UNIVERSITY OF HAWAI'I AT HILO

Administration
Administrative Affairs

May 7, 2007

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

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR UNIVERSITY OF HAWAII AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, TMK (3) 2-4-1:07 (POR.) AND 167 (POR.), HILO, HAWAII, HAWAII

Dear Ms. Salmonson:

The State of Hawaii, University of Hawaii at Hilo has reviewed the comments received during the 30-day public comment period, which began on March 8, 2007. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the May 11, 2007 OEQC Environmental Notice.

We have enclosed the following items:

1. Four copies of the Final EA, and
2. Completed publication form (also to be emailed).

If you have any questions regarding the project, please call Lo-Li Chih of our Facilities Planning and Construction Office at 974-7595.

81-808 -

Sincerely,

Lois Fujiyoshi

Lois Fujiyoshi, Budget Officer
for Bill Chen, Interim Vice Chancellor for Administrative Affairs

Enclosures

200 W. Kawili Street, Hilo, Hawai'i 96720-4091
Telephone: (808) 974-7750, Facsimile: (808) 974-7542, www.uhh.hawaii.edu

UNIVERSITY OF HAWAI'I HILO




SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT

FINAL ENVIRONMENTAL ASSESSMENT

Prepared By:

PBR HAWAII

May 2007

UNIVERSITY OF HAWAI'I HILO

SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT

FINAL ENVIRONMENTAL ASSESSMENT

Prepared By:

PBR HAWAII

May 2007

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1.0
Introduction

1.0 INTRODUCTION

1.1 PROJECT SUMMARY

Project Name:	University of Hawai'i at Hilo Science Complex and Lanikaula Off-Site Parking Lot
Applicant:	University of Hawai'i at Hilo (UH-Hilo)
Land Owner:	State of Hawai'i
Location:	Hilo, Hawai'i (Figure 1)
Tax Map Key:	Old: (3) 2-4-57:25, 26 (portions) and (3) 2-4-1:07 (portion) (Figure 2) New: (3) 2-4-1:167 (portion) (by Consolidation No. 363 approved on March 13, 1979) and (3) 2-4-1:07 (portion)
Project Area:	Science Complex, Approximately 7.5 acres Lanikaula Off-Site Parking Lot, Approximately 2.0 acres
Existing Use:	Existing facilities in the vicinity of the proposed Science Complex include parking, the Beaumont Agricultural Research Center, Life Science Building, Marine Science Building, College Hall C, and Wentworth Hall. The proposed Lanikaula Off-Site Parking Lot site is currently vacant.
Proposed Use:	Science Complex and Parking Lot
Land Use Designations:	State Land Use: Urban (Figure 3) General Plan: University Use 9.5 acres (Figure 4) County Zoning: RS-10 Single Family Residential (Figure 5)
Special Management Area (SMA):	The subject property is not within the SMA
Permits/Approvals Required:	Compliance with Chapter 343, *Hawaii Revised Statutes* (HRS) Grading/building permits
Accepting Authority:	University of Hawai'i at Hilo

Determination: Finding of No Significant Impact

1.2 ENVIRONMENTAL COMPLIANCE

This Final Environmental Assessment (FEA) has been prepared in compliance with the State of Hawai'i, Hawaii Revised Statutes (HRS), Chapter 343, for the use of State lands in accordance with the State Department of Health, Hawaii Administrative Rules (HAR), Title 11, Chapter 200.

1.3 LAND OWNERSHIP

The State of Hawai'i owns the proposed project sites, which are both situated within the University of Hawai'i at Hilo campus.

1.4 IDENTIFICATION OF THE APPLICANT

The applicant is the State of Hawai'i, University of Hawai'i at Hilo (hereafter referred to as "UH-Hilo"). The contact information for the UH-Hilo is provided below:

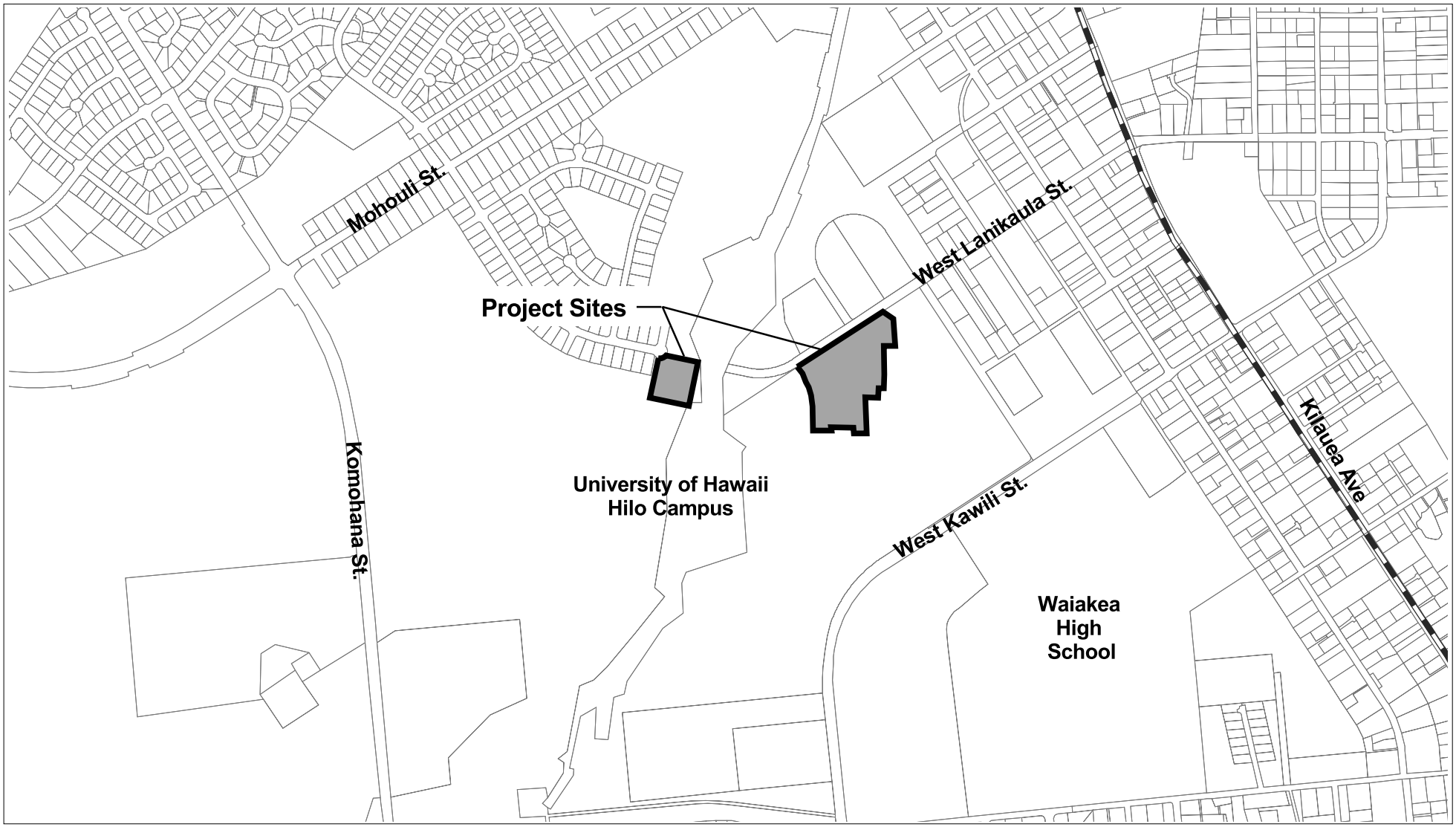
Lo-Li Chih, Registered Architect
Facilities Planning and Construction Office
University of Hawai'i at Hilo
200 West Kawili Street
Hilo, Hawai'i 96720-4091

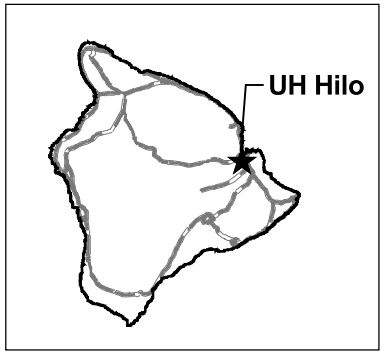
1.5 IDENTIFICATION OF APPROVING AGENCY

In accordance with Chapter 343, HRS and Section 11-200-11.2, HAR, whenever an agency proposes an action that requires the use of state lands or funds, the proposing agency shall issue either a Finding of No Significant Impact (FONSI) or an Environmental Impact Statement Preparation Notice (EISPN) after preparing the final document, reviewing public and agency comments and applying the significance criteria. UH-Hilo has the authority to make this determination. .

1.6 IDENTIFICATION OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONSULTED

A Revised Draft Environmental Assessment (EA) for the Science Complex and Lanikaula Off-Site Parking Lot was published in the March 8, 2007 issue of the Office of Environmental Quality Control (OEQC) *The Environmental Notice*. A Draft EA for the Science Complex was previously submitted and circulated for public review in March of 2005. The Revised Draft EA served as a replacement of the previous one as it includes the addition of the Lanikaula Off-Site Parking Lot (hereafter referred to as the "off-site parking lot"). The following public agencies (or agency documents) were consulted during the course of planning for the proposed UH-Hilo Science Complex as well as during the Draft EA and Revised Draft EA public review period:





LEGEND

Project Site Boundary

Source:
U.S. Geological Survey

Disclaimer:
This graphic has been prepared for general planning purposes only.

