the sea, can be disoriented by artificial lights and come crashing to land or circle repeatedly and become exhausted. Once on the ground, these birds are vulnerable to a variety of threats including cats, dogs, rats, and cars.

A new and significant source of light may prove particularly harmful in an area that now is generally dark. Thus, I urge you to consider ways to minimize night lighting on the new gym (including the possible use of light sensors, timers, and manual overrides, as well as considering a conservative number of lights), and to ensure any exterior lights only direct light downward (not horizontally or upwards). If there may be large expanses of windows that could allow bright interior lights to shine outward, it also maybe wise to consider drapes or other means to prevent the building from becoming a beacon to night-flying seabirds, particularly in the fall fledging season.

While these species likely exist only in sparse numbers in the area, and their exact flight paths are unknown, I understand there also may be other concerns about night lighting and its impacts to the rural character of the area, and possibly to astronomers and others who enjoy the dark night sky.

Thank you for the opportunity to express my concerns.

Aloha,
Darcy Hu
Hilo, Hawaii



PBR HAWAII

& ASSOCIATES, INC.

February 9, 2012

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DACHENG DONG, LEED® AP
Associate

Darcy Hu
36 Aloalo Street
Hilo, Hawai'i 96720

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Ms. Hu:

Thank you for your e-mail dated January 10, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works (DPW), we are responding to your comments.

The Draft Environmental Assessment (EA) will address issues regarding native birds that may traverse the area. The Draft EA will also include discussion on lighting.

We appreciate your participation in the environmental review process. Your e-mail will be included in the Draft EA.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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From: earl@kaupreservation.org
Sent: Sunday, January 08, 2012 10:31 PM
To: Tammy Kapali

Earl Louis
P.O. Box 383
Pahala, Hawai`i 96777

Attn: Tammy Kapali
1001 Bishop Street, Suite 650
Honolulu, Hawai`i 96813-3484

Re: Comments on the Ka`u District Gym and Shelter located at Pahala, Ka`u,
Hawai`i
TMK: (3) 9-6-005:008 (PORTION)

Aloha Tammy,

I live at the residence of the A K Kealamakia family trust in Pahala, Ka`u Hawai`i. This proposal of the dev of the new shelter and gym on TMK: (3) 9-6-005:008 (PORTION). I live right across of this proposed development. As a resident of 37 years, I feel that this structure would block the view of the hillside of Makanau and Pu`u Enuhe, the hills above Punalu`u. As for the EIS, I look at the situation that as a concerned resident, the old gym should be redone.

To build a shelter on school premises, you are evacuating all types of people here. How can you combine homeless people and children in the same place? The population of Pahala is 1,300 people, Ocean View has 6,000 people there and combining with Mark Twain, Green Sands and Waiohinu another 3,000 people. The town of Na`alehu another 800 people would come in.

The shelter should be built near where the population of people are. The halfway mark of Ka`u is Na`alehu and Waiohinu areas.

You are proposing this development, and lava zone 2 in Ocean View, you would bring in 6,000 people to Pahala evacuated, adding on another 6,000 living across the street from me. How can I protect my property when you are bringing in more people here. The impact is great. It is 40 miles away to Ocean View, Pahala is isolated. I would love to have a shelter but you are wasting \$20 million of our taxpayer's monies. The State and County should plan better, 6,000 outsiders to be placed into a camp in Pahala With all the land in Ka`u, you have that and the Na`alehu police station that you can utilize. A evacuation center in the middle of Pahala is not appropriate. Mahalo for listening to my comments, feel free to contact me.

Aloha Pumehana,
Earl Louis
Careaker resident



PBR HAWAII

& ASSOCIATES, INC.

February 9, 2012

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Earl Louis
P.O. Box 383
Pāhala, Hawai'i 96777

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAII
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Louis:

Thank you for your e-mail dated January 8, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

The Draft Environmental Assessment (EA) will include a visual analysis for the Ka'ū District Gym and Shelter.

Regarding the location of the Ka'ū District Gym and Shelter, alternative sites were analyzed which include Nā'ālehu and Ocean View. A gym and shelter is already proposed for Ocean View that would supplement the Project to meet the full shelter needs of the District's existing and projected population.

We appreciate your participation in the environmental review process. Your e-mail will be included in the Draft EA.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

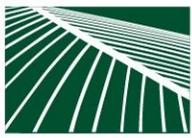
cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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From: John R. Replogle <jreplogle@TNC.ORG>
Sent: Monday, January 09, 2012 4:55 PM
To: Tammy Kapali
Subject: Lihgting at Ka`u Gymnasium Coment

Hello Tammy, I would like to express concern about night lights in Ka`u. 1) The U`au /petral needs good dark night sky for its survival. This bird has been pushed to endangered species status as a result of urban sprawl. I would propose that the lights for the gym and it's parking area only be in use when the facility is in use. (not on all the time) There of course could be smaller security lighting around the building however [All Lights Should Be On Motion Sensor Technology]. When there is an event at the Gym the all the Lights could be turned on but still be motion sensor operated. It would also be excellent if all lights could be solar served with panals.
Thank you for this opportunity to share my thoughts with you.

Yours Truly,
John Replogle
PoBox 1152
Naalehu,HI. 96772
808-936-7161



PBR HAWAII
& ASSOCIATES, INC.

February 9, 2012

PRINCIPALS

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Associate

John Replogle
P.O. Box 1152
Nā'ālehu, Hawai'i 96772

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAII
TMK: (3) 9-6-005:008 (PORTION)**

Dear Mr. Replogle:

Thank you for your e-mail dated January 9, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

The Draft Environmental Assessment (EA) will address issues regarding lighting. The design of the building will specify minimal shielded security lighting. All other exterior lighting would be turned on only as needed and designed in accordance with the County's exterior lighting standards.

We appreciate your participation in the environmental review process. Your e-mail will be included in the Draft EA.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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Kapolei, Hawai'i 96707-2005
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Fax: (808) 535-3163

From: teresa tico <haenagirl@gmail.com>
Sent: Sunday, January 08, 2012 4:21 PM
To: Tammy Kapali
Subject: Ka'u Gym and Shelter

Aloha,

I am a Pahala homeowner and received your December 27, 2011, letter regarding the new gym and shelter at Ka'u High and Pahala Elementary School. I am emailing my comments. First, I understand that this is an enormous building and will require considerable parking. As long as the architecture reflects the plantation style of Pahala and the building is painted a neutral color that blends into the environment, I have no problem with the gym. Also, I hope the gym will serve as a shelter during Vog alerts for residents who are unable to drive and leave the town, or others who wish to stay in town. Hopefully, the parking lot can be minimized as it will compromise the rural character of the school and community. Remember the old Joni Mitchell song, "They paved paradise and put up a parking lot." Well, once a large area is paved for parking, it will never go back to its original rural look, so let's make sure the parking lot is not obtrusive. My biggest concern, however, is with LIGHTING. I recently saw a very informative film about light pollution of our night skies called "The City Dark." Please see this movie before you make any decisions about lighting. It is a documentary about light pollution and the disappearing night sky, and shows all the ways that we can reduce light pollution by using new strategies and technologies that innovative designers and architects all over the world are embracing today. As you know, or should know, Pahala is famous for its night skies. Many astronomers come to Pahala to observe meteor showers and other celestial phenomena. It would be inexcusable if the lights for this new structure do not incorporate the new green technology for lighting streets and towns, such as "cut-off" lights that direct the light downwards, to the ground, where you actually need it, rather than up into the sky where it will disrupt the sleep of nearby residents, pollute the night sky, and cost the State (and therefore us, the taxpayers) a lot of money to operate. The new green lighting technology is safe, sound, cost effective, and proven to work as well, if not better, than, our wasteful "stadium" lights that light up the sky. Please consider the alternatives. They will help preserve and protect Pahala's unique, historic, and rural character.

Mahalo, Teresa Tico

Attorney/Film producer



PBR HAWAII & ASSOCIATES, INC.

February 9, 2012

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Associate

Teresa Tico
via email: haenagirl@gmail.com

**SUBJECT: PRE-CONSULTATION FOR KA'Ū DISTRICT GYM AND SHELTER
LOCATED AT PĀHALA, KA'Ū, HAWAI'I
TMK: (3) 9-6-005:008 (PORTION)**

Dear Ms. Tico:

Thank you for your e-mail dated January 8, 2012 regarding the pre-consultation for the proposed Ka'ū District Gym and Shelter. As the planning consultant for the proposing agency, County of Hawai'i Department of Public Works, we are responding to your comments.

The Draft Environmental Assessment (EA) will address issues regarding lighting. The design of the Project will specify minimal shielded security lighting. All other exterior lighting would be turned on only as needed and designed in accordance with the County's exterior lighting standards.

We appreciate your participation in the environmental review process. Your e-mail will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII

Tammy Kapali
Planner

cc: Mitsunaga & Associates
County of Hawai'i Department of Public Works

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Tel: (808) 521-5631
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APPENDIX B

Engineering Report

Preliminary Engineering Basis of Design

Civil Engineering

Electrical Engineering

Geotechnical

CIVIL ENGINEERING

Mitsunaga & Associates, Inc.

February 2012

CIVIL DESIGN

A. Site Accessibility and Parking

The new Ka'ū District Gym & Shelter will be located within the Pahala Elementary School and Ka'ū High School campus on the Island of Hawai'i (TMK: (3) 9-6-05: 008 & 039). The proposed facility has an estimated limits of grading area of 4.3 acres.



The new facility will include approximately 1,044 bleacher seats, locker rooms, offices, restrooms, concession area with kitchen/prep area, storage areas, recreation room, and multi-purpose room. In addition, new utilities will be provided as part of the project.

The project will comply with Americans with Disabilities (ADA) Guidelines. Final plans will be submitted to the Disability and Communication Access Board (DCAB) for ADA review and compliance.

B. Grading and Drainage

The grading of the 4.3-acre area will be in conformance with the Hawai'i County Grading Ordinance and the recommendations of the geotechnical engineer. On-site fill will be used wherever necessary, fill slopes will not exceed 2:1. Erosion and dust control will adhere to the Erosion Control Plan provided by the engineer and approved by the County of Hawai'i.

The grading will follow Best Management Practices (BMP) as prescribed in the Nationwide Pollution Discharge Elimination System (NPDES) Permit. The contractor will submit a site specific construction BMP Plan to the State of Hawai ' Department of Health before grading commences.

The project storm drainage system will be designed to comply with the latest County of Hawai ' i *Storm Drainage Standards* and *Standard Details for Public Works Construction*. The on-site drainage system will be designed for a 10-year recurrence interval and will consist of drain inlets and drywells. There is no existing municipal drainage system. Therefore, all storm drainage will be directed to drywell sumps, which will percolate into the ground.

The proposed building will have roof drains connecting to the new subsurface drainage system. Existing drainage patterns will be maintained, as much as possible, runoff will sheet flow across the site to landscaped areas, or to proposed drainage structures. Building finished floors will be higher than the surrounding grades and runoff will be directed away from the buildings.

The project site is located in Zone X – Areas determined to be outside 500-year flood plain as determined by the Federal Emergency Management Agency (FIRM Map 1551661725C, dated September 16, 1988).

C. Water System

The potable water system will comply with the current *Water System Standards* and *Standard Details for Water System Construction*, Board of Water Supply. An existing 6" water line that runs along Kamani Street and through the school's property will provide service for the new facility's potable water supply and fire protection. A new water meter and water line will provide domestic service to the building, and a new 6" water meter and 6" water line will provide water for the fire sprinklers. Potable water laterals will fulfill all mechanical requirements. Fire hydrants will be accessible on-site, new and existing, in order to meet the Hawai ' i County Fire Department's coverage requirement. The static water pressure at the school site is 96 psi, as determined by a static pressure test from the 1146 service zone tank. See mechanical design for the estimated potable design water demand for the proposed building.

The estimated potable water demands, based on Board of Water Planning Guidelines, for the proposed building are (see Appendix for calculation):

Fixture Units:	203 fu
Flow Volume:	92 gpm
Average Daily Demand:	62,640 gpd (43.50 gpm)
Maximum Daily Demand:	93,960 gpd (65.25 gpm)
Peak Hour Demand:	313,200 gpd (217.50 gpm)
Fire Flow Requirement:	2,000 gpm

D. Sewer System

The sewer system design will comply with Hawaii Administrative Rules (HAR) Title 11, Chapter 62.

There is no existing municipal sewer system. A new septic tank and leach field will be added on-site for treatment of the waste created by the occupants of the new facility.

E. Environmental Permits and Controls

Applicable Regulations

In order to provide for abatement and control of environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, the work performed will be required to comply with the intent of the applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement, including, but not limited to the following regulations:

1. State of Hawaii Department of Health, Administrative Rules, Chapter 55, WATER POLLUTION CONTROL: Chapter 54, WATER QUALITY STANDARDS.
2. State of Hawaii Department of Health, Administrative Rules, Chapter 59, AMBIENT AIR QUALITY: Chapter 60, AIR POLLUTION CONTROL LAW.
3. State of Hawaii Department of Health, Administrative Rules, Chapter 44A, VEHICULAR NOISE CONTROL
4. Erosion and Sedimentation Control Standards and Guidelines, Department of Public Works, County of Hawaii

Permits

The Contractor will be required to comply with the following conditions and requirements of the NPDES Permit for Discharges of Storm Water Associated with Construction Activity from the State Department of Health (Notice of Intent, NOI Form C) as needed and complete any information required therein to effectuate the permit:

- a. HAR Chapter 11-55, Chapter C, NPDES General Permit Authorizing Discharges of Storm Water Associated with Construction Activities;
- b. HAR Chapter 11-55, Appendix A, Department of Health Standard General Permit Conditions;
- c. HAR Chapter 11-55-34.04(a), 11-55-34.07, 11-55-34.11, 11-55-34.12, and any other applicable sections of HAR Chapter 11-55.

Best Management Practices (BMP) Plan

A BMP will be included and implemented as part of the NPDES requirements and consists of, but not be limited to, the application of the following mitigation and/or corrective measures by the Contractor:

- a. Properly controlling fugitive dust from entering State waters.
- b. Wash-out of concrete trucks will be done in such a way (preferably off-site) as to ensure that neither wastewater nor surplus concrete enters State Waters.
- c. Construction of berms, sandbags, filter fences, catchments, etc., as needed to contain/filter storm water runoff.
- d. If during construction, water quality parameters exceed respective State standards, all construction activities that were identified as contributing to water

quality degradation shall be stopped immediately. The causes shall be established, and if related to construction activity, remedial action for the non-compliance should be taken to fix the problem prior to commencing work.

- e. Other measures as required to prevent pollution of State waters as recommended in the Best Management Practices Manual for Construction Sites.

References:

1. *Water System Standards*. Board of Water Supply, City and County of Honolulu, 2002.
2. *Design Standards of the Department of Wastewater Management, Volume I*. City and County of Honolulu, July 1993.
3. *Storm Drainage Standards*. Department of Public Works, County of Hawaii ;iOctober 1970.
4. *Erosion and Sedimentation Control Standards and Guidelines*, Department of Public Works, County of Hawaii ;i
5. *Hawai 'County Code*. Department of Public Works, County of Hawaii ;i June 2005.