Figure 1
Regional Location Map

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

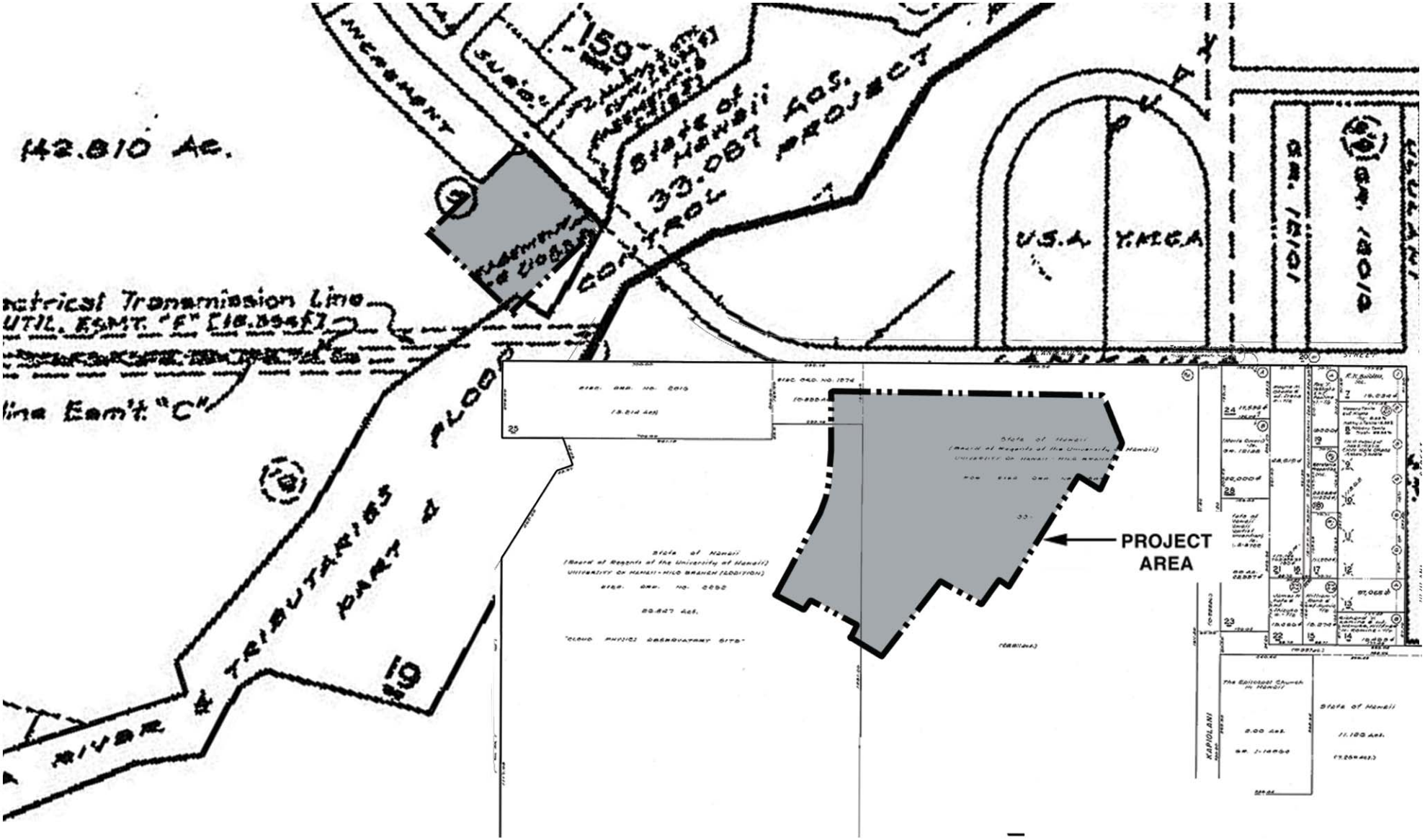
NORTH

LINEAL SCALE (FEET)

0 500 1,000 2,000

PBR HAWAII

OCTOBER 2006



LEGEND

Project Area

Source:
County of Hawaii Tax Map Key

Disclaimer:
This graphic has been prepared for general planning purposes only.

Figure 2
TMK (3)2-4-57:25(por.) and 26(por.), (3)2-4-01:07

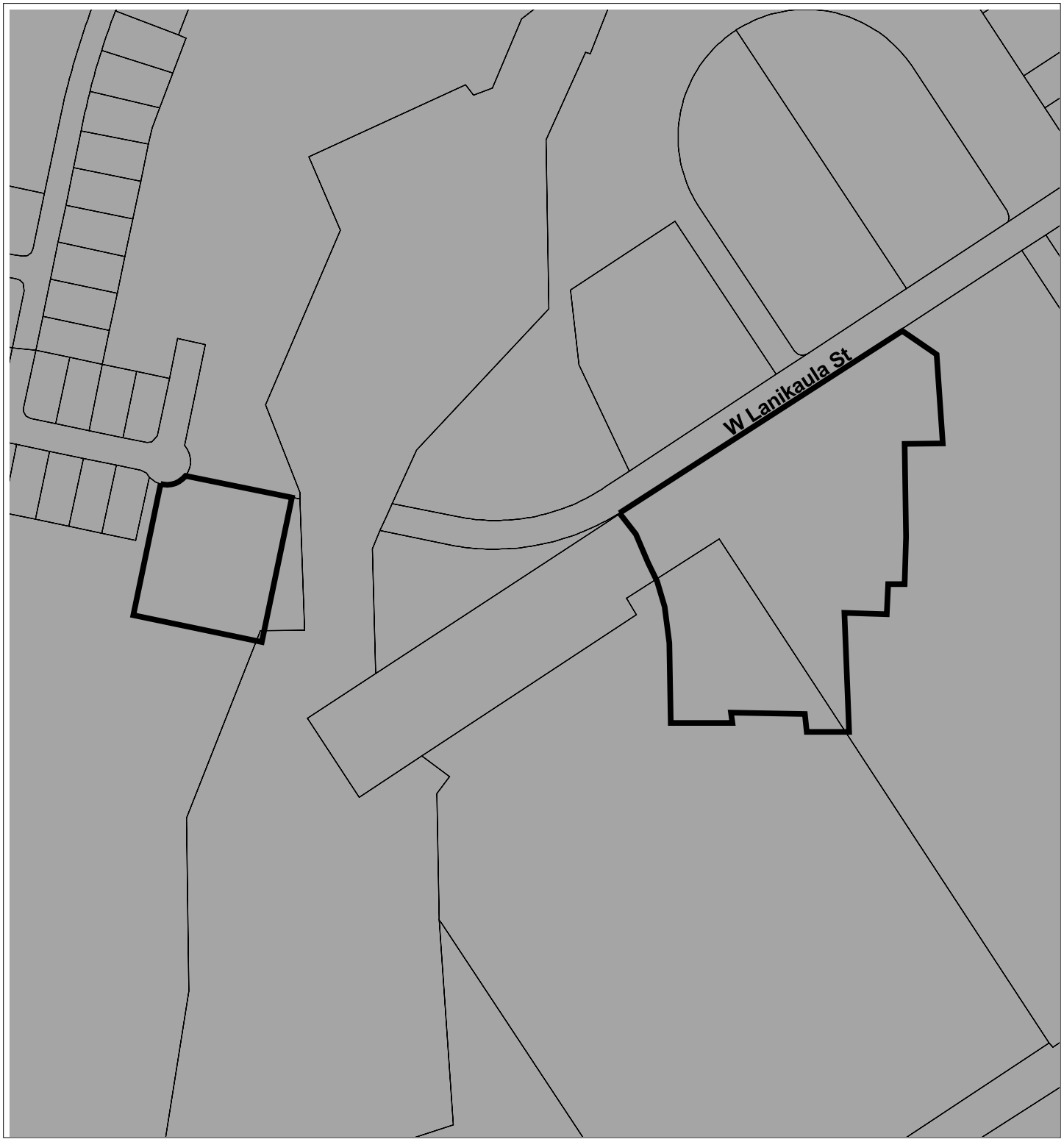
UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NOT TO SCALE

PBR HAWAII

DECEMBER 2006



LEGEND

State Land Use

Urban

Project Site Boundary

Figure 3
State Land Use District Boundary Map

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 150 300 600

PBR HAWAII

DECEMBER 2006

Source:
State Land Use Commission

Disclaimer:
This graphic has been prepared for general planning purposes only.

LEGEND

Land Use Allocation

- University Use
- Low Density Urban
- Medium Density Urban
- Project Site Boundary

Source:
County of Hawaii

Disclaimer:
This graphic has been prepared for general planning purposes only.

Figure 4
Hawaii County General Plan-LUPAG Map

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

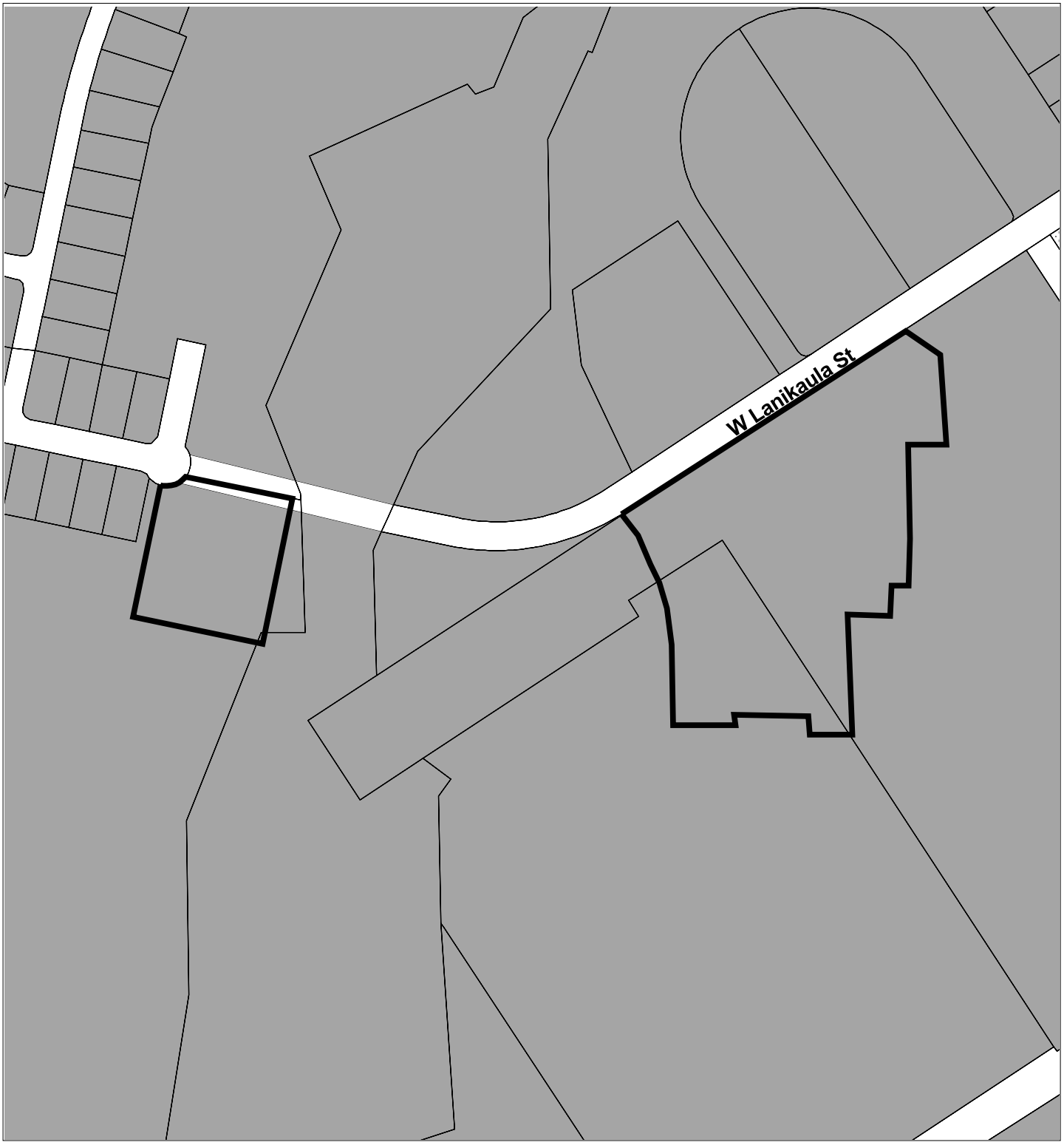
NORTH

LINEAL SCALE (FEET)

0 150 300 600

PBR HAWAII

DECEMBER 2006



LEGEND

Zoning

- RS-10 (Single Family Residential)
- RM-1 (Low Density Multi Family Residential)
- Project Site Boundary

Figure 5
Zoning Map

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 150 300 600

PBR HAWAII

DECEMBER 2006

Source:
County of Hawaii

Disclaimer:
This graphic has been prepared for general planning purposes only.

County of Hawai'i Agencies
- Planning Department
- Department of Parks and Recreation
- Department of Public Works
- Department of Research and Development
- Department of Environmental Management
- Department of Water Supply
- Fire Department
- Police Department

State of Hawai'i Agencies
- University of Hawai'i at Hilo
- Department of Business, Economic Development and Tourism
- Department of Health
- Department of Land and Natural Resources (DLNR)
- DLNR Historic Preservation Division
- Office of Hawaiian Affairs

Federal Agencies
- Federal Emergency Management Agency (FEMA)
- U.S. Natural Resources Conservation Service
- U.S. Geological Survey

Private
- Hawaii Electric Light Co., Ltd.

Community Individuals and Organizations
- Senator Lorraine Inouye, District 1
- Representative Jerry Chang, District 2
- Residents of the University Heights Subdivision
- ILWU Memorial Association
- Waiākea Settlement YMCA
- Church of the Holy Cross
- Hilo Baptist Church
- The Salvation Army

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2.0
Project Description

2.0 PROJECT DESCRIPTION

2.1 UNIVERSITY OF HAWAI'I AT HILO

The UH-Hilo is a comprehensive regional four-year State university located on the eastern side of the island of Hawai'i. It began as the Hawaii Vocational School in 1941 and has grown throughout the years to meet the educational needs of the community. In 1970, the school was organized under its present name. UH-Hilo is located just minutes away from downtown Hilo, Hilo International Airport, and Hilo Bay.

UH-Hilo is comprised of a 115-acre main campus, an adjoining 173-acre University Park of Science and Technology (University Park), and a 110-acre University Agricultural Farm Laboratory located in Pana'ewa Agricultural Park. The University also utilizes a number of buildings on the Hawai'i Community College Manono Campus.

UH-Hilo offers undergraduate and graduate education in a personalized atmosphere, encouraging student-faculty interaction and collaboration on research projects. It offers "hands-on" learning and leadership opportunities in an environment that is responsive to the needs of a diverse student population. UH-Hilo consists of approximately one (1) million square feet of space, including classroom space, laboratory facilities, a library and media services center, faculty offices, administrative and student services facilities, residence halls, a theater, a campus center, student activities, an athletic complex, tennis courts, and play fields.

2.2 PROJECT NEED AND OBJECTIVES

In the last ten years, the physical science programs (Physics/Astronomy, Chemistry, Mathematics, Computer Science, and Geology) at UH-Hilo have grown. The Biology and Marine Science programs have also experienced tremendous growth. Most of the facilities housing science and technology programs were built in the 1950s and 1960s, and the size, amenities, number of classrooms, and teaching laboratories available are inadequate to accommodate the rapidly expanding programs. Existing buildings also lack proper utilities and are not flexible for modern science and technology programs. Multi-sized classes, tutoring and work spaces, and faculty offices are inadequate to serve program needs.

There is also a need to train more Hawai'i residents to obtain jobs in the astronomical observatories. The UH-Hilo proposed a Center for Observational Astronomy Technology and a bachelor degree in Technology in response to astronomical observations on Mauna Kea and the State's need for highly trained technicians in electronics and information technology. Laboratories, offices, and classrooms are needed to support this department, as well as the Pharmacy College and other science departments.

In order to meet the needs of a growing student population, UH-Hilo proposes the construction of a new Science Complex on the northern boundary of the main campus. As the new Science Complex will displace existing parking, a new off-site parking lot will be constructed west and mauka of the Science Complex. The off-site parking lot will replace the parking that will be lost as well as provide additional parking for the University. Several buildings currently exist on the

project site, which is underutilized with regards to efficient land use. Figure 6 shows the existing site plan and Figure 7 includes photographs of the existing facilities. The current floor area provided by the on-site buildings (not including two portable buildings) is approximately 50,370 square feet and the total site area is approximately 326,320 square feet. This comprises a floor area ratio (FAR) of 0.15. The proposed Science Complex will consist of four buildings providing a total floor area of approximately 234,000 square feet and will significantly increase the FAR to 0.7. Of the four buildings that compose the Science Complex, only the Science and Technology Building has been designed and funded for construction.

2.3 DESCRIPTION OF THE PROJECT SITE AND SURROUNDING LAND USES

The proposed Science Complex and off-site parking lot sites are located in the northern portion of the UH-Hilo main campus, on approximately 7.5 acres of land and 2.0 acres of land, respectively. The site is within the Urban State land use district (Figure 3) and the Hawai'i County RS-10 residential zoning district (Figure 5). The proposed UH-Hilo Science Complex will be sited north of the Library and Media Center, south and adjacent to West Lanikaula Street, east of the campus entry road from West Lanikaula Street, and west of the Bookstore (Figure 8). Across West Lanikaula Street from the project site is the Church of the Holy Cross and the Waiākea Settlement YMCA. The proposed Science Complex site is approximately 7.5 acres on Tax Map Key (TMK) (3) 2-4-57:25 (portion) and 26 (portion) as shown in Figure 2. Subsequent to the publication of the Revised Draft EA, UH-Hilo was informed by the County of Hawai'i Planning Department that the Tax Map Key numbers for the proposed Science Complex site were redesignated from TMK (3) 2-4-57:25 (portion) and 26 (portion) to TMK (3) 2-4-1:167 (portion) by Consolidation No. 363 approved on March 13, 1979. One rare tree has been identified near the Beaumont Agricultural Research Center, and careful planning of the Science Complex facilities will avoid impact to the tree. The project site has been urbanized, as with other areas of the main campus, the terrain is highly modified and most of the landscaping is ornamental.

Existing buildings on the project site are described below. These buildings (and related parking areas) would have to be demolished for the development of the proposed Science Complex buildings, which are described in *Section 2.5 Conceptual Architectural Design*. Figure 6 shows the existing site plan and Figures 7a, 7b, and 7c includes photographs of the existing facilities.

Beaumont Agricultural Research Center

This center is leased to the University of Hawai'i at Mānoa. It includes three buildings at the campus entry road from West Lanikaula Street. The buildings are labeled Building 350 in the *University of Hawai'i at Hilo Long Range Development Plan* (LRDP) (March 1996). The total floor area for the Beaumont Agricultural Research Center is 6,268.10 square feet. Currently, there are 62 standard parking stalls and three (3) Americans with Disabilities Act (ADA) of 1990 compliant parking stalls provided.

Life Science Building

This building complex includes four buildings labeled Building 344A, 344B, 344C, and 344D in the LRDP. The total floor area for the Life Science Building is 11,377.55 square feet.