APPENDIX

Water System Calculations

Total f/u count = 203 f/u

Total flow volume = 92 gpm

School, Park Use:

4,000 gallons / acre or 60 gallons / person (Table 100-18)

Project Development Area = 4.31 acres

Occupant Units = 1,044 persons

Average Daily Demand: 4,000 gpd/ac. x 4.31 ac. = 17,240 gpd
Or 1,044 persons x 60 gallons/person = **62,640 gpd**

Maximum Daily Demand: 1.5 x 62,640 gpd = **93,960 gpd** (Table 100-20)

Peak Hour Demand: 5.0 x 62,640 gpd = **313,200 gpd** (Table 100-20)

Fire Flow Requirement: 2000 gpm for 2 hour duration

Total Fire Flow: 2000 gpm x 2 hrs x 60 min/hr = **240,000 gallons**

Pipeline Sizing (Fire line): Provide required fire flow at a minimum of 20 psi residual pressure at fire hydrants.

Fire Hydrant Spacing: 300 feet maximum for school and community center

ELECTRICAL ENGINEERING

Mitsunaga & Associates, Inc.

February 2012

February 6, 2012

ELECTRICAL BASIS OF DESIGN

1. Design References
 - a. National Electrical Code (NEC) NFPA 70-2008
 - b. Life Safety Code, NFPA 101-1997
 - c. Illuminating Engineering Society of North America (IESNA) Lighting Handbook, 1993
 - d. Illuminating Engineering Society of North America (IESNA) Sports Lighting, RP-6-88
 - e. Hawaii Model Energy Code. July 1993

2. Exterior Primary Electrical Distribution System
 - a. Hawaii Electric Light Company (HELCO) currently has two overhead circuits in the vicinity of the new project. There is a 4KV system along Puahala Street and a 12KV system on Hapu Street. HELCO has determined the 4KV system cannot accommodate the new building load. Therefore, the overhead distribution system to serve our new buildings will come from the 12KV Pahala substation. The service will be tapped from Hapu Street. The primary overhead system on Hapu Street consists of a three phase 12.47KV system that serves the baseball field. Photo 1 shows Pole 1 on Hapu Street where the overhead lines would be extended to our new buildings.



Photo 1: Pole 1 on Hapu Street

- b. The overhead extension from Hapu Street would consist of approximately seven new utility poles and terminate with either a new three phase transformer bank on

the last pole or pad mounted transformer. The secondary routed underground to the new Gym's electrical room. See attached site plan E-1.

3. Exterior Communication System

- a. The existing telephone and cable television systems are routed overhead. Photo 1 shows the overhead communications below the primary electrical system. The telephone and cable television service would be connected to the overhead poles from Hapu Street and extended to the new buildings. The communication system would be routed underground at the last pole and terminated in New Gym's electrical room.

4. Exterior Parking Lot Lighting

- a. The new and existing parking lot around the project will be illuminated with energy efficient low pressure sodium luminaires that will be selected to match the existing luminaires in front of the Library. Photo 2 shows the existing luminaires.



Photo 2: Existing Luminaires by the Library

5. Interior Wiring System

- a. The new overhead secondary service will be routed underground to the New Gym's electrical room. The electrical room will consist of a HELCO meter with current transformers, main circuit breaker, main distribution panelboard, telephone cabinet and cable television cabinet.
- b. Secondary power will be distributed at 208Y/120V, three phase, four wire, 60 hertz.
- c. Electrical wiring system will consist of insulated copper conductors in raceways.
- d. Raceways will consist of galvanized rigid steel conduits for all exposed work. Electrical Metallic Tubing (EMT) will be permitted above grade and within walls.

and ceilings spaces. Polyvinyl Chloride (PVC) conduits will be used for underground installations.

- e. Electrical equipment enclosures will be NEMA Type 1 for interior locations and NEMA 3R for exterior locations

6. Switchboards and Panelboards

- a. Switchboards and panelboards will have copper buss.
- b. Switchboard circuit breakers will be of the insulated case type. Switchboard feeder circuit breakers and all circuit breakers within panelboards will be equipped with bolt-on, molded-case circuit breakers.
- c. Switchboard and panelboards will be equipped with separate ground busses. Isolated ground busses will be provided where required.

7. Receptacles

- a. Convenience receptacles will be provided throughout the facilities. Each habitable room will have a minimum of one receptacle.
- b. Ground Fault Circuit Interrupter (GFCI) receptacles will be provided at countertops with sinks, toilets, and exterior walls throughout the facility.
- c. All exterior receptacles will be provided with lockable weatherproof polycarbonate covers.

8. Interior Lighting

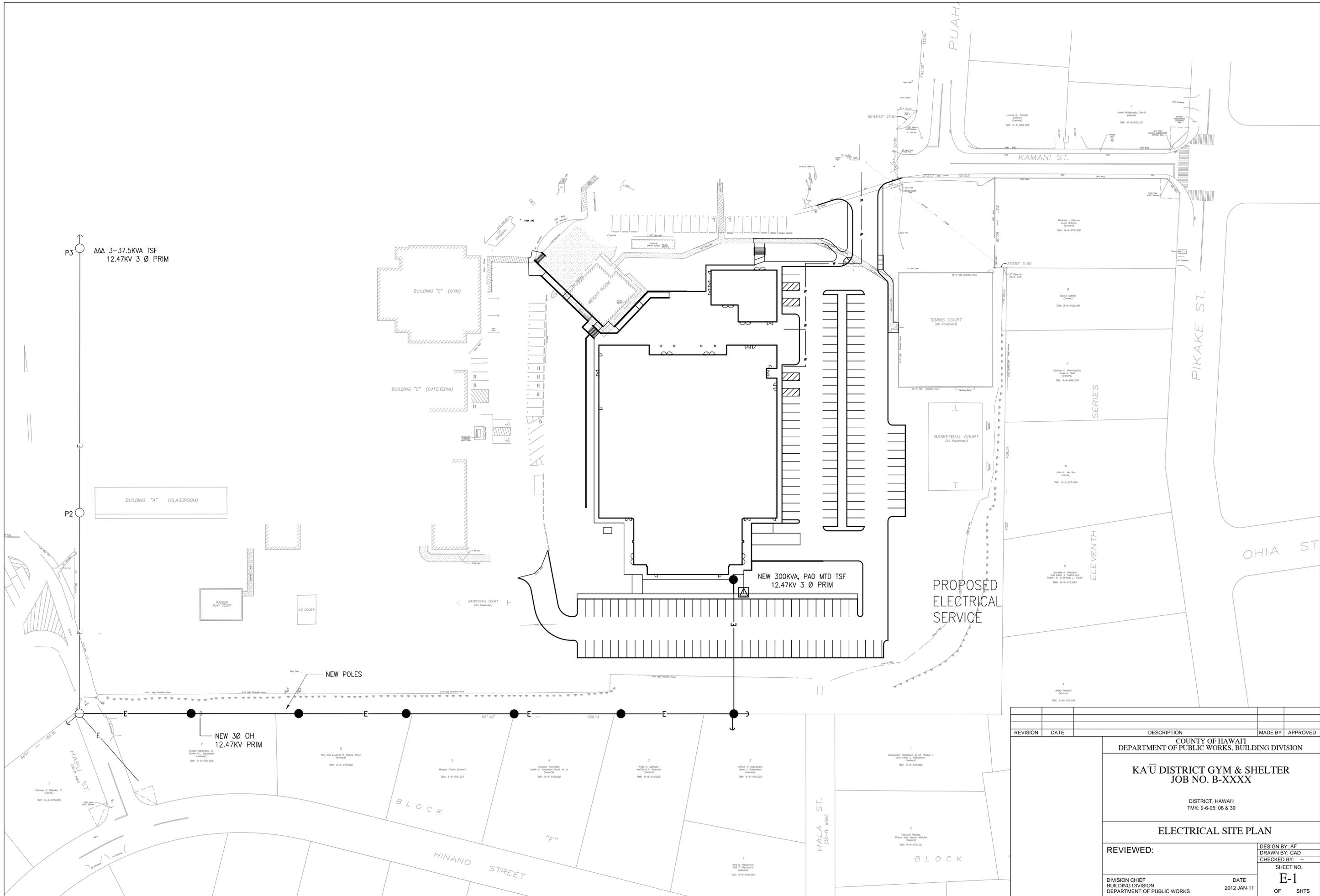
- a. Target footcandle levels will be as recommended by the IESNA Lighting Handbook. The following footcandle lighting levels will be used.

Room Usage	Design Illumination Levels (Maintained Average Footcandles)
Conference Rooms	50
Offices	50
Lobby/Waiting	30
Restrooms	20
Maintenance/Custodial	20
Kitchen/Concession	50
Locker Room	20
Gym Court	50

- b. General interior illumination will be provided by ceiling surface and/or recessed energy efficient fluorescent luminaires utilizing T-8 lamps, electronic ballasts, and A-12 acrylic prismatic lens.
- c. Multi-level and/or zone switching will be provided in large rooms for energy conservation and selectivity for task illumination. Occupancy sensors will be provided in offices and conference rooms to meet energy efficiency standards required by the Hawaii Model Energy Code.
- d. Illuminated signs will be provided for all emergency exits and exit passageways as required by NFPA 101, Life Safety Code.

- e. Emergency lighting will be provided in conformance with NFPA 101, Life Safety Code. Emergency lighting will utilize integral battery backup modules within selected luminaires.
9. Interior Telephone Distribution System
- a. Interior telephone distribution system will be provided throughout the facility. Telephone equipment, instruments, interior cabling and terminations to be provided by Hawaiian Telcom or Hawaii County vendor.
 - b. Telephone distribution raceway system will consists of empty raceways with pullstrings, outlet boxes with blank device cover plates, pullboxes, and backboards with connection to the building's electrical grounding system.
 - c. Telephone raceways will be ¾" minimum diameter conduits. Convenience receptacles will be provided at telephone backboards.
10. Computer/Data Networking Raceway System
- a. Data raceway systems will be provided for the project. Computers and networking equipment, cable, jack outlets, and terminations to be provided by Hawaii County.
 - b. Interior data raceway systems will consists of empty raceways with pullstring, outlet boxes with blank device cover plates, pullboxes, backboards and connections to the building's electrical grounding system.
 - c. Data raceways will be 1" minimum diameter conduits.
 - d. Data backboards will be provided with convenience receptacles.
11. Cable Television (CATV) Raceway System
- a. CATV raceway system will be provided for the project. CATV equipment, cables, jacks, and terminations to be provided by the CATV vendor.
 - b. Interior CATV raceway system will consists of empty raceways with pullstring, outlet boxes with blank device cover plates, pullboxes, backboard, and building's electrical grounding system.
 - c. CATV raceways will be ¾" minimum diameter.
 - d. CATV backboards will be provided with convenience receptacles.
12. Fire Alarm System
- a. An independent fire alarm system will be provided for the new buildings. Fire alarm equipment will consists of a main fire alarm control panel (FACP), pull stations, audio and visual signaling devices, raceways and wiring. Additional automatic initiation devices such as smoke and heat detectors will be provided where required.
 - b. A separate Fire and Voice Control/Annunciator Panel will be provided for the gym court area. This system will be of the pre-signal type and utilize voice evacuation signaling devices with visual strobe flashers to conform to codes related to large assembly facilities.
13. Grounding System
- a. All exterior luminaire poles will be grounded.

- b. A separate ground bus will be provided within switchboard and panelboards. Isolated ground busses will be provided where required.
- c. Bare copper ground wires, bonded to the building grounding system will be provided in each telephone, CATV, and data backboard location. Ground conductors will consists of 6 foot coils of bare #6 copper ground wires. Final termination to communication equipment by respective vendor.



REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

COUNTY OF HAWAII
DEPARTMENT OF PUBLIC WORKS, BUILDING DIVISION

KA'Ū DISTRICT GYM & SHELTER
JOB NO. B-XXXX

DISTRICT, HAWAII
TMK: 9-6-05: 08 & 39

ELECTRICAL SITE PLAN

REVIEWED:	DESIGN BY: AF
	DRAWN BY: CAD
	CHECKED BY: --
	SHEET NO.
	E-1
	OF SHTS

DIVISION CHIEF BUILDING DIVISION DEPARTMENT OF PUBLIC WORKS	DATE 2012 JAN-11
---	---------------------

GEOTECHNICAL ANALYSIS

Hirata & Associates, Inc.

February 2012



Hirata & Associates

Geotechnical
Engineering

Hirata & Associates, Inc.

99-1433 Koaha Pl
Aiea, HI 96701
tel 808.486.0787
fax 808.486.0870

MEMORANDUM

February 6, 2012
W.O. 11-5268

TO: Chad McDonald
Mitsunaga & Associates, Inc.
Email: chadm@mitsdesign.com

FROM: Con Truong

RE: Preliminary Recommendations
Ka'u Gymnasium
Pahala, Ka'u, Hawaii

Our fieldwork for the subject project was completed on January 25, 2012 by drilling 9 test borings to depths ranging from about 14.5 to 24.5 feet. In addition, percolation tests were performed in 6 test holes drilled to depths of about 5 feet. The surface soil at the site was classified as brown clayey silt. The soil was in a firm to medium stiff condition and appeared to be derived from volcanic ash. Volcanic ash is characterized by high moisture content, poor workability, and moderate to high compressibility.

Underlying the surface soil at depths ranging from about 6 inches to 4.5 feet was gray, slight to moderately weathered basalt. The basalt was in a hard condition extending down to the maximum depths drilled. A cavity was encountered within the basalt stratum in one boring at depths of about 11 to 14 feet.

Neither groundwater nor seepage water was encountered in the borings.

Preliminary Recommendations

Due to its moderate to high compressibility and poor workability, the surface clayey silt/volcanic ash within the building and pavement areas should be completely removed and, if required, replaced with imported non-expansive, granular structural fill. Since lava tubes, cavities, and voids are commonly encountered in basalt formation, we therefore recommend that the site be proofrolled prior to fill placement. Yielding areas or cavities disclosed during the proofrolling operations should be exposed and properly backfilled with compacted fill or controlled low strength material (CLSM).

To provide a more uniform support, all foundations for the structures should be extended through the new fill and founded directly on the basalt. The following parameters may be used for preliminary design.

- Allowable bearing value = 6,000 psf
- Coefficient of friction = 0.45
- Passive earth pressure = 200 pcf for surface clayey silt
- Passive earth pressure = 400 pcf for basalt
- Active earth pressure = 40 and 55 for freestanding and restrained condition.
- Building Slabs-on-grade will require only the standard 4-inch gravel cushion.

Probing and Grouting - A cavity was encountered in the basalt formation in one boring. As a result, probing and grouting of the foundations are recommended. The bottom of all wall and column footing excavations should be probed to depths at least twice the footing width or to a minimum of 10 feet, measured from the bottom of footing elevation. All probed holes should be filled with sand-cement grout.

Percolation Test Results - As part of our field work, percolation tests were performed in six test holes drilled throughout the project site. All test holes were about 4 inches in diameter and 5 feet deep. Due to the shallow depths to basalt, all tests were performed in the basalt layer. In general, percolation rate of the basalt depends on the degree of fractures of the basalt rock, as well as the amount of clinker pockets and cavities within the basalt layer. As a result, the percolation rate could vary significantly from test hole to test hole. The following is a summary of our test results.

Test Hole P1, Percolation Rated = 8.6 minutes/inch
Test Hole P2, Percolation Rated = 18.5 minutes/inch
Test Hole P3, Percolation Rated = 23.3 minutes/inch
Test Hole P4, Percolation Rated = 3.7 minutes/inch
Test Hole P5, Percolation Rated = 16.6 minutes/inch
Test Hole P6, Percolation Rated = 8.4 minutes/inch

Please feel free to call if you have any questions or need any additional information.