Figure 6
Existing Site Plan

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NOT TO SCALE

PBR HAWAII

DECEMBER 2006

1. Beaumont Agricultural Research Center (Building 350) parking lot.

2. Beaumont Agricultural Research Center from West Lanikaula Street.

3. Beaumont Agricultural Research Center looking south east. Marine Science Building in background.

4. Parking lot adjacent to Life Science Building (Building 344).

5. Parking lot looking southwest.

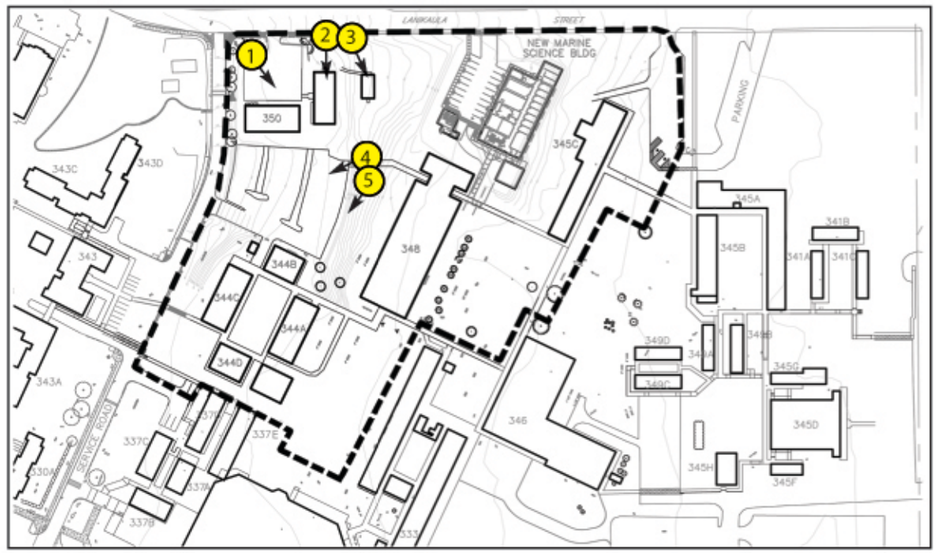


Figure 7a
Site Photographs
UNIVERSITY OF HAWAI I AT HILO
Science Complex

HILO, ISLAND OF HAWAII

PBR HAWAII

NOVEMBER 2004

6. View of parking lot and Wentworth Hall (Building 348).

7. View toward parking lot from Wentworth Hall.

8. Beaumont Agricultural Research Center from Wentworth Hall.

9. Wentworth Hall looking southeast.

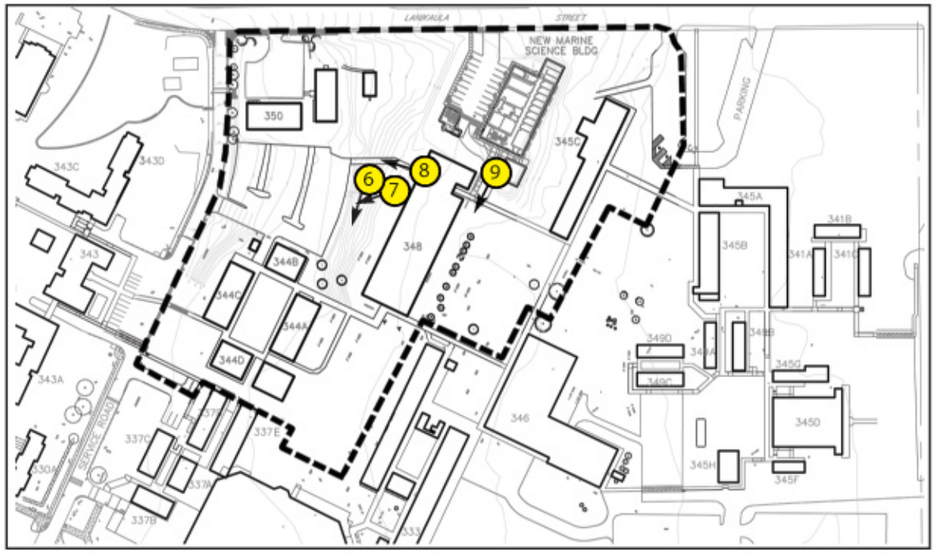


Figure 7b
Site Photographs
UNIVERSITY OF HAWAI I AT HILO
Science Complex

HILO, ISLAND OF HAWAII

PBR HAWAII

NOVEMBER 2004

10. College Hall C (Building 345C).

11. Looking south toward Library and Media Center and Kanakaole Hall (Building 333).

12. Kanakaole Hall from Wentworth Hall.

13. Portable Buildings 13 (Building 337D) and 14 (Building 337E) from Wentworth Hall.

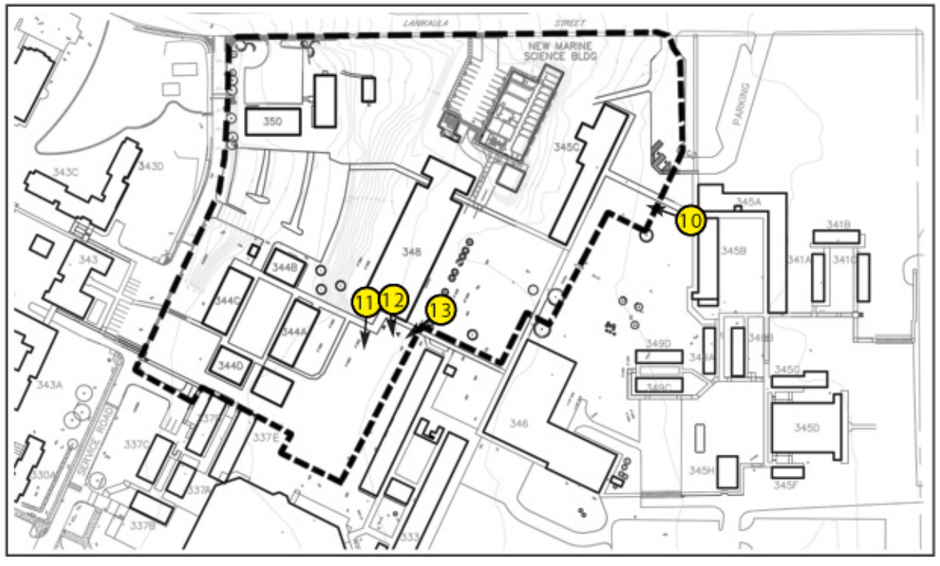


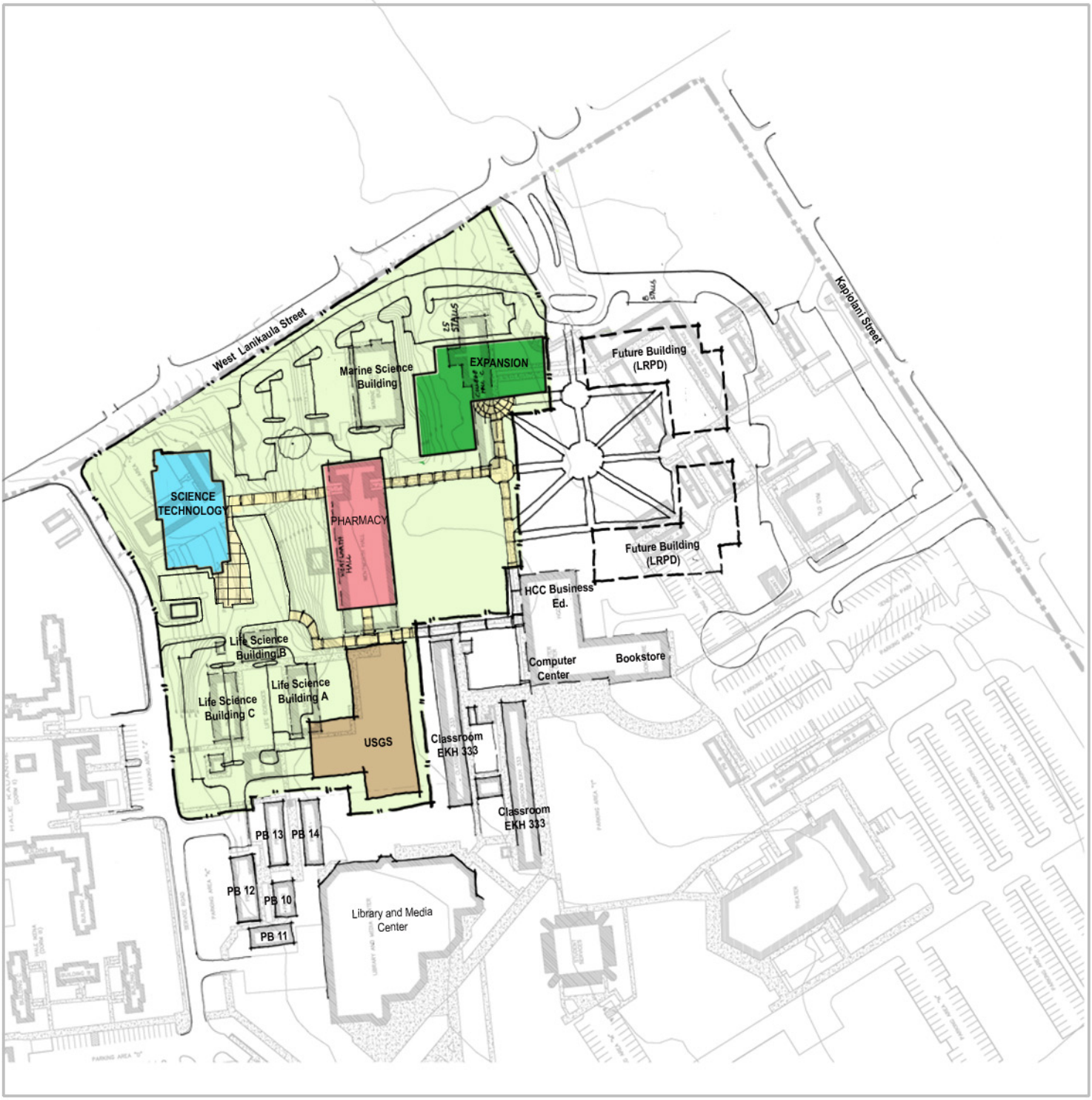
Figure 7c
Site Photographs

UNIVERSITY OF HAWAI I AT HILO
Science Complex

HILO, ISLAND OF HAWAII

PBR HAWAII

NOVEMBER 2004



LEGEND

Project Area

Figure 8
Proposed Site Plan

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 100 200 400

PBR HAWAII

JANUARY 2007

Disclaimer: Plan is Subject to Change
Sources: Wesley R. Segawa & Associates and KYA Design Group

Wentworth Hall
This building is labeled Building 348 in the LRDP and has a total floor area of 17,284.64 square feet.

Marine Science Building
This building is located adjacent to and north of Wentworth Hall, near West Lanikaula Street. The Marine Science Building has a total floor area of 7,835.64 square feet.

College Hall C
This building is labeled Building 345C and has a total floor area of 7,525.86 square feet.

Portable Buildings 13 and 14
These portable buildings (labeled 337D and 337E in the LRDP) are adjacent to the project site and could be removed in the future to provide additional "off-site" parking for the proposed Science Complex.

2.4 PROJECT BACKGROUND

The University of Hawai'i at Hilo retained Kajioka Yamachi Architects and PBR Hawaii to conduct the *UH-Hilo Science Complex: Site Selection Analysis* (*Site Selection Analysis*) (November 2004), which compared two potential sites for the Science Complex. Site 1 (Beaumont), which is the site proposed in the Environmental Assessment (EA), was located near the Library and Media Center and the Bookstore. Site 2 was on vacant land in the existing University Park. The *Site Selection Analysis* identified the physical characteristics of each site (i.e., archaeological sites; geological, flood, visual, noise, and traffic conditions; and infrastructure). Based on this analysis, Site 1 was selected for the proposed UH-Hilo Science Complex. The *Site Selection Analysis* is included in Appendix A.

2.5 CONCEPTUAL ARCHITECTURAL DESIGN

2.5.1 Building Floor Area

The proposed UH-Hilo Science Complex will provide significantly more floor area for science programs that are currently segregated into a series of smaller buildings. The total floor area for the proposed Science Complex is approximately 234,000 square feet. This constitutes an increase of approximately 183,630 square feet over the existing 50,370± square foot floor area (not including two portable buildings).

Proposed Science and Technology Building
The total building floor area (gross square footage) for the Science and Technology Building will be approximately 41,560 square feet. The estimated cost of construction of the Science and Technology Building is estimated at $25 million in 2007 dollars.

The Science and Technology Building will feature lobby areas with space for gatherings and displays, restroom facilities, janitorial facilities, utility rooms such as storage, telephone, electrical, mechanical and emergency generator rooms. A machine shop to fabricate small

displays or parts for astronomy use will also be part of the facility. There will be 25-27 faculty offices located throughout the building. The facilities that will be housed in the Science and Technology Building are described below:

- Tiered-seating lecture hall;
- Classrooms;
- Astronomy lab;
- General chemistry lab;
- Organic chemistry lab;
- Analytical chemistry lab; and
- Bio-chemistry lab;
- Physics lab;
- Computer room;
- Physics storage;
- Instrument research;
- Seminar rooms;
- Observatory control;
- Chemistry room;
- Physics research rooms;
- Spectroscopy;
- NMR;
- Chromatography;
- Refractometer; and
- Stock preparation.

The Science and Technology Building will also have a mechanical room. A separate chemical storage building will be constructed; the storage building will be divided into two (2) rooms to separate flammable storage from acid bulk storage. The classrooms will not contain or use chemicals of strength that is more than typical household chemical usage. There will be a separate cooling tower.

Two (2) dumpsters and a recycling shelter for discarded items will be located near the building; the recycling shelter will contain six (6) recycle bins for items such as paper, glass and plastic. Adjoining the recycle shelter will be a bike rack shelter enough to hold seven (7) to nine (9) bicycles.

Of the 65 existing parking stalls (62 standard and 3 ADA), nine (9) standard parking stalls and six (6) ADA compliant parking stalls will remain. The 50 stalls that are lost will be replaced in the off-site parking lot.

Proposed United States Geological Survey (USGS) Building

The gross square footage of the USGS Building (including space for both USGS and UH-Hilo) will be approximately 60,000 square feet in a two-story building. This building is not yet funded and the square footage is subject to change upon design.

Proposed Pharmacy College

The total building floor area (gross square footage) of the Pharmacy College will be approximately 39,420 square feet. This building will be two stories. This building is not yet funded and the square footage is subject to change upon design.

Proposed Expansion Building

The gross square footage of the Expansion Building will be approximately 48,060 square feet. This building will be two stories, and spaces within it are assigned as follows:

- Geology – Approximately 9,760 gross square feet.
- Marine Science – Approximately 11,710 gross square feet.
- Common Use Classroom Space for Science and Technology Building – Approximately 15,860 gross square feet.
- Future Expansion – Approximately 10,730 gross square feet.

This project is not yet funded and the square footage is subject to change upon design.

Lanikaula Off-Site Parking Lot

The off-site parking lot will accommodate 128 parking stalls with the ability to expand in the future to accommodate up to 44 additional parking stalls, for a total of 172 parking stalls. The off-site parking lot is located adjacent to the University Heights Residential Subdivision (Figure 8a). No ADA compliant parking stalls will be provided at the off-site parking lot as there is no continuous sidewalk connecting the parking lot to the campus and because of slope considerations. Currently a wide shoulder of 9 feet along West Lanikaula Street, except near the bridge where the shoulder is reduced to 5 feet, connects the proposed parking lot to the campus. In addition, the bridge has a sidewalk with non-ADA compliant ramps at each end. UH-Hilo is willing to construct a sidewalk connecting the Lanikaula Off-Site Parking Lot to the campus when funds become available. The sidewalk will be designed to be as accessible as possible, given the limitations of the existing grade of West Lanikaula Street and the constriction of the existing bridge and power poles. ADA compliant stalls will be provided adjacent to campus buildings. There will be a gate to control access. The estimated cost for constructing the off-site parking lot is $2.5 million.

2.6 PROJECT TIMETABLE

The *Site Selection Analysis* provided a timeline and cost data for the proposed UH-Hilo Science Complex. It also provided the following possible scenario for phasing the development.

Phase 1

- Demolition of the Beaumont Agricultural Research Center and adjoining parking; and
- Construction of the Science and Technology Building and related parking.

Phase 2

- Demolition of the Life Science Building and possibly Portable Buildings 13 & 14; and
- Construction of the USGS Building and related parking.

Phase 3

- Demolition of Wentworth Hall; and
- Construction of the Pharmacy College Building and related parking.

Phase 4

- Demolition of the Marine Science Building and College Hall C; and
- Construction of the Expansion Building and related parking.

The following describes the timeline and approximate costs for development of each building within the proposed Science Complex. These facilities are shown on the proposed site plan (Figure 8).

Science and Technology Building and Lanikaula Off-Site Parking Lot

The 2006 Legislature earmarked $25 million to construct the Science and Technology Building. Construction of the off-site parking lot is expected to begin in the summer of 2007, with demolition and construction of the Science and Technology Building to follow. It is anticipated that the Science and Technology Building will be completed by early 2009.

United States Geological Survey (USGS) Building

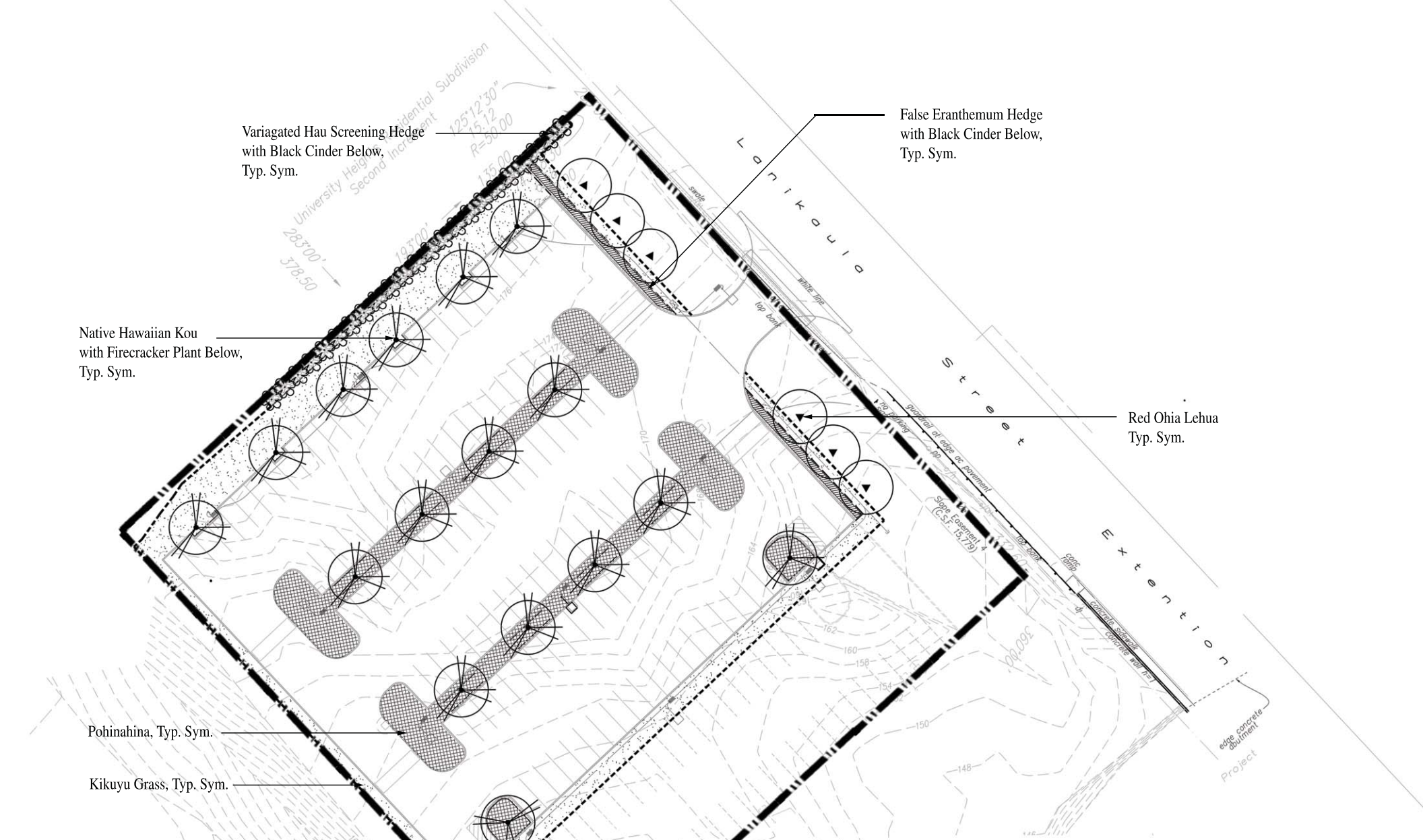
Federal funding will be needed for design and construction of the USGS Building. Therefore, timing of construction will be dictated by the appropriation of such funding.

Pharmacy College

The University of Hawai'i Board of Regents has approved the pharmacy program for UH-Hilo. A Project Development Report was recently completed for the Pharmacy College; however, design and construction funding are needed.

Expansion Building

Program space demands for the Expansion Building will dictate the timing for its development. Estimated costs are not available at this time.



LEGEND

Offsite Parking Lot

Figure 8a
Offsite Parking Lot

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NOT TO SCALE

PBR HAWAII

DECEMBER 2006

3.0
Land Use Conformance

3.0 LAND USE CONFORMANCE

This section describes the State of Hawai'i and County of Hawai'i land use plans, policies, and ordinances relevant to the proposed UH-Hilo Science Complex project.

3.1 STATE OF HAWAI'I

3.1.1 State Environmental Impact Statement Law, Chapter 343, Hawaii Revised Statutes

The State Environmental Impact Statement Law (Chapter 343, HRS) requires an environmental assessment for any action that proposes the use of State lands and funds. This environmental assessment has been prepared in compliance with Chapter 343, HRS, as the proposed UH-Hilo Science Complex will require both State lands and funds.

3.1.2 State Land Use Law, Chapter 205, Hawaii Revised Statutes

The State Land Use Law (Chapter 205, HRS) establishes the State Land Use Commission (LUC), which has the authority to designate all lands in the State into one of four districts: Urban, Rural, Agricultural, and Conservation. The proposed project site is within the Urban District (Figure 3).

3.2 COUNTY OF HAWAI'I

County of Hawai'i land use policies and plans related to the proposed project include the Land Use Pattern Allocation Guide (LUPAG) map in *The General Plan – Hawaii County* and the Hawaii County Code (Comprehensive Zoning Ordinance). The proposed UH-Hilo Science Complex site is located well outside of the Special Management Area (SMA).