APPENDIX C

Cultural Impact Assessment

**A CULTURAL IMPACT ASSESSMENT OF
29.926 ACRES AT THE KA‘Ū HIGH SCHOOL AND PĀHALA
ELEMENTARY SCHOOL CAMPUS IN PĀHALA, PĀ‘AU‘AU 1
AHUPUA‘A, KA‘Ū DISTRICT, ISLAND OF HAWAI‘I
[TMK: (3) 9-6-005:008 and 039]**

Prepared By:
Glenn G. Escott, M.A.
and
Robert L. Spear, Ph.D.

DRAFT Report
February 2012

Prepared For:
PBR Hawaii & Associates
1001 Bishop Street, Suite 650
Honolulu, HI 96813

TABLE OF CONTENTS

TABLE OF CONTENTS.....	II
LIST OF FIGURES	II
INTRODUCTION	1
METHODOLOGY	6
ARCHIVAL RESEARCH.....	8
INTERVIEW METHODOLOGY	8
PROJECT AREA AND VICINITY	9
CULTURAL HISTORICAL CONTEXT.....	9
WAHI PANA (LEGENDARY PLACES).....	10
PREHISTORIC AND HISTORIC ACCOUNTS OF KA‘Ū.....	10
POST-CONTACT.....	12
THE SUGAR INDUSTRY.....	14
THE HISTORY OF SUGAR IN KA‘Ū.....	16
CULTURAL INFORMANT INTERVIEWS.....	19
SUMMARY.....	19
CIA INQUIRY RESPONSE.....	20
CULTURAL ASSESSMEMNT.....	21
REFERENCES CITED.....	22

LIST OF FIGURES

Figure 1: Hawai‘i Island Map Showing Project Area Location.	1
Figure 2: USGS TOPO Map Showing Project Area Location (Yellow) and Proposed Construction Site (Orange).	2
Figure 3: Location of Project Parcel (Yellow) and Proposed Construction Site (Orange) on TMK: (3) 9-6-005 Map.....	3
Figure 4: Aerial Photograph of Project Area and Proposed Construction Site (Orange).	4
Figure 5: Hawai‘i Island Trail Systems.	11
Figure 6: A Whaling Trypot Typical of Those Used For Making Raw Sugar.	16
Figure 7: Photo of Honu‘apo Wharf.	18

INTRODUCTION

At the request of PBR Hawaii and Associates, Scientific Consultant Services, Inc. (SCS) conducted a Cultural Impact Assessment, of a 36.368-acre area [TMK: (3) 9-6-005:008 and 039] at the Ka'ū High School and Pāhala Elementary School Campus in Pāhala, Pā'au'au 1st Ahupua'a, Ka'ū District, Hawai'i Island (Figure 1, 2, 3, and 4). The parcel extends from 900ft (275m) to 1,060ft (325m) above mean sea level (amsl). The southeast corner of the campus is being considered for the construction of a new gymnasium, and is currently the location of tennis and basketball courts, as well as playing fields.

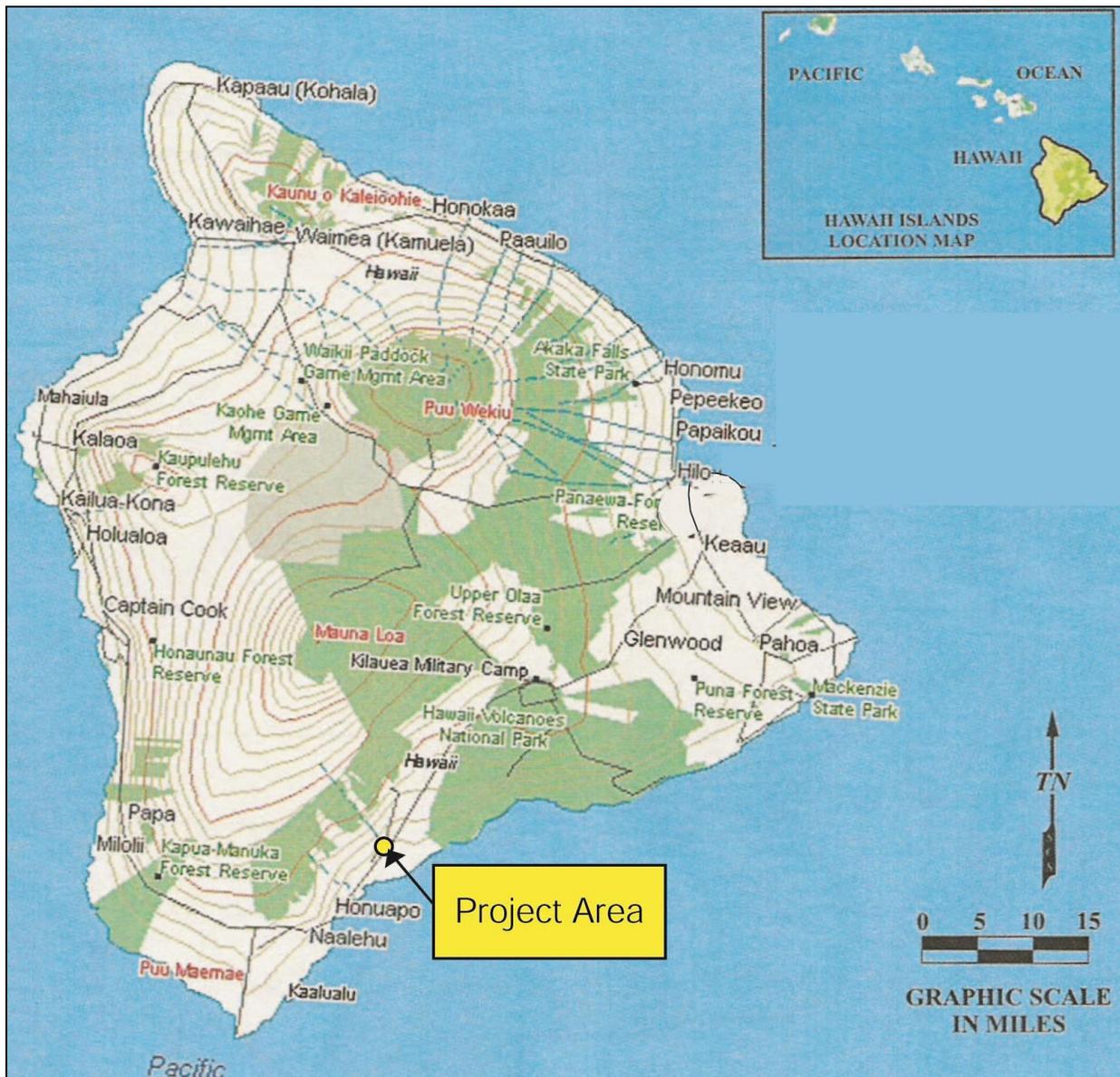


Figure 1: Hawai'i Island Map Showing Project Area Location.

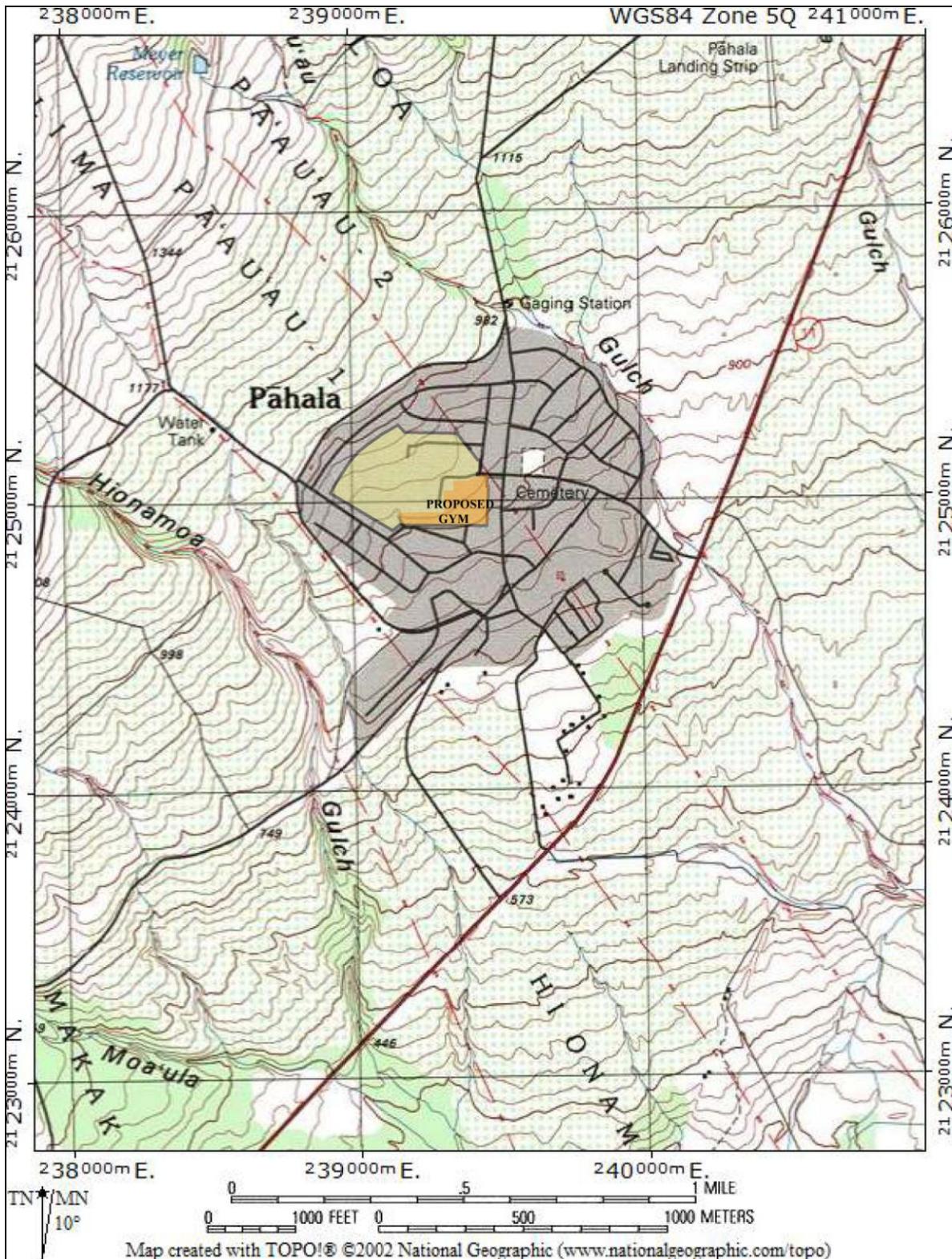


Figure 2: USGS TOPO Map Showing Project Area Location (Yellow) and Proposed Construction Site (Orange).

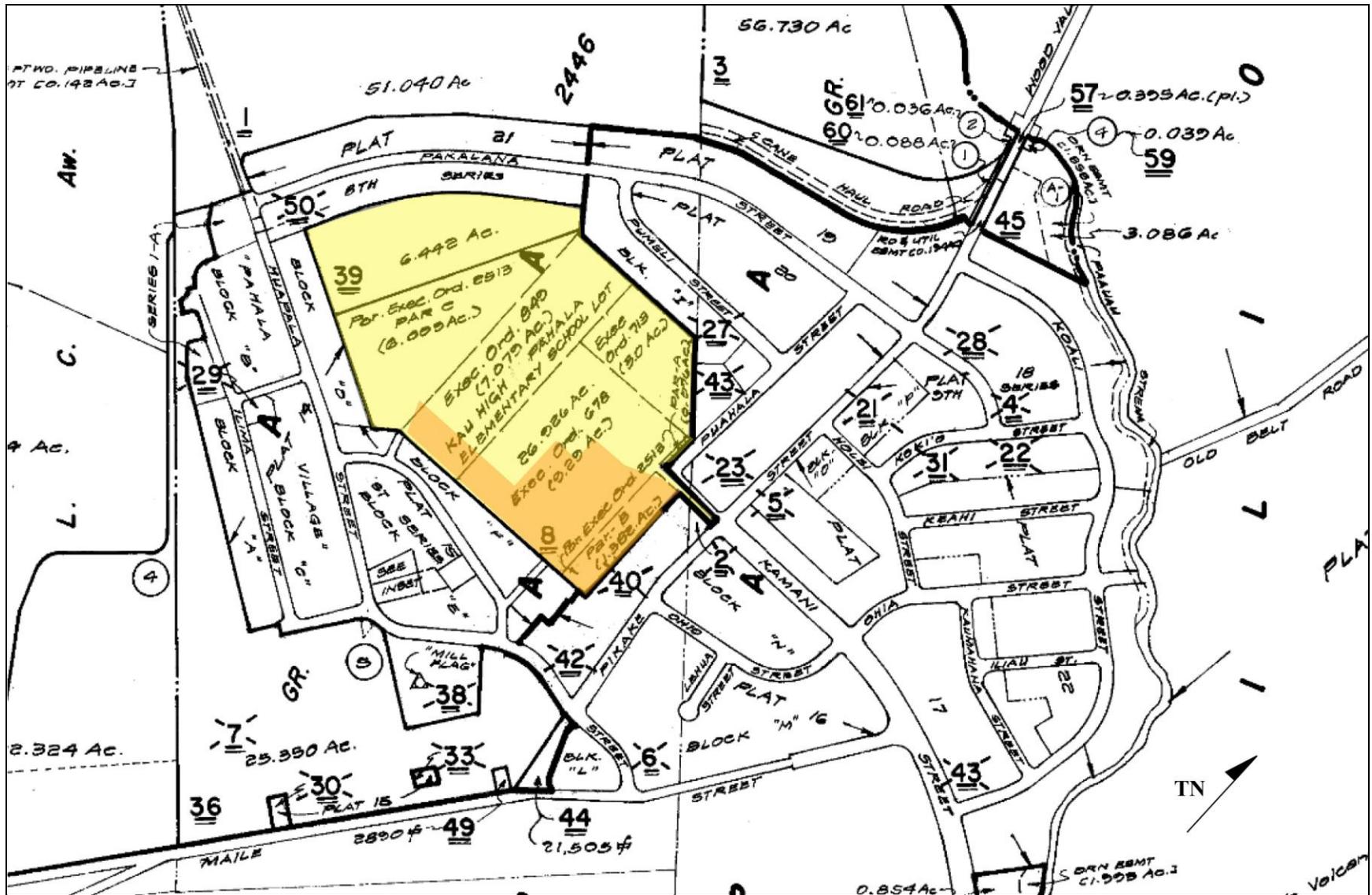


Figure 3: Location of Project Parcel (Yellow) and Proposed Construction Site (Orange) on TMK: (3) 9-6-005 Map.

The Constitution of the State of Hawai`i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 requires the State to “protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua`a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778” (2000). In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupua`a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai`i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, “native Hawaiian rights...may extend beyond the *ahupua`a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner” (Pele Defense Fund v. Paty, 73 Haw.578, 1992).

Act 50, enacted by the Legislature of the State of Hawaii (2000) with House Bill 2895, relating to Environmental Impact Statements, proposes that:

...there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii’s culture, and traditional and customary rights... [H.B. NO. 2895].

Act 50 requires state agencies and other developers to assess the effects of proposed land use or shore line developments on the “cultural practices of the community and State” as part of the HRS Chapter 343 environmental review process (2001).

Its purpose has broadened, “to promote and protect cultural beliefs, practices and resources of native Hawaiians [and] other ethnic groups, and it also amends the definition of ‘significant effect’ to be re-defined as “the sum of effects on the quality of the environment including actions that are...contrary to the State’s environmental policies...or adversely affect the economic welfare, social welfare, or cultural practices of the community and State” (H.B. 2895, Act 50, 2000).

Thus, Act 50 requires an assessment of cultural practices to be included in the Environmental Assessments and the Environmental Impact Statements, and to be taken into consideration during the planning process. The concept of geographical expansion is recognized

by using, as an example, “the broad geographical area, e.g. district or *ahupua‘a*” (OEQC 1997). It was decided that the process should identify ‘anthropological’ cultural practices, rather than ‘social’ cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 1997): The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural, which support such cultural beliefs.

This Cultural Impact Assessment involves evaluating the probability of impacts on identified cultural resources, including values, rights, beliefs, objects, records, properties, and stories occurring within the project area and its vicinity cultural values and rights within the project area and its vicinity (H.B. 2895, Act 50, 2000).

METHODOLOGY

This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). In outlining the “Cultural Impact Assessment Methodology”, the OEQC state: ...information may be obtained through scoping, community meetings, ethnographic interviews and oral histories... (1997).

The report contains archival and documentary research, as well as communication with organizations having knowledge of the project area, its cultural resources, and its practices and beliefs. This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). The assessment concerning cultural impacts should address, but not be limited to, the following matters:

- (1) a discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints of limitations with

- might have affected the quality of the information obtained;
- (2) a description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken;
 - (3) ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained;
 - (4) biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area;
 - (5) a discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken, as well as the particular perspective of the authors, if appropriate, any opposing views, and any other relevant constraints, limitations or biases;
 - (6) a discussion concerning the cultural resources, practices and beliefs identified, and for the resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site;
 - (7) a discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project;
 - (8) an explanation of confidential information that has been withheld from public disclosure in the assessment;
 - (9) a discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs;
 - (10) an analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place, and;
 - (11) the inclusion of bibliography of references, and attached records of interviews, which were allowed to be disclosed.

Based on the inclusion of the above information, assessments of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be

proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws and guidelines. Individuals and/or groups who have knowledge of traditional practices and beliefs associated with a project area or who know of historical properties within a project area are sought for consultation. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs, historical societies, Island Trail clubs, and Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input, and suggest further avenues of inquiry, as well as specific individuals to interview.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the information available for this study. When telephone interviews occur, a summary of the information is often sent for correction and approval, or dictated by the informant and then incorporated into the document. Key topics discussed with the interviewees vary from project to project, but usually include: personal association to the *ahupua`a*, land use in the project's vicinity; knowledge of traditional trails, gathering areas, water sources, religious sites; place names and their meanings; stories that were handed down concerning special places or events in the vicinity of the project area; evidence of previous activities identified while in the project vicinity.

In this case, letters briefly outlining the development plans along with maps of the project area were sent to individuals and organizations whose jurisdiction includes knowledge of the

area with an invitation for consultation. Consultation was sought from Kai Markell, the Director of Native Rights, Land and Culture, Office of Hawaiian Affairs on O‘ahu; Ruby McDonald, Coordinator of the Hawai‘i branch of the Office of Hawaiian Affairs; Pele Hano‘a (Hawai‘i Island Burial Council; Rick Gmerkin (Ala Kahakai National Historic Trail, NPS); and Darlyne Vierra. If cultural resources are identified based on the information received from these organizations and/or additional informants, an assessment of the potential effects on the identified cultural resources in the project area and recommendations for mitigation of these effects can be proposed. Public Notices were placed in the Ka Wai Ola OHA Newspaper, the Tribune Herald, and the Advertiser.

PROJECT AREA AND VICINITY

The project area is the 36.368-acre Ka‘ū High School and Pāhala Elementary School Campus in Pāhala, Pā‘au‘au 1st Ahupua‘a, Ka‘ū District, Hawai‘i Island area [TMK: (3) 9-6-005:008 and 039] (see Figure 1, 2, 3, and 4). The area was wooded during the pre-Contact era. More recently, the entire project area has been mass-graded for the school campus. The ground surface has been altered and is the site for playing fields, classrooms, and various school campus facilities.

CULTURAL HISTORICAL CONTEXT

HAWAIIAN LAND DIVISIONS AND SETTLEMENT

Initial settlement of the high Hawaiian Islands is believed to have occurred along the wetter and more fertile windward coasts where conditions were optimal for marine and terrestrial exploitation along lines followed previously in Eastern Polynesia. This exploitation involved inshore and pelagic fishing, gathering shellfish from the shore and strand, plant and animal husbandry, and the utilization of natural terrestrial flora and fauna (Kirch and Kelly 1975; Pearson *et al.* 1971; Kirch 1985). The pattern of this early settlement is thought to have consisted of widely spaced, permanent home bases that gradually expanded to form a nearly continuous zone of permanent settlement along the windward coasts as local populations grew.

There is a paucity of prehistoric information pertaining to the lands of the project area and surrounding lands. The project area is located in a traditionally sparsely populated region in isolated Ka‘ū District (Cordy 2000:24). An area with minimal soil, prone to volcanic activity and erratic patterns of, often low, rainfall (*ibid*: 25, 45).

The lands far from the sociopolitical population center of Hilo to the northeast and Kona to the northwest. Though a coastal trails were used to travel along the coast between Hilo and Kona, the project area is not at the nexus of a trail system, and much of the cross-island travel was conducted on trails that crossed the saddle between Mauna Kea, Maun Loa, and Huālalai (Figure 5).

WAHI PANA (LEGENDARY PLACES)

The district of Ka‘ū is translated as “the breast”, as it may appear rising from Mauna Loa (Maly 1992: 127). The *ahupua‘a* of Pā‘au‘au is a traditional Hawaiian land division situated within Ka‘ū between the coast and the upland slopes of Mauna Loa. Pā‘au‘au is a bath enclosure and used as a name for ponds (Pukui *et al.*1974:173). The name Pāhala refers to cultivating by burning mulch (*ibid*:174).

PREHISTORIC AND HISTORIC ACCOUNTS OF KA‘Ū

Ka‘ū has been known from old as Ka‘ū Mākaha, or Fierce Ka‘ū because the *maka‘ainana* there did not lightly bear the abuses of the *ali‘i* and *konohiki* (Kelly 1980: 1). In particular, there are three separate stories that relate the death of a chief for abusing his right to porters; the death of a chief for abusing his right to a portion of the fishermen’s catch; and the death of a chief for abusing his right to demand labor for construction (*ibid*: 1-6). Historically, the people of Ka‘ū are also notably fierce warriors.

Kamakau notes that ‘Umi-a-Liloa (ruler, 1600 to 1620) was thwarted in his attempt to subdue Ka‘ū during his campaign to unite the six districts of the Island of Hawai‘i (Kamakau 1992: 18-19). He was opposed by a particularly fierce chief named I-mai-ka-lani whose skill with a spear ‘Umi-a-Liloa feared. It wasn’t until after I-mai-ka-lani’s death that ‘Umi-a-Liloa captured Ka‘ū. After the death of Lono-i-ka-makahiki (ruler 1640-1660), rule over Ka‘ū, Kona, and Kohala passed to Kanaloa-kua‘ana’s (ruler 1640s) descendants (*ibid*: 61). Keawe (ruler 1720-1740) later ruled over Ka‘ū, Kona, and Kohala. At his death, Keawe commanded that his son Ka-lani-nui‘imamao become the ruler of Ka‘ū (*ibid*: 65). Ka-lani-nui‘imamao’s son Ka-lani-‘opu‘u (ruler 1754-1782) later added Puna to his rule over Ka‘ū (*ibid*: 76-77). Ka-lani-‘opu‘u reunified the six *moku* of Hawai‘i in 1754 (*ibid*: 78).

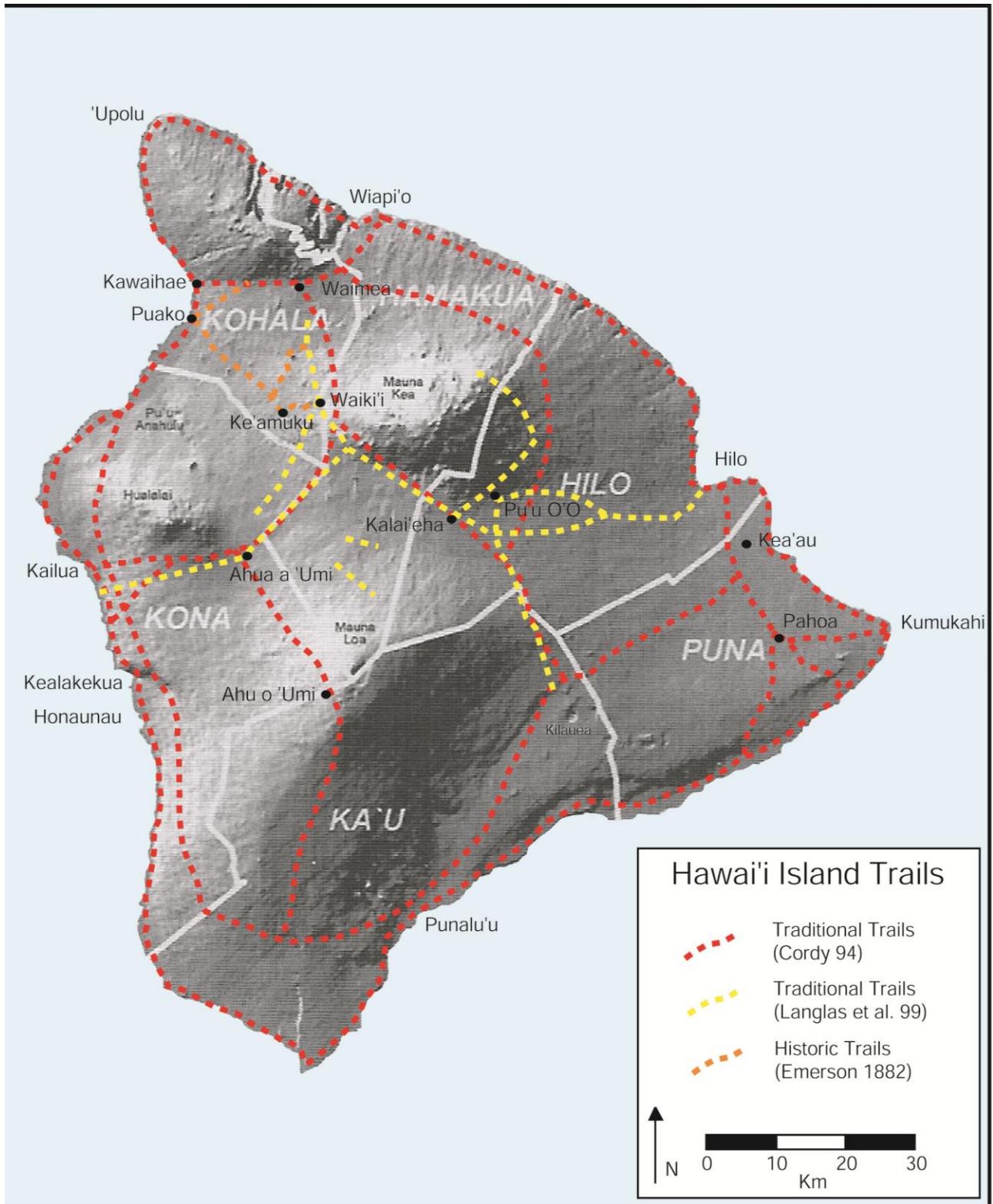


Figure 5: Hawai'i Island Trail Systems.

In 1776, when Ka-lani-‘opu‘u’s warriors were defeated by Ka-hekili’s forces at Wailuku on Maui, Ka-lani-‘opu‘u turned to the chiefs of Hawai‘i to renew the attack on Maui (*ibid*: 85-86). One of the chiefs he turned to was Nu‘u-anu-pa‘ahu, known as the “tearer-up of the cutworms of Nā‘ālehu, the hillside that withstands the winds of Ka-‘u” (*ibid*: 86). Ka-lani-‘opu‘u later feared that Nu‘u-anu-pa‘ahu would rebel against Ka-lani-‘opu‘u’s son, and so plotted to induce Nu‘u-anu-pa‘ahu to surf and be eaten by sharks (*ibid*: 106-107). Nu‘u-anu-pa‘ahu decided not to join in surfing, but was later attacked by sharks and died of his injuries after killing the shark.

Kamehameha, though born in Kohala, was raised by Ka-lani-‘opu‘u in Ka‘ū after the death of Kamehameha’s father. Ka-lani-‘opu‘u died in 1782 and his son Keoua became the ruling chief of Ka‘ū and Puna. Kamehameha killed Keoua in battle in 1790 during Kamehameha’s campaign to unify the Island of Hawai‘i under his rule. Kamehameha often fished for *ahi* at Ka Lae (South Point) when they were running just offshore.

POST-CONTACT

The first European’s to the Ka‘ū coast, Captain Cook’s crew of 1779, recorded the coastline to be a desolate and barren lava strewn land without water (King 1784: 104 and 545). Early travelers to the interior recorded a somewhat more verdant landscape. Archibald Menzies traveled through Ka‘ū in 1794 on his way to the top of Mauna Loa and described the area of Wai‘ōhinu as “a fine fertile valley” (Menzies 1920: 184). Menzies also recorded horticultural fields of bananas, vegetables, taro, and sweet potato along the lowland coast of Honu‘apo (*ibid*: 185-186). He noted that fallow fields were sown with grass that was cut and used as mulch in the growing fields.

William Ellis recorded his impressions of the area during his travel through Ka‘ū in 1823. He wrote that the area surrounding Honu‘apo seemed isolated and not often visited by foreigners (Ellis 2004:190-191). A group of about 200 Hawaiians gathered there to hear him preach. Between Honu‘apo and the village of Kapāpala to the northeast, Ellis passed through the villages of Hōkūkano, Hīlea, Nīnole, Punalu‘u, Wailau, Makaaka [Mākaka], and Ka‘ala‘ala.

Ellis recorded the presence of a fresh water spring at Hōkūkano and several fish ponds at Hīlea (*ibid*:195-196). He described Nīnole as a small village, but gives no description of Punalu‘u or Wailau. Ellis described the open land between Wailau and Makaaka as uncultivated rich, yellow-looking soil (*ibid*:202). Makaaka, 1.0 to 1.5 miles southwest of present day Pāhala, had only four or five houses with three or four families at the time of Ellis' visit. The land

between Makaaka and Ka‘ala‘ala, 1.5 miles northeast of Pāhala, was only marginally cultivated until Ellis passed through numerous "large fields of taro, potatoes, with sugar-cane and plantains growing very luxuriantly" between Ka‘ala‘ala and Kapāpala (*ibid*:205). Pāhala did not exist as a village at the time of Ellis' visit, and Pāhala town is the product of the later commercial plantation era (Handy *et al.* 1972:284). The area likely was sparsely populated and the location of dispersed households and upland gardens. Pāhala town is at the top of the dry barren zone and the bottom of the *kula uka* zone where dry-land taro, sweet potatoes, arrow root, and turmeric were grown (*ibid*:182, 554, and 614)

The population of Ka‘ū was estimated to be approximately 10,000 people in the early 1800s (*ibid*: 14). By the late 1800s disease, starting with the 1804 cholera epidemic, drought, deforestation due to goats and cattle, and the introduction of a cash economy and the resultant changes in subsistence all brought about a reduction of the population to about 2,000 individuals (*ibid*).