3.2.1 The General Plan – Hawai'i County

The General Plan – Hawaii County (*General Plan*), adopted by ordinance in February 2005, is the policy document for the long-range development of the island of Hawai'i. The *General Plan* provides direction for the future growth of Hawai'i County and contains a series of land use maps referred to as the Land Use Pattern Allocation Guide (LUPAG) maps. The UH-Hilo Science Complex site is designated for University Use by the LUPAG maps (Figure 4). During the public review period for the Revised Draft EA, the County of Hawai'i Planning Department wrote: *"Although we agree that the General Plan Land Use Pattern Allocation Guide (LUPAG) Map's determination for the Science Complex is University Use; the off-site parking lot also appears to be entirely University Use."* UH-Hilo concurs with the Planning Department's interpretation of the LUPAG Map for the Science Complex and Lanikaula Off-Site Parking Lot as University Use. As such, appropriate changes were made in the Final EA.

Specific *General Plan* (February 2005) goals and policies applicable to the proposed UH-Hilo Science Complex project are discussed below.

Energy

1. Policies

a. Provide incentives that will encourage the use of new energy sources and promote energy conservation.

b. Coordinate energy research and development efforts of both the government and private sectors.

c. Encourage energy-saving design in the construction of buildings.

Discussion: Buildings within the UH-Hilo Science Complex will be designed with energy-saving considerations. Contractors will be instructed to provide a job-site recycling plan for construction waste and to use products with recycled content, where feasible. The proposed project will promote cost-effective energy conservation through the adoption of energy-efficient practices and technologies.

Environmental Quality

1. Goals

a. Define the most desirable use of land within the County that achieves an ecological balance providing residents and visitors the quality of life and an environment in which the natural resources of the island are viable and sustainable.

b. Maintain and, if feasible, improve the existing environmental quality of the island.

c. Control pollution.

2. Policies

a. Take positive action to further maintain the quality of the environment.

b. Reinforce and strengthen established standards where it is necessary, principally by initiating, recommending, and adopting ordinances pertaining to the control of pollutants that affect the environment.

c. Encourage the concept of recycling agricultural, industrial, and municipal waste material.

3. Standards

a. Pollution shall be prevented, abated, and controlled at levels that will protect and preserve the public health and well being, through the enforcement of appropriate Federal, State and County standards.

b. Federal and State environmental regulations shall be adhered to.

Discussion: Mitigation measures will be implemented during the construction and operation of the Science Complex facilities to help control pollution and maintain the existing environmental quality. Appropriate Federal, State, and County standards will be upheld, and where feasible, construction waste will be recycled and products with recycled content will be used. Additionally, a recycling shelter will be provided adjacent to the Science & Technology building; the space will be similar to existing recycling stations on campus and will house six recycle bins.

Flooding and Other Natural Hazards

1. Goals

a. Control pollution.

b. Reduce surface water and sediment runoff.

2. Policies

a. *Development-generated runoff shall be disposed of in a manner acceptable to the Department of Public Works and in compliance with all State and Federal laws.*

3. Standards

a. *"Storm Drainage Standards", County of Hawaii, October, 1970, and as revised.*

b. *Applicable standards and regulations of Chapter 27, "Flood Control" of the Hawaii County Code.*

c. *Applicable standards and regulations of the Federal Emergency Management Agency (FEMA).*

d. *Applicable standards and regulations of Chapter 10, "Erosion and Sedimentation Control", of the Hawaii County Code.*

e. *Applicable standards and regulations of the Natural Resources Conservation Service and the Soil and Water Conservation District.*

Discussion: The proposed UH-Hilo Science Complex will be designed to comply with all applicable standards and regulations related to flooding and natural hazards in order to reduce pollution and reduce surface water and sediment runoff. The off-site parking lot will contain six (6) drywells capable of handling up to 10-year storm events. The location of the off-site parking lot next to a channelized portion of the Waiākea Stream is not anticipated to cause any hazards, specifically because construction of the off-site parking lot will include the installation of six (6) drywells. UH-Hilo is considering the installation of porous paving surfaces for the Lanikaula Off-Site Parking Lot to assist in the management of storm water runoff while improving infiltration of rain water into the water table.

Land Use – Open Space and Public Land

1. Policies

a. Encourage uses of public lands that will satisfy specific public needs, such as housing, recreation, open space and education.

b. A sub-classification, University use, shall continue to be utilized, permitting the primary institutional and numerous supportive and accessory uses required for establishing and/or expanding a public university. Its designation shall continue to be shown on the Land Use Pattern Allocation Guide map.

Discussion: The proposed UH-Hilo Science Complex will use State lands and funds to provide enhanced public educational facilities and opportunities. The project is consistent with the *General Plan*, as the Land Use Pattern Allocation Guide Map (LUPAG) designates the project site for University use (Figure 4).

Natural Beauty

1. Goals

a. Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.

b. Protect scenic vistas and view planes from becoming obstructed.

c. Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

2. Policies

a. Increase public pedestrian access opportunities to scenic places and vistas.

b. Access easement to public or private lands that have natural or scenic value shall be provided or acquired for the public.

c. Develop standard criteria for natural and scenic beauty as part of design plans.

d. Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.

e. Do not allow incompatible construction in areas of natural beauty.

3. Standards

a. Natural or native vegetation attractive to a particular area.

b. Areas that are harmoniously developed and enhanced by man to appear natural.

Discussion: The proposed UH-Hilo Science Complex site is located several miles inland from the shoreline, and therefore, the quality of coastal scenic resources should not be affected. The proposed buildings have been designed to integrate with the existing site topography, which currently includes existing campus buildings, parking lots, and landscaping. Landscaping of the site will incorporate new native plants and existing mature trees to enhance the visual environment and screen views of the new buildings from nearby areas. The off-site parking lot will feature a dense hedge of variegated Hau (between 6 and 8 feet in height) that will serve as a buffer between the parking lot and the adjacent residence. An additional landscape strip of Kou trees will be located between the variegated Hau hedge and the first row of parking (Figure 8a).

Public Facilities

1. Goals

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.

2. Policies

a. Continue to seek ways of improving public service through the coordination of service and maximizing the use of personnel and facilities.
b. Coordinate with appropriate State agencies for the provision of public facilities to serve the needs of the community.

3. Standards

a. In proposed communities, sufficient acreage shall be reserved for school facilities. Sites shall be free from flooding and drainage problems, excessive slope and shall incorporate appropriate street and driveway design and location to minimize traffic interference, pedestrian hazard, and enable safe and easy access for vehicles, bicycles and pedestrians.

4. South Hilo Courses of Action

a. Provide pedestrian walkways to and around all school complexes.

b. Support the continued expansion of the University system and the University of Hawaii at Hilo and Hawaii Community College campus and encourage the continuing education programs throughout the community. The transfer of State lands to the University should be actively pursued.

c. Encourage continual improvements to existing educational facilities.

d. Support and encourage the strengthening of the University of Hawaii at Hilo through the transfer of appropriate colleges and departments from the University of Hawaii at Manoa to the University of Hawaii at Hilo.

e. *Encourage the implementation of existing State and University of Hawaii plans for the continued development of the "Research and Technology Park" on the campus of the University of Hawaii at Hilo.*

Discussion: The proposed project enhances the UH-Hilo as an institution of higher learning and represents continued improvement, on the part of the University of Hawai'i, to its existing educational facilities. The topography of the project site has been significantly modified to accommodate existing buildings. It is characterized by flatter building pads in areas graded for the existing buildings and steeper slope banks between structures. The site will require careful site planning to accommodate the Americans with Disabilities Act (ADA) of 1990 requirements. Pedestrian walkways will be provided around the buildings of the Science Complex and will integrate with existing walkways. The Science Complex site is not located in an area subject to flooding; however, appropriate on-site drainage improvements (as discussed in *Section 4.14 Drainage and Grading*) will be made. A portion of the off-site parking lot (0.7 acres) is located within Flood Zone A, which are areas inundated by one percent (1%) annual chance flooding. This is not anticipated to cause any problems and the off-site parking lot will be equipped with six (6) drywells to accommodate any runoff from the parking lot.

Public Utilities

1. Goals

a. *Ensure that properly regulated, adequate, efficient and dependable public and private utility services are available to users.*

b. *Maximize efficiency and economy in the provision of public utility services.*

2. Policies

a. *Improvement of existing utility services shall be encouraged to meet the needs of users.*

b. *Encourage the clustering of developments in order to reduce the cost of providing utilities.*

3. Water Policies

a. *Water system improvements shall correlate with the County's desired land use development pattern.*

b. *All water systems shall be designed and built to Department of Water Supply standards.*

c. *Improve and replace inadequate systems.*

d. *A coordinated effort by County, State and private interests shall be developed to identify sources of additional water supply and be implemented to ensure the development of sufficient quantities of water for existing and future needs of high growth areas and agricultural production.*

4. Water Standards

a. Public and private water systems shall meet the requirements of the Department of Water Supply and the Subdivision Control Code.

5. Telecommunications Policies

a. Encourage underground telephone lines where they are economically and technically feasible.

b. Work closely with the telephone company to provide all users with efficient service.

6. Telecommunications Standards

a. In the development and placement of telephone facilities, such as lines, telecommunications and cellular towers, poles, and substations, the design of the facilities shall consider the existing environment, and scenic view and vistas shall be considered and preserved where possible.

7. Electricity Policies

a. Power distribution shall be placed underground when and where practical. Encourage developers of new urban areas to place utilities underground.

b. Route selection for high voltage transmission lines should include consideration for setbacks from major thoroughfares and residential areas. Where feasible, delineate energy corridors for such high voltage transmission lines.

c. Conform to safety standards as established by appropriate regulatory authorities.

8. Electricity Standards

a. There shall be minimal obstruction of scenic view and vistas by electrical facilities.

9. Sewer Policies

a. Require major developments to connect to existing sewer treatment facilities or build their own.

10. Sewer Standards

a. Sewerage systems shall be designed for a particular area, depending on topography, geology, density of population, costs, and other considerations of the specific area.

b. Applicable standards and regulations of the State Department of Health, Chapter 23 "Underground Injection Control."

c. Applicable standards and regulations of the State Department of Health, Chapter 54 "Water Quality Standards."

d. Applicable standards and regulations of the State Department of Health, Chapter 55 "Water Pollution Control."

e. Applicable standards and regulations of the State Department of Health, Chapter 62, HRS, "Wastewater Systems."

f. Applicable standards and regulations of Chapter 342, HRS; Act 282, Session Laws of Hawaii 1985; and Act 302, Session Laws of Hawaii 1986, Relating to Environmental Quality.

g. All wastewater disposal systems shall conform to the applicable provisions of Chapter 11-62, Hawaii Administrative Rules for the Department of Health to ensure proper treatment and disposal of wastewater and to prevent further contamination of waterways, underground water sources, and the coastal waters.