Ka‘ū suffered several recorded droughts around the period of 1845 (Kelly 1980: 11). The droughts were then followed by fire and a cycle of famine and disease from 1845 to 1865 (*ibid*: 11-12). An earlier fire was reported to have burnt nearly all of Ka‘ū in 1830 or 1831. The fires, famine, and disease, most notably a measles epidemic in 1850, reduced the population of Ka‘ū through death and emigration to other areas of the island (*ibid*). An additional factor that added to the famine is that Hawaiians turned to collecting *pulu* (the soft material at the base of the tree fern) to sell to foreign merchants (*ibid*: 12-13). The practice thrived as Hawaiians could be contracted to collect the *pulu* as payment for goods. The goods would be given as a debt to be paid in *pulu*. The collected *pulu* was bought for three to five dollars per thousand pounds to pay off the debt (*ibid*). The foreign traders then sold the *pulu* for roughly \$105 per thousand pounds. In contrast, taro farming, wheat farming, and other subsistence crop products sold for much less. As a result, debt, food scarcity, famine, and depopulation accelerated in Ka‘ū.

In 1868, a major eruption of Mauna Loa caused earthquakes, volcanic flows, and tsunamis that destroyed large portions of Ka‘ū (Elwell and Elwell 2004: 9). On April 3, 1868 there was an earthquake that measured 7.9 on the Richter scale resulting in tsunamis that leveled several villages along the coastline. Seventy seven people were killed; 46 from tsunamis and 31 from landslides (*ibid*). Agricultural plots, roads, and homes were destroyed. The resulting lava flows covered large portions of Kahuku west of the project area.

NATIVE TESTIMONY BEFORE THE COMMISSION TO QUIET LAND TITLES

With the Mahele of 1848 and the two Acts of 1850, authorizing the sale of land in fee simple to resident aliens and the award of *kuleana* lands to native tenants, land tenure in Hawaii arrived at a significant turning point (Chinen 1961:13). No Land Commission Awards were made within the project area. The project area is in the central portion of a large Land Grant. The Land Grant (GR. 2446) was a 173.5-acre parcel granted to Kamalo in Palima and Pā‘au‘au Ahupua‘a in 1857(waihona.com). No information was reported in the Land Commission records concerning land-use.

THE SUGAR INDUSTRY

Captain Cook found sugarcane (*Saccharum officinarum*) growing in Hawai‘i at the time of his arrival in 1778 (Beaglehole 1967:479). He noted that the cane was of large size and good quality. According to Hawaiians, sugarcane (*kō*) grew wild and quite well in the valleys and lowlands. It was not refined but was eaten as a food crop and was used as an offering, especially to the shark god *Mano* (Rolph 1917:166). Captain James King also noted that upon his arrival at Maui in 1778, Hawaiians came along ship carrying sugarcane as well as fruits and vegetables (Beaglehole 1967:497). Several sugarcane varieties, either indigenous or brought by early Polynesians, were known to the Hawaiians, including *Ualalehu*, *Ualalehu maoli* (native), *Honuauula*, *Laukena* (*Laukona*), *Kea* (*Kokea*), *Papa*, and *Ohua* (Wilfong 1883).

The earliest instances of sugar and molasses production in Hawai‘i remain uncertain, but were likely small-scale sugar extraction operations. A number of important chiefs set aside land for several of these early endeavors (Kelly *et al.* 1981:81). Rolph (1917:166-167) documents the inception of organized sugar production as follows:

L. L. Torbert, one the early planters, in a paper read before the Royal Agricultural Society in January, 1852, claims the earliest sugar factory was put up on the island of Lanai in 1802 by a Chinaman who came to the islands in one of the vessels trading for sandalwood. He brought with him a stone mill and boilers, and after grinding one small crop and making it into sugar, went away the next year taking his apparatus with him.

Anderson [Anderson, Rufus, *The Hawaiian Islands*, Boston, 1864] makes a statement that 257 tons of sugar were exported from the islands in 1814, but cites no authority upon which to base his assertion.

According to Jarves [Jarves, James Jackson, *History of the Sandwich Islands*, Honolulu, 1872] the first instance of the manufacture of sugar goes back to beyond 1820, but the name of the pioneer planter is unknown. It is certain that at first molasses was manufactured and then sugar some time before 1820.

Don Francisco de Paula made sugar in Honolulu in 1819, the year before the arrival of the first missionaries. Lavinia, an Italian, did the same thing in 1823. His method was to pound the cane with stone pestles on huge wooden trays (poi boards) by native labor, collecting the juice and boiling it in a small copper kettle.

Accounts from various sources agree that the making of sugar and molasses was general in 1823-24. This undoubtedly had direct connection with the manufacture of rum, which was extensively carried on at the time.

In 1828 a considerable amount of cane was raised in the Nuuanu valley and Waikapu, Maui. A pioneer cane grower, Antonio Silva by name, lived at the latter place, and some Chinamen had a sugar mill near Hilo. In those days mills were made of wood, very crudely put together and worked by oxen.

Ladd & Company established the first large-scale sugar production in Hawai‘i on Kauai, while David Malo operated a mill on Maui between 1840 and 1850, and Governor Kuakini directed the planting of one hundred acres of sugar cane in 1839 in Kohala, on the Island of Hawai‘i (Rolph 1917:169). Missionaries at Hilo in the early 1800s produced sugar and molasses for their own use (Kelly *et al.* 1981:81). In 1841, a mill on the Wailuku River in Hilo on Governor Kuakini’s land, and likely operated by Chinese, produced about 30 tons of sugar.

Sugarcane growing and milling operations were still simple. Cane fields were neither irrigated nor fertilized and sugar yields were roughly one ton per acre. Planting, by ‘o‘o (digging stick), and harvesting was done by Hawaiian contract workers (Thrum 1874:36). Laborers were paid in kind, often in cloth. Once at the milling facilities, cane was fed one stalk at a time into iron band reinforced wooden rollers powered by water, oxen, mule, and horse. The juice extracted by the rollers was collected in a trough and was boiled in whaling ship iron trypots (Figure 6). Less than 50% of the sugar was extracted from the cane using these methods. Additionally, production was low because indigenous sugarcanes were susceptible to introduced disease and were soft and therefore unsuitable for milling (Mangelsdorf 1956).

Lahaina sugarcane, a variety indigenous to the Marquesas, was introduced to Hawai‘i in 1854, and by 1870 had displaced all indigenous varieties for sugar production (Wilfong 1883). Hawaiian sugar production remained low despite the introduction of steam power in 1858-1859 to the milling process. The Island of Hawai‘i had a single mill operating at Hilo until the outbreak of the American Civil War (1861-1865). The disruption of sugar production in the American south caused a price increase and a concomitant rise in Hawaiian sugar production and export, from 2,600 tons in 1863 to 8,869 tons in 1866 (Rolph 1917:171). The rapid growth of

the sugar industry created a labor shortage that necessitated hiring contract laborers from other Polynesian islands.



Figure 6: A Whaling Trypot Typical of Those Used For Making Raw Sugar.

Hawaiian sugar production was still somewhat hindered by U.S. import duties, until a reciprocity treaty negotiated between the Kingdom of Hawai‘i and the U.S. in 1876 reduced import duties levied on Hawaiian sugar, increasing the profitability of sugar production and further spurring the growth of the sugar industry. From 1877 to 1888, sugar production increased almost 500% and doubled in the following ten years (Kelly *et al.* 1981:81). American consumers purchased nearly 99% of all Hawaiian export products, much of it sugar.

THE HISTORY OF SUGAR IN KA‘Ū

The first sugar mill in Ka‘ū was built at Wai‘ōhinu by Nicolas George in 1866 (Elwell and Elwell 2005: 23). The mill was constructed behind the present day Wai‘ōhinu park. Samuel Clemens noted in that year there were 150 acres of sugar cane plantation and a dozen houses at

Wai'ōhinu (*ibid*: 15). In 1868, Alexander Hutchinson bought 225 acres of land and established the Naalehu Sugar Mill at Nā'ālehu. Hutchinson bought the Wai'ōhinu Sugar Company in 1877, established a plantation and mill at Hilea, and in 1879 he established another mill at Honu'apo (*ibid*: 23). In 1879 after Hutchinson died, the Hutchinson Sugar Plantation Company continued under the direction Of W.G. Irwin.

Flumes were installed to bring sugar cane to the mill and railway lines were installed to transport raw sugar and molasses from Nā'ālehu to Honu'apo for shipping (after the construction of Honu'apo Wharf in 1883) (Figure 7). Though the Nā'ālehu mill closed in 1912, the company continued sugar production and merge with C. Brewer and Company in 1919 (*ibid*: 24). The sugar railroads operated through the early 1940s. By 1942, the wharf at Honu'apo was closed and raw sugar was shipped to Hilo by truck for shipping to California (*ibid*: 26). Honu'apo mill closed in 1972. All sugar industry ended at Ka'ū in 1996 (*ibid*: 28).

The sugar industry changed the social fabric of the area. Chinese laborers were brought in by Hutchinson to work in the sugar cane fields in the 1876. Portuguese, Japanese, and Pacific Islanders were brought in during the 1880s, and Filipinos began arriving at the beginning of the 1900s (*ibid*: 25-26). Numerous sugar camps were established in the area to house the sugar cane industry workers. The camps were often segregated by ethnic background. There was a Japanese camp on both sides of the Naalehu Spur road in Naalehu, just west of the current project area. The town of Naalehu owes much of its growth the sugar industry in the region.

C. Brewer and Company operated a dairy and butchery in Nā'ālehu that provided milk and beef. The remains of the dairy still stand just west of the current project area. They also had a company store in Nā'ālehu. Several other stores also operated in Naalehu town beginning in the era of sugar cane agriculture. After the 1960s, raw sugar production moved to other parts of the world where it was cheaper to produce. Large land owning corporations, once engaged in sugar production, switched to macadamia nut farming as a means of income.

Sugar cane agriculture was followed by macadamia nut plantations, especially common in the area surrounding Pāhala town. Sugar cane is no longer a large scale industry in Ka'ū, though macadamia plantations still exist and coffee production is enjoying new growth.



Figure 7: Photo of Honu'apo Wharf.

CULTURAL INFORMANT INTERVIEWS

SCS, Inc contacted five individuals who either work for the Office of Hawaiian Affairs, are Hawai‘i Island Burial Council Members (HIBC), or have a long-standing ‘ohana connection to Pāhala, or are familiar with the project area lands through cultural and historical work they conduct on the Island of Hawai‘i (Table 1). All but XX of the individuals responded. XX of the five individuals that responded had knowledge of the project area and provided information. None of the informants had knowledge of past or ongoing cultural practices on the project area property.

Table 1: Individuals Responding to CIA.

Name	Affiliation	Responded	Has Knowledge	Cultural Practices
Kai Markell	Office of Hawaiian Affairs			
Ruby McDonald	Office of Hawaiian Affairs			
Pele Hano‘a	Hawai‘i Island Burial Council, K‘ū			
Rick Gmerkin	Hamakua Sugar Field Superintendent			
Rick Toledo	Ala Kahakai National Historic Trail, NPS			

SUMMARY

The “level of effort undertaken” to identify potential effect by a project to cultural resources, places or beliefs (OEQC 1997) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a “good faith effort”. However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort might mean an entirely different level of research activity.

In the case of the present parcel, letters of inquiry were sent to organizations whose

expertise would include the project area. Consultation was sought from Kai Markell, the Director of Native Rights, Land and Culture, Office of Hawaiian Affairs on O‘ahu; Ruby McDonald, Coordinator of the Hawai‘i branch of the Office of Hawaiian Affairs; the Waimea Hawaiian Civic Club; Ku Kahakalau; Keawe Vredenburg; Dr. Billy Bergin; Clement Junior Kanuha; Leon J. No‘eau Peralto; Keawe Verdenburg; Gilbert Bailado; Rick Gmerkin (Ala Kahakai National Historic Trail, NPS); and Reggie Lee. Public notices were published in Ka Wai Ola, The Advertiser, and the Tribune Herald.

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of the report. Such scholars as Ūi, Kamakau, Chinen, Kame‘eleihiwa, Fornander, Kuykendall, Kelly, Handy and Handy, Puku‘i and Elbert, Thrum, and Cordy have contributed, and continue to contribute to our knowledge and understanding of Hawai‘i, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona ‘Aina 2007 Data Base.

CIA INQUIRY RESPONSE

As suggested in the “Guidelines for Accessing Cultural Impacts” (OEQC 1997), CIAs incorporating personal interviews should include ethnographic and oral history interview procedures, circumstances attending the interviews, as well as the results of this consultation. It is also permissible to include organizations with individuals familiar with cultural practices and features associated with the project area.

As stated above, consultation was sought from the Director of Native Rights, Land and Culture, Office of Hawaiian Affairs on O‘ahu; the Hawai‘i branch of the Office of Hawaiian Affairs; and the Hawai‘i Island Burial Council. Except for OHA acknowledging the receipt of our letter, none of the organizations responded with information concerning the potential for cultural resources or practices to occur in the project area. Those individuals who had knowledge of the project area lands responded that they were not aware of any cultural resources or ongoing cultural practices or beliefs associated with those lands.

Analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is a requirement of the OEQC (No. 10, 1997). To our knowledge, the project area has not

been used for traditional cultural purposes within recent times. Based on historical research and the responses from the above listed contacts, it is reasonable to conclude that Hawaiian rights related to gathering, access or other customary activities within the project area will not be affected and there will be no direct adverse effect upon cultural practices or beliefs. There will be no visual impact of the project from surrounding vantage points, e.g. the highway, mountains, and coast.

CULTURAL ASSESSMENT

Based on the results of a pedestrian survey of the project area, the results of previous archaeological studies at the school campus, as well as organizational response, individual cultural informant responses, and archival research, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by development activities on this parcel. No cultural activities were identified within the project area, and the proposed undertaking will not produce adverse effects to any Native Hawaiian cultural practices.

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APPENDIX D

Transportation Impact Analysis Report

MEMORANDUM

Date: February 7, 2012

To: Roy Takemoto, PBR Hawaii

From: Sohrab Rashid

Subject: *Ka'u District Gym and Shelter in Pahala, Hawaii – Focused Transportation Impact Analysis Report (TIAR)*

SJ12-1323

Fehr & Peers has completed a focused transportation impact analysis for the proposed development of a district gymnasium and community room/emergency shelter complex in the community of Pahala in the Ka'u District on the Island of Hawaii. This report includes an assessment of existing conditions and near-term future conditions with the project in place. A summary of potential transportation issues and recommended improvements is presented below, followed by details of our evaluation.

Summary of Findings

The following findings resulted from the focused transportation evaluation:

- Existing traffic volumes on Hawaii Belt Road in the vicinity of the project site are relatively low over the course of the day (less than 2,500 vehicles per day), as well as during the afternoon and early evening hours when gym traffic would peak (less than 205 vehicles per hour). Vehicle delays in the immediate vicinity of the school on Kamani Street occur for less than seven minutes due to very low existing vehicle trip generation and high rates of busing.
- The proposed project is expected to generate between 195 and 215 net new vehicle trips based on typical uses. The trip generation for an event where every seat in the gym is occupied would be substantially higher, but is expected to be a rare occurrence and would require a specific study detailing special parking and traffic control requirements.
- Because all roadways would operate acceptably with the addition of project traffic, no modifications to streets or highways is required.
- The anticipated parking demand for typical operations will be accommodated by the proposed parking supply of 218 spaces. Additional existing parking at Ka'u high School/Pahala Elementary School would provide a surplus for special events with higher attendance.
- The feasibility of providing a wider pedestrian path on Kamani Street between Puahala Street and Pikake Street should be investigated.

- Overall, the site plan should provide adequate circulation, but several recommendations have been made to improve circulation and access.

Detailed Transportation Evaluation

The project site is located on the existing campus of Ka'u High School and Pahala Elementary School and will incorporate use of existing roads for vehicle access. Local access to the campus is provided by via Kamani Street, while regional access is provided by Hawaii Belt Road. Both of these roadways have a substantial amount of available capacity during peak periods and throughout the day based on traffic counts and observations. Accordingly, the transportation evaluation of the proposed project is focused on site access, multi-modal travel to and from the site, as well as on-site circulation. In addition, the proposed project is expected a negligible amount of traffic during the AM peak hour when the facility will be exclusively used by the school where students are already on campus. Thus, all traffic assessments focus on the afternoon and early evening conditions.

Existing conditions are described below, followed by a description of the proposed project. Operations of the transportation system with the project in place are then described, and recommended improvements to minimize potential impacts are detailed in the last section.

Existing Conditions

The project site is located at the mauka terminus of Kamani Street immediately west of Puahala Street in the heart of Pahala. The gym complex is proposed to be located on a portion of the existing playfields and access to the new parking lot will share vehicular access with the school via Kamani Street. The location of the project site and immediate study area are shown on Figure 1.

Study Roadways

The proposed district gym will serve both students from the two existing schools, as well as members of the greater community, some of whom will travel from outside Pahala. The primary corridors for vehicle access are Kamani Street and Hawaii Belt Road (State Route 11). Puahala Street is located immediately adjacent to the site. Each of these facilities is briefly described below.

Hawaii Belt Road (State Highway 11) is a two-lane rural highway in the vicinity of Pahala that extends: 1) north and east toward Volcano (25 miles) and ultimately Hilo (55 miles), and 2) south and west to Naalehu (12 miles) and Ocean View (24 miles) before aligning north-south along the Kona coast. At the Kamani Street intersection, Hawaii Belt Road is posted with a 55-mile per hour speed limit. This facility serves two-way traffic and includes shoulders wide enough for a disabled vehicle to stand clear of the adjacent travel lane. Immediately north of Kamani Street, the highway includes a two-lane bridge with shoulders. No separate turn lanes are provided at the Kamani Street intersection.

Kamani Street is a nearly 0.5-mile collector street serving as the main vehicular access for Pahala. This facility includes two travel lanes and shoulders along most of its length between Hawaii Belt Road and Puahala Street. All-way stop control is provided at the intersection of Pikake Street,

which represents the primary constraint point of the local street system within the community. The posted speed limit for this roadway is 25 miles per hour.

Puahala Street extends between Kamani Street and Pakalana Street and provides access to the northern area of Pahala. Puahala Street includes wide shoulders and a substantial grade mauka of Pumeli Street. The posted speed limit is 25 mph and the approach to Kamani Street is stop-sign controlled.

Pedestrian, Bicycle, and Transit Access

As is the case with other local streets in Pahala, no sidewalks, designated walking paths, or separate bicycle facilities are provided on Kamani Street and Puahala Street in the vicinity of the existing school site. Signage and striped crosswalks are provided at the Kamani Street/Pikake Street intersection to highlight the presence of pedestrians. Pedestrian access is also provided to the site via Hala Street by way of a short flight of stairs and an opening in the fence. Hapu Street also includes a length of school frontage, but a short fence prevents pedestrian and bicycle access to the campus.

A bus stop is located on the southeast corner of the Kamani Street/Pikake Street intersection and includes a shelter and ADA-compliant loading area. Students must walk a short distance of approximately 375 feet on Kamani Street from the school to the bus stop.

Existing Traffic Volumes

Given the low number of fewer than 500 dwelling units in Pahala and the distance to major activity centers on the island, the overall vehicle trip generation is quite low. A substantial number of students are bused to the site from areas outside Pahala. Congestion is generally non-existent except for a brief time when school classes end; however, this congestion consists of a short queue on makai-bound Kamani Street as five standard school buses leave the site in addition to a small number of private vehicles. The afternoon peak lasts for a maximum of five to seven minutes.

As such, the daily and peak hour volumes on Hawaii Belt Road north and south of Kamani Street in front of the project site are relatively low. State Hawaii Department of Transportation (HDOT) data indicates that the daily volume on this roadway in 2008 is less than 2,300 vehicles per day, and the maximum two-way peak hour volume is slightly more than 200 vehicles occurring between 3:00 pm and 4:00 pm. Although this data is several years old, there has not been substantial growth in this area since 2008. This volume represents less than approximately 20 percent of the capacity of the roadway.

Volumes of this magnitude on a rural highway indicate that there are numerous gaps in traffic for vehicles to turn to and from Kamani Street, and observations corroborate this assumption. Drivers experience little or no delay at all intersections within the study area turning into and out of the site.

Project Description

The proposed project includes development of a gymnasium facility with the following primary components:

- Main gym with three full-size basketball courts (when the proposed bleachers are in storage)
- Wrestling/martial arts room
- Two unisex locker rooms for teams using the gym or wrestling/martial arts facility
- Separate public restrooms for spectators and other building occupants
- Administrative offices and storage
- Athletic training room
- Kitchen/concessions area

A separate building across a courtyard will include a recreation/game room (including items such as pool tables, table tennis equipment, etc.), and a multipurpose room for meetings and other events. The existing weight room in a separate building will continue to operate as such and is not a new use per se.

All of the new facilities will be constructed on the grass field between the existing tennis courts/basketball court and Classroom buildings B, C, and D. A new parking lot will be constructed along the east and south sides of the gymnasium complex and include a total of 218 spaces. Some of these spaces may not be constructed with hardscape and may be provided in grass areas.

Access to the new site will be provided by a new driveway located immediately west of the tennis courts and opposite the on-site roadway serving the northern part of the school campus. The new parking area will be completely separate from the existing school campus parking area. Figure 2 illustrates the proposed site plan for the new campus.

The current plan is for the facilities to be used by the school district during school hours. No public use by members of the community is planned until after classes are dismissed. At that point, the facility will be shared by the County of Hawaii Parks and Recreation Department and the school district. In addition, the facilities will serve as an emergency shelter for use by Civil Defense Agency and the Red Cross during events such as hurricane or tsunami warnings. In addition, either the proposed multipurpose room or recreation room will serve as a vog evacuation center with the appropriate emergency air filtration system to protect those susceptible to poor air quality.

Future Conditions

As noted above, the proposed project will serve multiple purposes. Typical use of the facilities will include school activities from the morning through the early afternoon. During this time, the site will not generate any new trips since the on-site student population will be the users of all of the facilities through the dismissal time of 2:15 pm. After that time, members of the community will likely be allowed to selectively use the new facilities including the weight room, meeting rooms, gym, and wrestling/martial arts room. However, school students are still expected to be the primary users through the afternoon hours as they practice for school sports. After 5:00 pm, the

proportion of community users is expected to increase as students leave for home. For example, the wrestling room could be used for martial arts classes open to the public, and community meetings could be held in the multi-purpose room. Operations are expected to vary from day to day, but the maximum use of all facilities is only expected to happen on the rare occasions. The analysis of future traffic and parking conditions was evaluated for assumed typical operations, but an estimate of maximum use was also developed for informational purposes.

Estimated Project Trip Generation

Preparing a vehicle trip generation estimate for a project such as a shared-use school/community facility requires development of a series of assumptions regarding the attendance level and turnover expected for facility component. In addition, the average vehicle occupancy for uses will vary, as well as the days of the week when activities occur. In many cases, the typical operating level for each component will be well below its maximum capacity, which is especially true for the main gym.

The trip generation estimate for the peak one hour when all uses could be generating traffic was prepared for four scenarios:

1. Maximum use of all facilities – basically assumes that every seat in the main gym is occupied. This represents a worst-case condition that would only occur with a major basketball game (e.g., state championship or major colleges).
2. Typical use of all facilities with a Ka'u High School basketball game and no other activities in the gym.
3. Use during school hours.
4. Typical after school/early evening use with basketball or volleyball league play in the gym using three courts.

The person-capacity assumptions for each major facility component are summarized below and the resulting trip generation is presented in the table on Exhibit 1.

- Existing Weight Room – Capacity of 20 persons and typical use by 10. It was assumed that all of the weight room patrons would either leave or arrive within the peak one-hour period.
- Recreation Room – Capacity of 30 persons assuming it will have pool tables, table tennis, television, computers, and other furniture. Typical use by 15 people at any given time.
- Multi-purpose room – Capacity of 125 persons for a large meeting with rows of chairs. Typical use by 40 persons in a club, other organization or small public meeting.
- Athletic Director and Recreation Director offices – Capacity for 1 person each and used at that level.
- Conference/Meeting Room – Capacity for 20 persons but typically used by 10 or fewer.

- Wrestling/Martial Arts Room – Capacity for 60 persons total including participants and spectators. Typical use assumed to be 30 persons for a class with some spectators (e.g., martial arts class). The analysis assumed all persons would leave or arrive during the peak hour period.
- Kitchen/Concessions – Capacity of 6 persons but typically used by 4. This would only occur during major events.
- Ticket Office – Capacity for 3 persons, but 2 windows typically operating.
- Gymnasium – Seating capacity of 1,070 but would rarely ever accommodate that number. Seating is designed to accommodate entire school student body (approximately 590 students) on one side of the gym. According to school administration, typical spectator attendance at a basketball game would be roughly 350. Players and coaches would generate a small amount of additional traffic.

For volleyball or basketball league play, the following was assumed: 20 players and coaches per court, 20 spectators per court, 3 active courts, and all courts would turnover once within the peak one hour.

The number of trips estimated for the proposed project is based on the simultaneous use of all facility components. The reality of actual operations will likely be less than described here. For example: 1) martial arts classes may only occur on certain nights of the week, 2) the multipurpose room will not be used every night of the week and the attendance may be lower than the 40 persons assumed in the analysis, and 3) meetings in the conference room may primarily occur during the daytime hours. In general, the trip generation estimates are considered conservative for each scenario in that these levels are not expected to occur every night.

As shown on Exhibit 1, typical late afternoon/evening use would generate a total of 195 peak hour vehicle trips (104 in/91 out). If a high school basketball game were scheduled instead of league play, the number of trips would increase to 215 (167 in/48 out). As noted previously, the amount of traffic generated during school hours before 2:15 pm would be negligible (less than 15 peak hour trips).

For a major basketball game that would fill every seat in the gym, the number of peak hour trips generated by the site would theoretically be as high as 580. However, given the existing and proposed parking supply at the site, all of the vehicles could not be accommodated and other arrangements for transporting people to the site would have to be made. This would likely include remote/off-site parking and frequent shuttle service, or the use of high-capacity passenger buses. Additional analysis should be completed if a major event such a high school championship or major tournament would generate near-capacity attendance.

Roadway Operations

As noted under Existing Conditions, the roadways in the vicinity of the project site have a substantial amount of available capacity. The addition of approximately 200 vehicles during a single hour would be higher than currently served on Kamani Street, but delays would be limited because of the lack of conflicting volume. At the Kamani Street/Pikake Street intersection, the

stop signs would cause some short, temporary delays for inbound traffic headed for the gym, but the 167 vehicles would generally be unimpeded because of very low volumes on the other intersection approaches. All intersections would continue to operate acceptably during the peak one-hour period according to County and State standards.

The site plan on Figure 2 shows a potential vehicle connection to Hapu Street at the southwest corner of the project site. Based on the relatively low trip generation and the fact that vehicle delays are expected to be minimal, a second public street connection to the site is not required from a capacity perspective. While increased connectivity is always desirable to distribute traffic over the entire street network, this connection is not needed. However, an emergency access connection should be provided via a locked gate such that emergency responders can drive onto the school campus should vehicle access be blocked at the Kamani Street entrance.

Parking

Parking demand for the proposed project was developed using a methodology similar to that for trip generation. The number of persons, average vehicle occupancy, and turnover factor were developed and the resulting parking demand was calculated for each study scenario (maximum, typical with a game, etc.). The turnover factor is different for parking in that it represents the likelihood of a vehicle arriving within the hour before another vehicle from the same facility has departed. For example, this likelihood is higher for classes in the martial arts room or league activities in the gym where participants in the next event will arrive before the previous event has finished. Conversely, in the case of the weight room, participants will arrive and depart at random times throughout the day and may or may not overlap. The resulting parking demand calculations are included as Exhibit 2.

Peak parking demand under typical late afternoon/early evening conditions is estimated to be 194 spaces assuming activities in all parts of the gym complex. If a basketball game is scheduled instead of league volleyball or basketball games, the peak demand is expected to be slightly higher at 214 spaces. As noted above, a major event where every available seat in the 1,070 seat gym is occupied would generate a theoretical demand of 577 parking spaces. However, this scenario is expected to occur rarely and would require provision of alternative transportation options to accommodate that level of patrons. Similar to the trip generation estimate, the assumptions for parking were developed using a conservative approach regarding simultaneous demand and expected turnover.

The proposed project includes a total of 218 new parking spaces located along the eastern and southern edges of the site. Without considering any additional parking supply on the existing school campus, the proposed supply is expected to accommodate the anticipated demand for all study scenarios except under maximum occupancy conditions. However, there are 46 additional spaces immediately adjacent to the site and another 26 or so on school property adjacent to Puahala Street that could be used by gym patrons depending on the time of day. Many of these 72 additional spaces would be available later in the day after school staff and volunteers have departed.

A final determination has not been made as to the number of paved spaces and those that could be accommodated on grass areas. Given the infrequency of major basketball games relative to the total number of days in a year, it may be feasible to limit the number of paved spaces and

"land bank" an area for future expansion of the paved area if needed. In any case, no parking deficiency is anticipated with typical operations at the project site assuming an on-site supply of 218 spaces, as well as the 72 additional existing spaces at the school.

Pedestrian, Bicyclist and Transit Facilities

Pedestrians and bicyclists will continue to access the project site as students access the existing school campus. Local Pahala residents should be encouraged to walk and bicycle and avoid driving to the new community amenity given the multiple access routes (Kamani Street, Puahala Street and Hala Street). With development of a new emergency access point on Hapu Street, installation of a new fence opening to allow bicyclists and pedestrians to access the school and district gym is recommended. This will benefit residents who choose to walk from their homes on portions of Huapala, Hau, Ilima, and Pakalana Streets.

A primary walking path to the project site and the existing school campus is the segment of Kamani Street between Puahala and Pikake Streets. However, the shoulders on this segment are narrow (approximately two to three feet) and are bordered by a fence and/or low wall on both sides of the street. Ideally, a more defined and wider walking path of approximately five feet would be available to help separate pedestrians from vehicle traffic during peak periods. This path also links the school and project site with the existing transit stop and would benefit transit riders.

It is recommended that the feasibility of installing a new separate path on the south side of the street be investigated and evaluated as part of project development. The evaluation would consider right-of-way impacts to the adjacent residential parcel amongst other considerations.