11. South Hilo Courses of Action

a. Encourage the State Department of Health to monitor the wastewater received to provide sufficient base line data regarding the need for any future extension or expansion of wastewater collection systems.

Discussion: The proposed UH-Hilo Science Complex will be designed with energy-efficient technologies. The water system will be designed and built in compliance with the County Department of Water Supply standards and the Subdivision Control Code requirements. Coordination with Hawaiian Telcom and the Hawaii Electric Light Company, Inc. (HELCO) will take place at the appropriate stage of construction, and the project will conform to the electricity safety standards established by appropriate regulatory authorities. The proposed UH-Hilo Science Complex will connect to the existing sewer treatment facility and will comply with applicable standards and regulations.

3.2.2 Hawai'i County Zoning

The *General Plan* is also the basis for Ordinance No. 63, the County Comprehensive Zoning Ordinance. The entire project site is zoned RS-10 Single Family Residential (Figure 5). The maximum building height within the RS-10 Single Family zoning district is 35 feet. This generally limits buildings to a two- to three-story configuration, unless a special variance is granted by the County. While most of the Science Complex facilities will remain within the 35-foot height restriction, it is expected that the Science and Technology Building will be approximately 67'4". Thus, UH-Hilo will need to obtain a height variance permit prior to the start of construction.

3.2.3 Special Management Area

The Special Management Area was established to protect coastal resources in areas extending inland of the shoreline. The proposed project site is not in the Special Management Area (SMA).

3.3 FEDERAL

3.3.1 Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) of 1990 sets forth guidelines for accessibility to buildings and facilities by individuals with disability. The UH-Hilo Science Complex facilities will comply with the guidelines and regulations issued by Federal agencies under the ADA. Due to the sloping topography, the proposed project will require careful site planning to accommodate ADA requirements.

3.4 UNIVERSITY OF HAWAI'I AT HILO LONG RANGE DEVELOPMENT PLAN

The *University of Hawaii at Hilo Long Range Development Plan* (LRDP) (March 1996) serves as a guide to the form and character of the campus. The LRDP (Figure 9) seeks to achieve a safe, efficient, cohesive, and pleasant campus environment that supports the University's programs, goals, and overall mission.

In relation to the proposed Science Complex site, Figure 10 (which is LRDP Figure 2.1 – Building Condition Diagram) shows the condition of campus facilities, as of 1995. The Beaumont Agricultural Research Center (Building 350) and College Hall C (Building 345C) are shown to be in poor condition. Portable Buildings 13 and 14 (Buildings 337D and 337E), which may need to be removed, are shown to be in fair condition. Wentworth Hall (Building 348) and the Life Science Building (Building 344) are in good condition. The Marine Science Building is not shown in this figure. Each of these buildings would be demolished for the proposed development; however, building conditions are likely to have worsened over the ten years since the LRDP was developed. Additionally, Figures 11 and 12 (which are LRDP Figure 2.2 – Building Planning Status and Figure 6.1 – Existing Site Plan) show plans to remove the Beaumont Agricultural Research Center, College Hall C, and Portable Buildings 13 and 14.

The LRDP also shows campus views offered from West Lanikaula Street, near the Beaumont Agricultural Research Center (Figure 13) (LRDP Figure 2.4 – Existing Physical/Environmental Determinants). These views are not expected to be impacted by the proposed Science Complex, as no zoning changes are proposed. The Science Complex will remain within the Hawai'i County RS-10 zoning district and the majority of the facilities will remain within the 35-foot height restriction. The Science and Technology Building will be approximately 67'4", and as such, a height variance will need to be obtained prior to the start of construction.

The off-site parking lot will be able to accommodate the future parking needs of the Science Complex as well as the University itself.

3.5 APPROVALS AND PERMITS REQUIRED

A list of permits and approvals required for the proposed UH-Hilo Science Complex project is shown below.

Table 1 – Required Permits and Approvals

PERMIT/APPROVAL	RESPONSIBLE AGENCY
Grading/Building Permits	County of Hawai'i, Department of Public Works
Water	County of Hawai'i, Department of Water Supply
ADA Accessibility	Disability and Communication Access Board
Approval for Sewer Connection	County of Hawai'i, Department of Environmental Management
Plan Approval	County of Hawai'i, Planning Department
Height Variance Permit	County of Hawai'i, Planning Department