Given the relatively low speeds and traffic volumes, bicyclists are able to share the road with vehicles, and no separate bicycle lanes or paths are needed near the project site. However, bicycle racks should be provided near building entrances to encourage cycling and to provide a safe location for bike parking and storage.

Emergency Shelter Use

Another primary function of the proposed project is as an emergency shelter during the threat and/or occurrence of a natural disaster (e.g., tsunami, hurricane, etc.). During an evacuation of the Ka'u district, people will arrive using various modes of travel including automobile, bus, walking and bicycling. At that time, it is assumed that all access points to the district gym will be open including the emergency access gate recommended on Hapu Street. Additional vehicle parking is available on the north side of the school campus if all of the spaces near the project site are occupied. No other changes to circulation are anticipated when the gym operates as a shelter.

Recommended Site Plan Modifications

Overall, the proposed site plan will provide adequate circulation within the school area. However, a few minor modifications to the site plan and suggestions to improve circulation and access have been identified. The recommendations are illustrated on Figure 3 and described below:

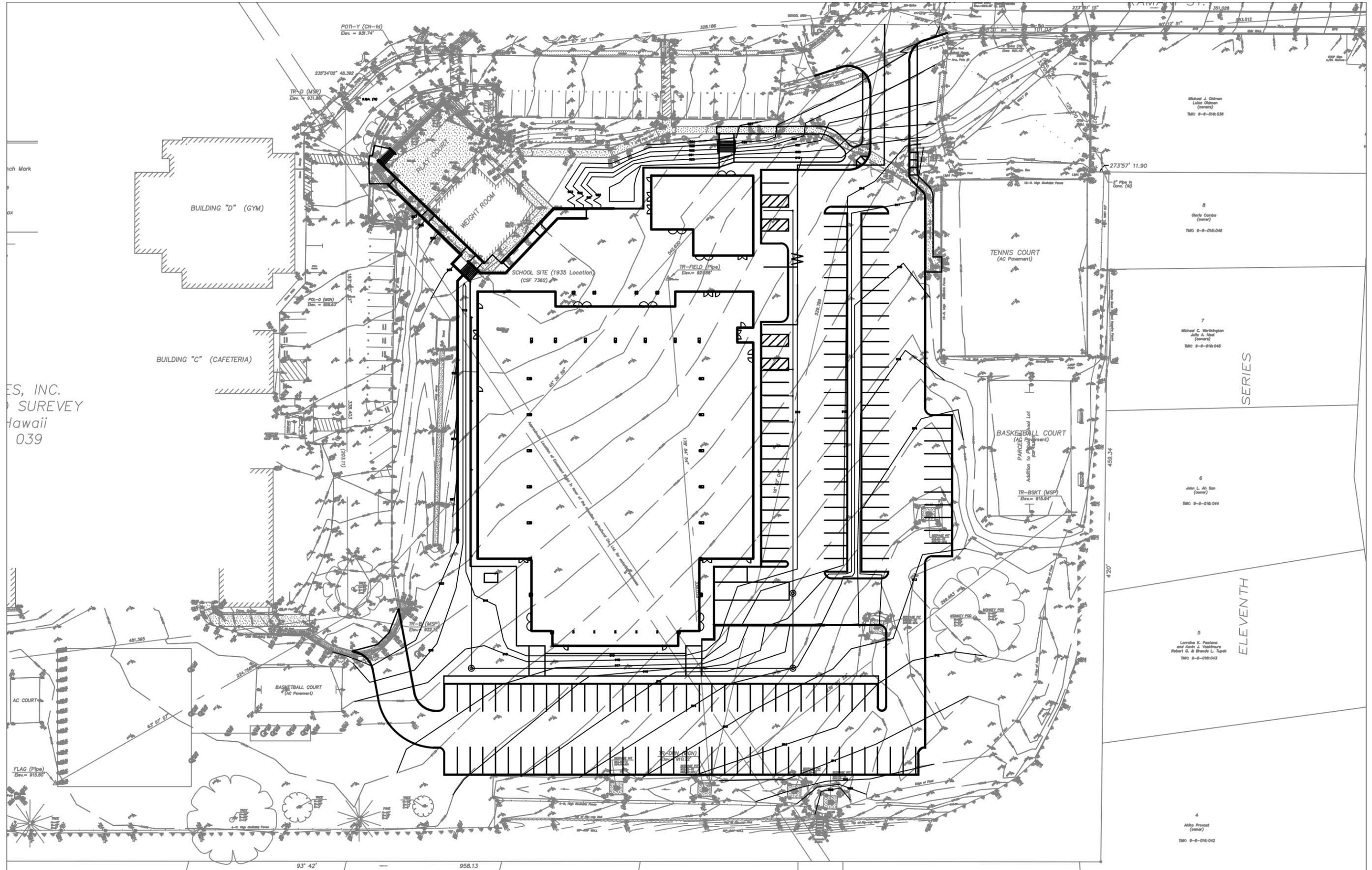
- Move the new driveway access slightly to the west to create a four-way on-site intersection. This will better direct drivers as they enter and exit the adjacent Kamani Street/Puahala Street intersection (Location A).
- Install stop signs on the new driveway access to the project site and on the driveway approach serving the north part of the school (i.e., where the buses currently exit the site). This will clearly delineate right-of-way and improve safety as vehicles turn at this location (Location B).
- Relocate the drive aisle connection at the southeast corner of the site. This will encourage more traffic to use the outside circulation aisle and reduce traffic immediately adjacent to the building (Location C).
- Complete a turning template analysis to ensure that full-size buses are able to turn and park at the southeast corner of the new building (Location D).
- Create a new emergency access gate and pedestrian- and bicycle-only access at Hapu Street.



Ka'u District Gym

Study Area and Project Site Location

ES, INC.
SUREVEY
Hawaii
039



Michael J. Oldman
Lyle Oldman
(owners)
TMC: 9-8-016-038

8
Gloria Combs
(owner)
TMC: 9-8-016-048

7
Michael C. Worthington
Julie A. Reed
(owners)
TMC: 9-8-016-046

6
John L. Ah Son
(owner)
TMC: 9-8-016-044

5
Lorraine K. Peltano
and Keith J. Yoshizawa
Robert G. & Brenda L. Tugel
(owners)
TMC: 9-8-016-042

4
Alisa Probst
(owner)
TMC: 9-8-016-042

SERIES

ELEVENTH

93' 42"

956.13

Exhibit 2

Ka'u District Gym Parking Demand Estimate

February 7, 2012

Facility	Number of Persons				Parking Space Demand						
	Maximum Capacity (A)	Typical Use w/ Game (B)	School Hours ©	Typical After School/E vening (D)	Average Vehicle Occupancy (O)	Turnover Factor	Maximum (A/O)	Typical Use w/ Game (B/O)	School Hours (C/O)	Typical After School/E vening (D/O)	
Existing Weight Room	20	10	0	10	1.25	125%	20	10	0	10	
Rec Room	30	15	0	15	1.25	125%	30	15	0	15	
Multi-Purpose Room	125	40	0	40	1.50	100%	83	27	0	27	
AD Office	1	1	1	1	1.00	100%	1	1	1	1	
Conference/Meeting Rm	20	10	10	10	1.25	100%	16	8	8	8	
Wrestling/Martial Arts Room	60	30	0	30	2.00	200%	60	30	0	30	
Rec Director	1	1	1	1	1.00	100%	1	1	1	1	
Kitchen/Concessions	6	4	0	4	1.00	100%	6	4	0	4	
Ticket Office	3	2	0	2	1.00	100%	3	2	0	2	
Gymnasium (see notes)	1070	350	0	120	2.50	200%	357	117	0	96	
Total w/ Gym							577	214	10	194	
Total w/o Gym							220	98	10	98	

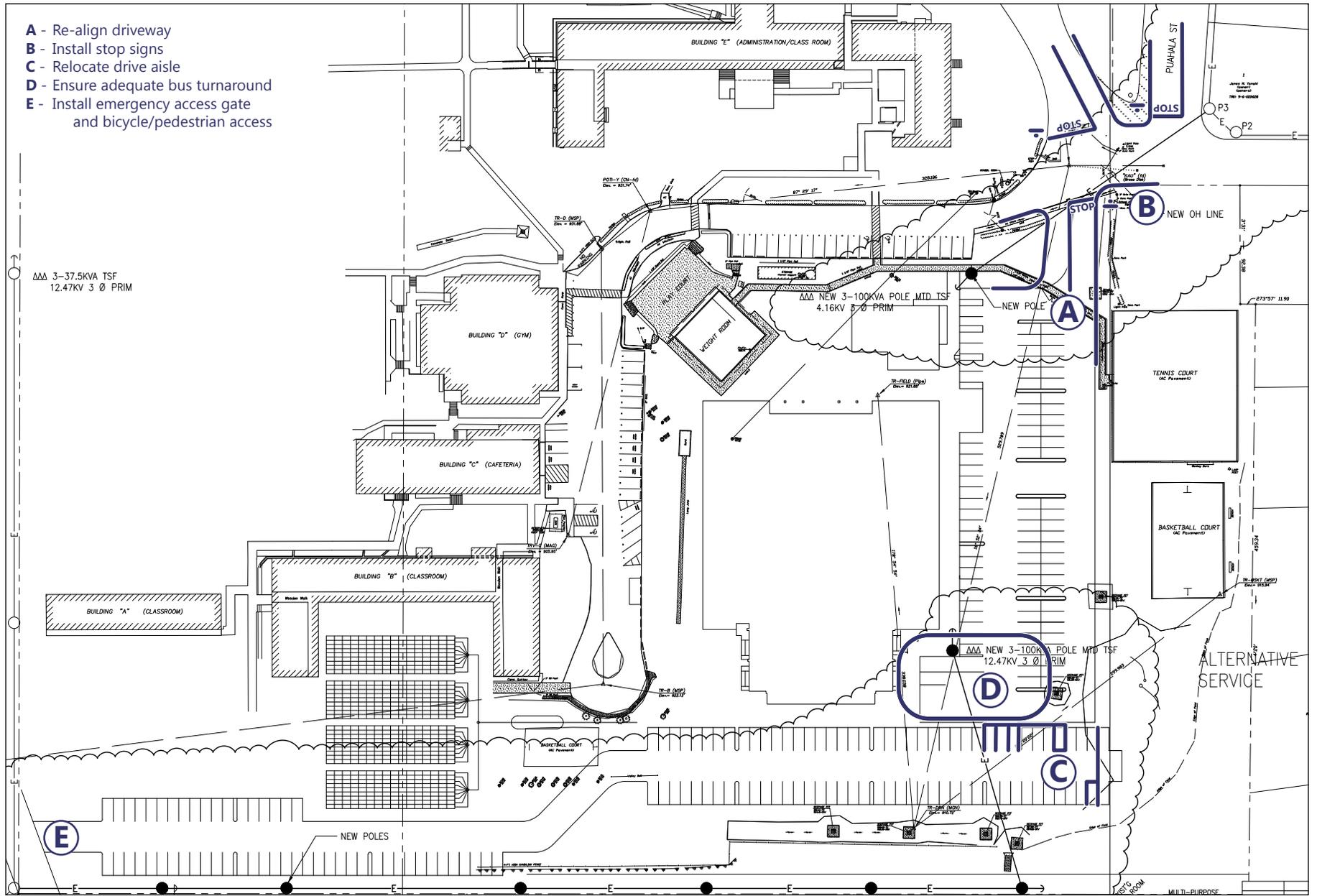
Notes:

For gymnasium under maximum and typical use estimate, the following parameters were used:

AVO = 3

Turnover = 100%

- A - Re-align driveway
- B - Install stop signs
- C - Relocate drive aisle
- D - Ensure adequate bus turnaround
- E - Install emergency access gate and bicycle/pedestrian access

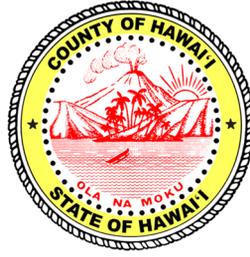


Ka'u District Gym

APPENDIX E

Community Meeting Materials

William P. Kenoi
Mayor



Warren H. W. Lee
Director

William T. Takaba
Managing Director

Brandon A. K. Gonzalez
Deputy Director

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

COMMUNITY MEETING

ON THE PROPOSED NEW

KA'Ū DISTRICT GYM & SHELTER

Tuesday, November 15, 2011

5:30 p.m. - 7:00 p.m.

Ka'ū High & Pāhala Elementary School Cafeteria

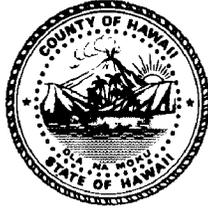
The County of Hawai'i will be hosting an informational and listening session for all persons interested in this proposed project that will construct a new county gymnasium and shelter facility on the campus of Ka'ū High and Pāhala Elementary School.

Please assist us in the planning of this facility that will support needs of your school and Ka'ū Community by joining us and being ready to share your visions, concepts, ideas, priorities, and concerns.

If you have any questions please call County of Hawai'i, Department of Public Works at 961-8321.

William P. Kenoi
Mayor

William T. Takaba
Managing Director



Warren H. W. Lee
Director

Brandon A. K. Gonzalez
Deputy Director

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KA'Ū DISTRICT GYM AND SHELTER

Community meeting on features and functionality for the proposed
Ka'ū District Shelter and Gym

November 15, 2011
Ka'ū High & Pāhala Elementary Cafeteria
5:30 P.M. to 7:00 P.M.

Please join us and share your thoughts and ideas on planning for a facility that will support the
needs of our school and Ka'ū District.

If you require special accommodations, auxiliary aid and/or services to participate in this
meeting (i.e. sign language interpreter, large print), please call (808) 961-8321.

* Please include your email address if you want to receive regular notifications of updates. *

KA'Ū DISTRICT SHELTER & GYM

DATE: November 15, 2011;

TIME: 5:30 p.m.;

PLACE: Ka'ū High & Pāhala Elementary Cafeteria

NAME (Print)	AFFILIATION	PHONE NO.	E-MAIL ADDRESS*
Guy Enriques		[REDACTED]	[REDACTED]
Gil Kakek	Legislature	[REDACTED]	[REDACTED]
Nelson Ho	Council Smart Office	[REDACTED]	[REDACTED]
JAY FAILING	N/A RESIDENT	[REDACTED]	[REDACTED]
RON JOHNSON	KA'U CALENDAR	[REDACTED]	[REDACTED]
Michael Worthington	Resident - Pāhala	[REDACTED]	[REDACTED]
ANNE M. FONTES	President of Pāhala	[REDACTED]	[REDACTED]
Kathleen Kam	Resident part-time	[REDACTED]	[REDACTED]
Julie Neil	Kau Calendar	[REDACTED]	[REDACTED]
GARY TAMONDOLL		[REDACTED]	[REDACTED]

* Please Include your email address if you want to receive regular notifications of updates. *

KA'Ū DISTRICT SHELTER & GYM

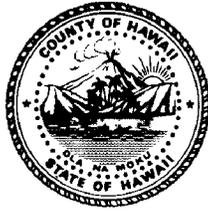
DATE: November 15, 2011;

TIME: 5:30 p.m.;

PLACE: Ka'ū High & Pāhala Elementary Cafeteria

NAME (Print)	AFFILIATION	PHONE NO.	E-MAIL ADDRESS*
Kathernu Okamura	NA		
Gail Kalani	N/A		
Chelsey Nishioka	DOE		
Franco Longakit	N/A		
Dorothy Kalua			
Stacey Bello	DOE		
Kalei Namohala	DOE		
Elijah Navarro	N/A		
Phing Wroblenski	DOE		
Gwendolyn Sorensen	Resident		
Rodencio Fuerte	"		
Jean Kaihaua	"		
Mike & Barbara McDonough	"		
Marjorie Zittelros - Villanueva Retired Teacher			
Cleopatra Louis Kleanna Louis	Resident		Kleanna Louis

William P. Kenoi
Mayor



Warren H. W. Lee
Director

William T. Takaba
Managing Director

Brandon A. K. Gonzalez
Deputy Director

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Notes from the Ka'ū District Gym and Shelter Community Meeting
Ka'ū High and Pāhala Elementary Cafeteria
November 15, 2011

Project: http://co.hawaii.hi.us/directory/dir_pubworks.htm
Share your thoughts: dpwnews@co.hawaii.hi.us

This is a summary of the wisdom, thoughts, wishes, and vision residents shared with the County departments of Public Works and Parks and Recreation and the consultants, Mitsunaga & Associates, Inc, for the design and construction of a \$16.9 million Ka'ū District Gym and Shelter.

GYM:

Designate suitable storage for P.E. equipment used by the school.

Protect equipment from vandals.

Protective covers for floors.

Do we have money to purchase trampolines, or other covers?

Floors for the facility will be wood, concrete, or?

This should be a multi-purpose facility with suitable parking, and ADA compliant stalls.

Add a stage. Ka'ū has a drama, performing arts class. Will the old gym continue to provide this?

We want to make this a LEED-type building as much as possible.

Add Wi-Fi and a certified commercial kitchen.

Consider a two-story facility, equipped with a back-up generator.

Install solar panels.

Add an audio-sound system.

Add multiple playground and courts. How many do you envision?

Fill athletic needs for the kids; 85% of the student body are involved in sports. Make sure kids have what they need. Grow opportunities through sports.

Put everything in the sports facility.

Kids and safety for the community is a consideration. Offer our kids the best facility. They should be number one. Health issues are major.

Enough showers to accommodate visiting teams during tournaments.

LOCATION/CAPACITY/OPERATION OF THE SITE:

Please look in to possible flooding or, refrain from diverting water into nearby structures (makai side) because the proposed site was filled and drainage was diverted. Take into consideration enter and exits as this relates to flooding, and traffic calming devices to reduce speeding. The dry wells are helping with drainage.

Building must meet earthquake and hurricane criteria.

What will be the capacity of the Gym to serve the community?

Is there an Environmental Impact Statement (EIS) or Environmental Assessment (EA) conducted for this facility? It will be the EA.

P&R will operate the Gym.

Facility should accommodate elementary school athletics. P&R is undertaking this role.

HEALTH ISSUES:

Can the facility be equipped to accommodate people with respiratory problems due to Vog? We can filter the air, if the facility is air-conditioned.

CHARACTER:

Design by wind strength.

Is there a design?

Suggest different styles/designs.

Will the design and rooflines fit the character of Ka'ū?

Consider a plantation-style design.

Don't see why we must build to hurricane requirements.

We should have different presentations.

SHELTER:

GYM has a dual role and serve many different functions. P&R will look at different situations.

Consider setting the facility away from nearby structures.

Is this a hardened building?

Can you make it soundproof?

Install a communication system for the shelter, the school, and community.

Define the needs and the capacity of the shelter to serve the needs of the area.

Civil Defense and other agencies will be involved in equipping the shelter.

Shelter affects everyone living between Pāhala to South Kona. It will serve anyone who needs it.

P&R will pursue with State Civil Defense and FEMA a shelter/Gym in Ocean View that can serve needs in that area. Presently, there is no money allocated for this project.

STIMULATE EMPLOYMENT:

This facility will be a competitive bid process.

ENERGY:

Consider LEED investors.

David Yamamoto

Project Director, Ka'u Gym and Shelter

Department of Public Works:

dpwnews@co.hawaii.hi.us/public_works@co.hawaii.hi.us

December 5, 2011

Aloha,

Though I've already testified at council on my concerns, I hope you'll take a few moments to review my suggestions, gleaned in the style of I.M. Pei and his design approach to the NOAA headquarters in Boulder, Colorado: one should consider carefully the position of light and air upon the land when envisioning new architecture.

Having lived in the community for many years, and having a lifetime interest in design, and having worked to help Guy Enriques with wresting this from the doldrums of DOE's backburner, I feel deeply vested.

WHAT IT IS NOT:

Some things that this gym-shelter is not: an amphitheatre or stage, a community party center, or a school assembly presentation center.

The old gym stage and seating may even be expanded with locker room conversion. That structure can remain as the preferred assembly hall.

There is no need to sacrifice the village green, the only level multipurpose open space in the area.

A plain box kind of building, plopped in a field with pavement all around is cheap and short-sighted.

Currently the county provides and said it shall continue to maintain the community center in the park by the fire station. The community is interested in upgrading those kitchen facilities. And given the existing campus kitchen, a waiver from the kitchen requirement for this new shelter/gymnasium should possibly be pursued.

WHERE IT SHOULD BE: no new parking lots or driveways needed.

For Pahala, a successful building will integrate with existing structures of the campus.

Here is a chance to do something really great for this community: Design and build a facility that will be in the middle of the campus, highly functional and well vented for both passive and active natural cooling. The result will be a healthy centerpiece for the schools and community.

The new shelter cannot be a drive-in. The health of the rest of the campus depends on supporting and closely interfacing with all existing facilities, not isolating. No new parking areas need be established, and the new building could be approached from the route behind the Library, as well.

Football/Baseball, sports bus drivers already know where most traffic goes for Pahala athletic events: upper lot, sports fields. A Corner of the preferred central site for the gym/shelter abuts the existing sports bus parking area.

WHAT IT SHOULD BE: Cool and efficient

Cut the hillside. The central site predominantly experiences airflow from trades, running from the east by northeast. When the vog emission is carried in a laminar flow, being able to shield from this direction will be most important.

While it is a large expense to excavate for a deep foundation the natural cooling, shade and ventilation benefits shall bring significant energy savings through passive efficiencies. Regulation of the passive benefit could be effected through the use of a cooling tower and sink well. Plug that into your L.E.E.D. calculations, or look to the IGCC for examples.

THE MOST FUNCTIONAL SPACE FOR THE BUDGET:

The central location would efficiently link to the existing emergency shelter, improving it's capacity. Opposite corner of the central campus site would allow for the addition of a secure, enclosed corridor to the FEMA rated Music Building/Shelter facility.

Consider double stacking or terracing. The building might enclose two separate halls, preferably each with large wood floor courts, nested into the profile of hillside. With an overall profile of a broken, staggered cube, greater strength and larger volume of space might be obtained at modest cost.

Thank you for your attention to these suggestions, and I would appreciate you sharing them with the Design Charrette(s) and Engineering Firm retained for this project.

Bradley D. Westervelt

808-557-5453 bdw@hawaii.rr.com

Director, Ka'u Federal Credit Union

President, Ka'u Hospital Charitable Foundation

Treasurer and Legislative Director, Hawaii Sustainable Communities Alliance

Director, Ka'u Chamber of Commerce, 2006-2009

Legislative Aide, Hawai'i County Council District 6, 2008-2010

Owner and operator, Pahala Town Café, also known as Tex Pahala Drive-In, 2005-2010

Dale McLaughlin

From: DPWNews [dpwnews@co.hawaii.hi.us]
Sent: Monday, December 05, 2011 7:17 AM
To: Yamamoto, David
Subject: FW: Gym

-----Original Message-----

From: Dale McLaughlin [mailto:dalehoops@yahoo.com]
Sent: Sunday, December 04, 2011 10:24 PM
To: dpwnews@co.hawaii.hi.us
Subject: Gym

Aloha David,

Just wanted to congratulate you and share my appreciation for the upcoming project. I have been an avid basketball player and fan my entire life so the gym will be a great outlet for living in south Kona.

I have recently been introduced and certified to teach Yoga and wanted to share with you about having a small room within the complex that could be utilized for yoga. The room needs nothing except openness, hardwood floors, and a wall with mirrors. This could be used to schedule yoga, dance or other activities... "Zumba", Pilates, etc.. that the gym wouldn't be quite as practical. It would be used by all ages and once people realize how yoga can change their life, it would be as popular or more popular than the gym itself. Ideally the room only needs to be big enough for 20-30 yoga mats on the floor.
20' X 30'.? 30' X 50' would do it.

I hope you guys do it right and put the funds to good use. Build it so that it will benefit the health and well being of ALL the residents who live in a geographical location that desperately need this to happen.

Thanks,
Dr. Dale McLaughlin
Ocean View Resident

Lee McIntosh

From: Lee, Warren
Sent: Monday, December 05, 2011 9:34 AM
To: Shiro, Diane; Gonzalez, Brandon; Yamamoto, David;
'aaronf@mitsdesign.com'
Cc: Komata, James; Honma, Clayton; Fitzgerald, Bob; Command, Bobby
Subject: Re: Pahala Shelter/Gym

Aaron

Here is a comment from the public

Warren

----- Original Message -----

From: Shiro, Diane
To: Lee, Warren; Gonzalez, Brandon <bgonzale@co.hawaii.hi.us>; Yamamoto, David
Sent: Mon Dec 05 09:12:53 2011
Subject: FW: Pahala Shelter/Gym

-----Original Message-----

From: Lee McIntosh [mailto:lee@cartoonistforchrist.org]
Sent: Saturday, December 03, 2011 3:49 PM
To: public_works@co.hawaii.hi.us
Subject: Pahala Shelter/Gym

Can you please forward my comments about the Pahala shelter/gym to the appropriate recipient? Thanks...

The disaster shelter/gym in Pahala needs to be built to meet the communities needs and be easily accessible by the public. While aesthetics and parking are important issues, they should not hinder the purpose of the project.

In regards to the filtered air system, the entire building should have the ability to be filtered, not just a single room. If the purpose of this project is to be a disaster shelter, to protect those at risk from the danger of vog when levels are high, then government should not scale down the design because it will be too expensive to maintain. Instead, a fiscally accountable solution should be sought to help mitigate the expense of filtering the air. A single room will probably not meet the demand for use, creating an uncomfortable experience. The entire building does not have to be filtered all the time, but the option should be available when needed.

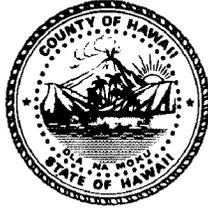
I would also like to see a certified kitchen included that will be available to organizations and businesses. This is a need in Kau. A certified kitchen could be a possible source of revenue to help cover the cost of maintenance.

Lee McIntosh

Discovery Harbour, Hawaii

William P. Kenoi
Mayor

William T. Takaba
Managing Director



Warren H. W. Lee
Director

Brandon A. K. Gonzalez
Deputy Director

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**DESIGN CONCEPT CHARRETTE FOR THE PROPOSED
KA'Ū DISTRICT GYM AND SHELTER**

**Ka'ū High & Pāhala Elementary Cafeteria
5:00 P.M. to 8:00 P.M.**

The Department of Public Works is holding a design concept charrette on December 19 & 20 for the Ka'ū District Gym and Shelter. Residents will have the opportunity to participate in the design of the facility with the project team.

At the November 15 meeting, residents shared their ideas, offered suggestions, and expressed their concerns for the facility. Input from this meeting and comments received up to the December 6 deadline will be discussed at the charrette.

The charrette will take place at the Ka'ū High and Pāhala Elementary School cafeteria from 5:00 PM to 8:00 PM on both days.

If you require special accommodations, auxiliary aid and/or services to participate in this meeting (i.e. sign language interpreter, large print), please call (808) 961-8321.

Ka'ū District Gym and Shelter at Ka'ū High and Pāhala Elementary School

<http://records.co.hawaii.hi.us/weblink/Browse.aspx?startid=24983>

Submit ideas, thoughts to dpwnews@co.hawaii.hi.us, or call 961-8787

Aloha,

On Nov. 15, residents shared with the County departments of Public Works and Parks and Recreation their wisdom, thoughts, and vision for the design and construction of a \$16.9 million Ka'ū District Gym and Shelter. Public Works, is the department responsible for this project, and plans to solicit bids in mid-March and award the construction contract in late June.

Public Works is holding a design concept charrette on December 19 & 20. The charrette will take place at the Ka'ū High and Pāhala Elementary School cafeteria from 5:00 PM to 8:00 PM on both days.

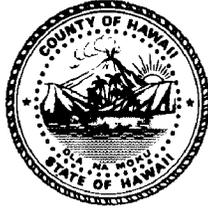
Please join us in sharing your thoughts.

Mahalo,

A handwritten signature in black ink, appearing to read "Warren Lee". The signature is fluid and cursive, written in a professional style.

Warren H. W. Lee, P.E.

Director, Department of Public Works



William P. Kenoi
Mayor

William T. Takaba
Managing Director

I. Warren H. W. Lee
Director

II. Brandon A. K. Gonzalez
Deputy Director

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**DESIGN CONCEPT CHARRETTE FOR THE PROPOSED
KA'Ū DISTRICT GYM AND SHELTER
Ka'ū High & Pāhala Elementary Cafeteria
5:00 P.M. to 8:00 P.M.**

Agenda

- I. Concepts**
 - a. Key Concepts
 - b. Design Principles
- II. Program**
 - a. Program List
 - b. Shared Spaces
 - c. Program Specifics
- III. Design #1 – One Building with 2 Courts**
- IV. Design #2 – One Court**
- V. Design #3 – Separate Buildings**
- VI. Comments**
- VII. Design Concept Differences/Pros & Cons**
 - a. Design Program Differences
 - b. Square Footage Comparison
 - c. Budget Comparison

If you require special accommodations, auxiliary aid and/or services to participate in this meeting (i.e. sign language interpreter, large print), please call (808) 961-8321.

Ka'ū Gym and Shelter

FIRST SOME BACKGROUND:

The idea of a Disaster Shelter was first broached at annual meeting of the Ka'ū school complex with the school, DOE and DAGS. DOE was asked to provide a budget that could be put into a CIP request for the project. Sen. Kokubun was also at the meeting.

The project was approved, but in a subsequent meeting with school officials and BOE representative Mr. Watanabe, he advise us that DOE considered this project a low priority and that DOE would not spend the money.

At subsequent a Legislative session the money was transferred to Hawai'i County with Mayor Kenoi's concurrence.

In January of this year Gov. Abercrombie agreed to release the money.

The need for a disaster shelter was obvious due to the size of Ka'ū and no other such facilities. The Ka'ū school complex was selected due to its central location and the daily population of the school on a normal school day.

Is this to be a “disaster shelter” or a safe gathering place for natural disasters in Ka'ū such as a fire that threatened residential areas in Ka'ū, a lava flow that imperiled areas such as Ocean View or a similar event where impacted citizens could be safe and a place to stay?

The concept was to have a section of the building secured to contain a 24/7 communication facility, an emergency generation facility, and storage for cots, medical supplies, water, MREs and other such amenities for Civil Defense purposes.

The remainder of the facility would normally be used as a gymnasium and for various community gatherings.

If time and funding permits, it would be useful to have an analysis of any natural disaster that might impact the site for the purpose of building hardening. Scientists should do this analysis based upon their ability to map natural disasters for intensity and frequency.

I look forward to seeing this project proceed and sorry that previous commitments kept me from this meeting.

Rep. Robert Herkes.