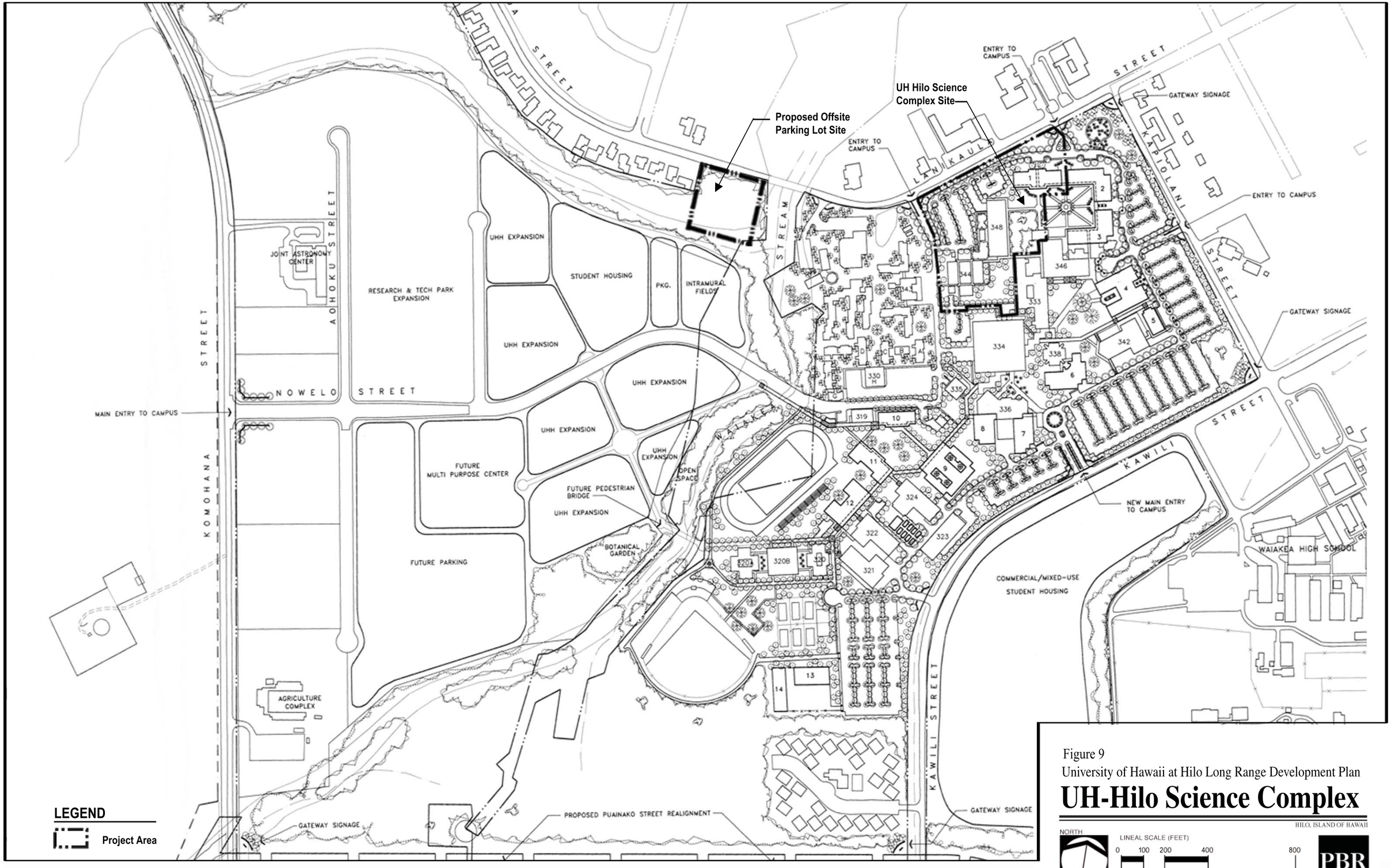


Figure 9
University of Hawaii at Hilo Long Range Development Plan

UH-Hilo Science Complex

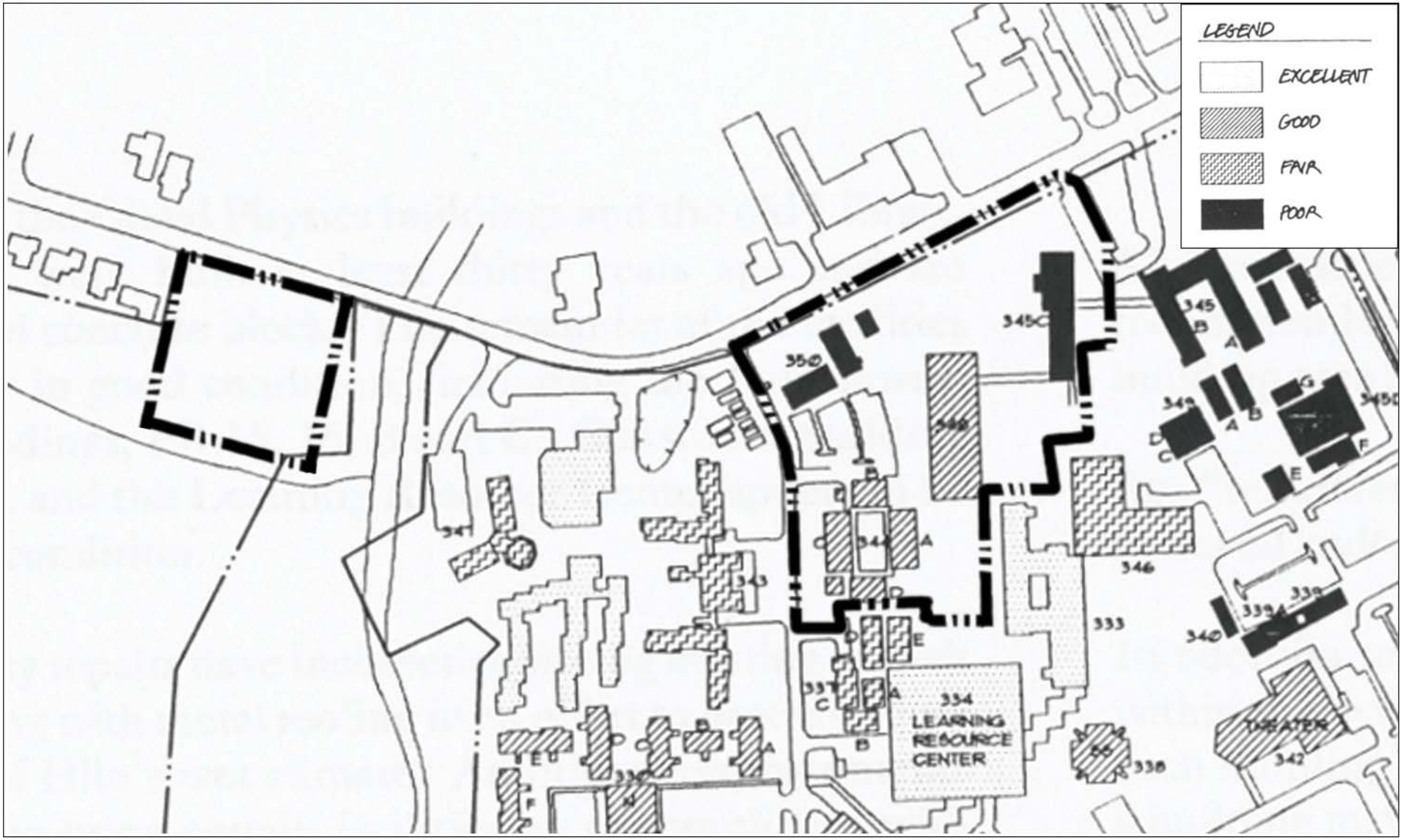
HILO, ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)
0 100 200 400 800

PBR HAWAII

DECEMBER 2006



LEGEND

Project Area

Source:
University of Hawaii at Hilo Long Range Development Plan Figure 2.1 (1995)

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Figure 10
Building Condition Diagram (1995)

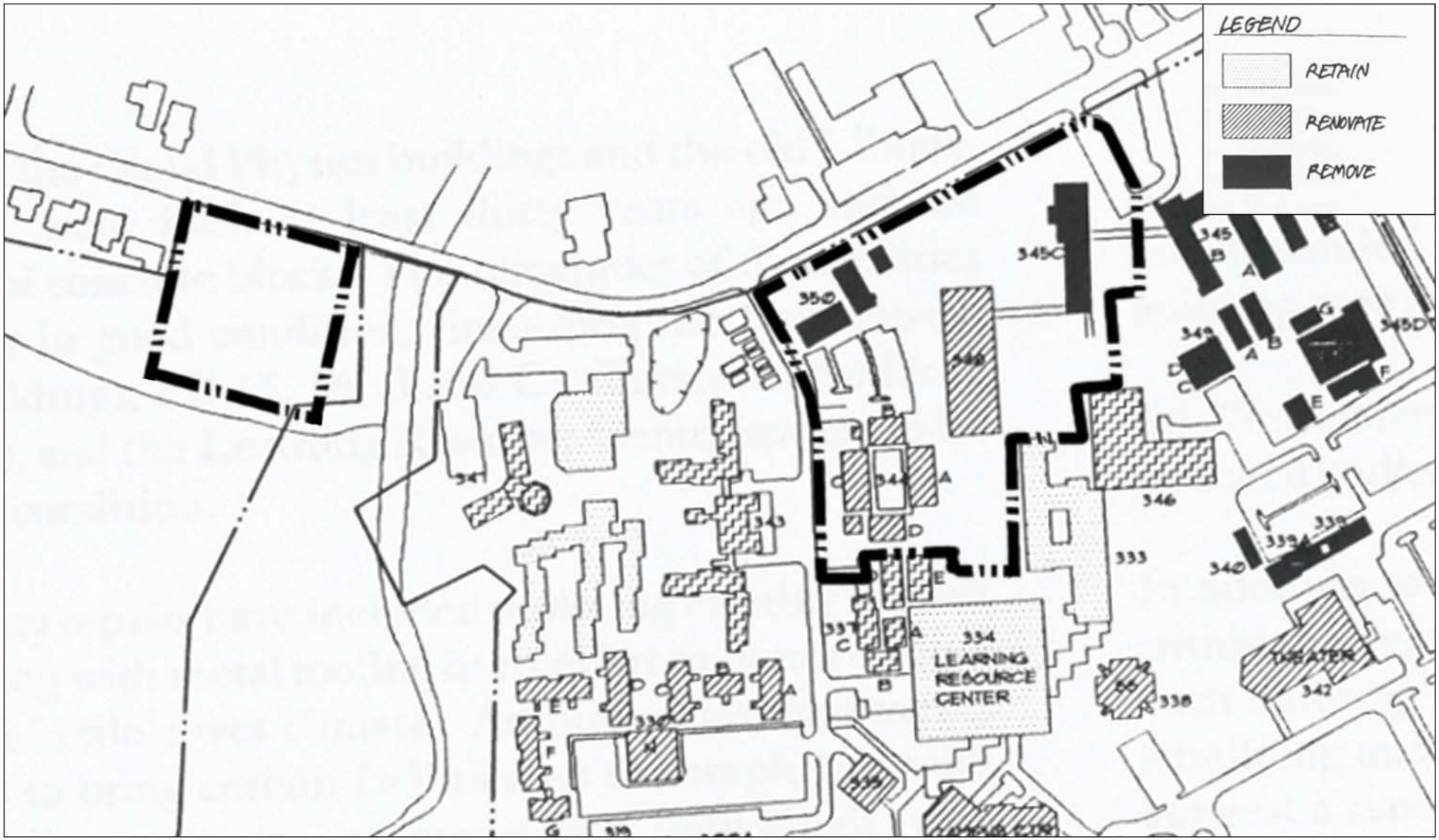
UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

LINEAL SCALE (FEET)
0 125 250 500

PBR HAWAII

DECEMBER 2006



LEGEND

Project Area

Source:
University of Hawaii at Hilo Long Range Development Plan Figure 2.2 (1995)

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Figure 11
Building Planning Status (1995)

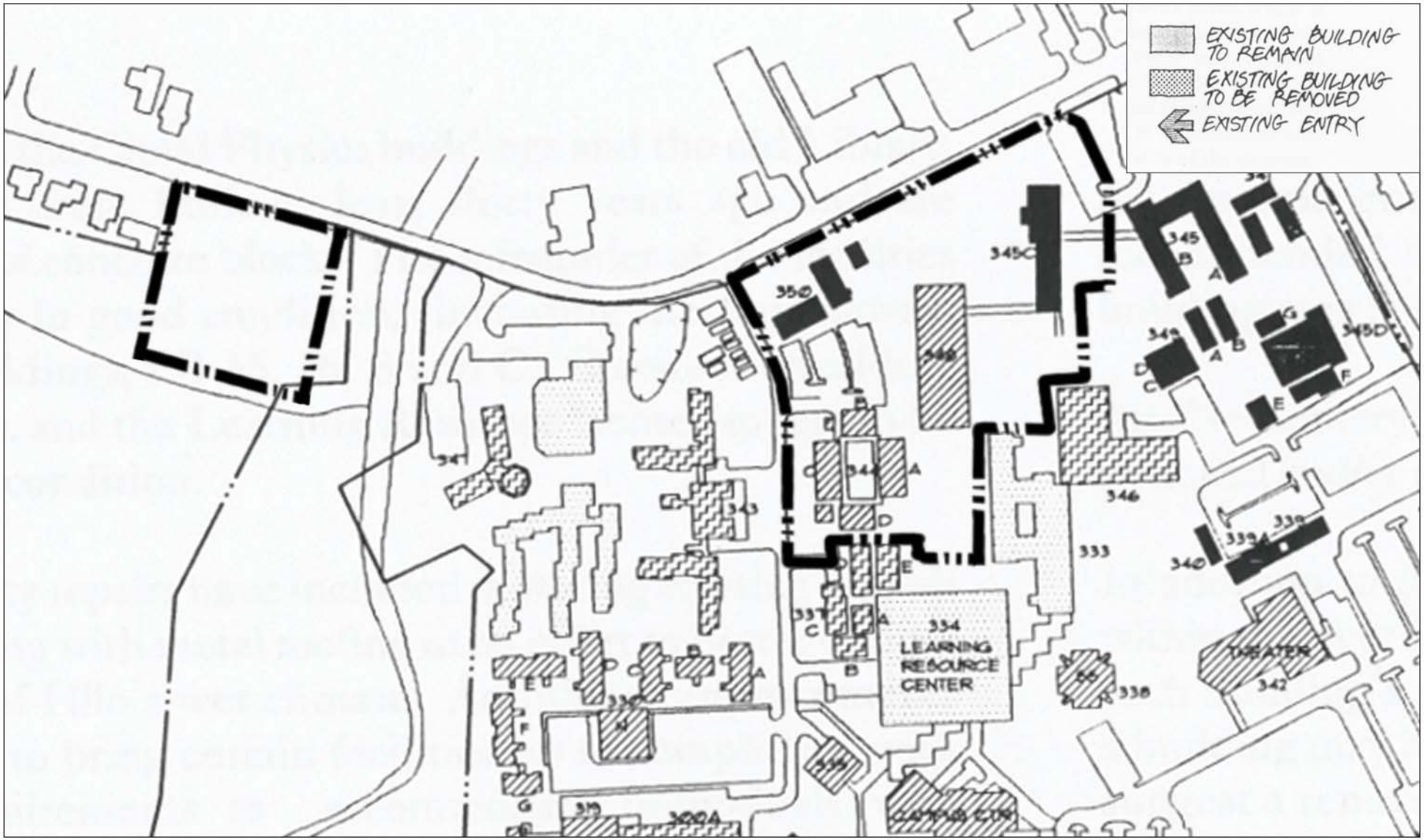
UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

LINEAL SCALE (FEET)
0 125 250 500

PBR HAWAII

DECEMBER 2006



LEGEND

Project Area

Source:
University of Hawaii at Hilo Long Range Development Plan Figure 6.1 (1995)

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Figure 12
Existing Site Plan (1995)

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

LINEAL SCALE (FEET)
0 125 250 500

PBR HAWAII

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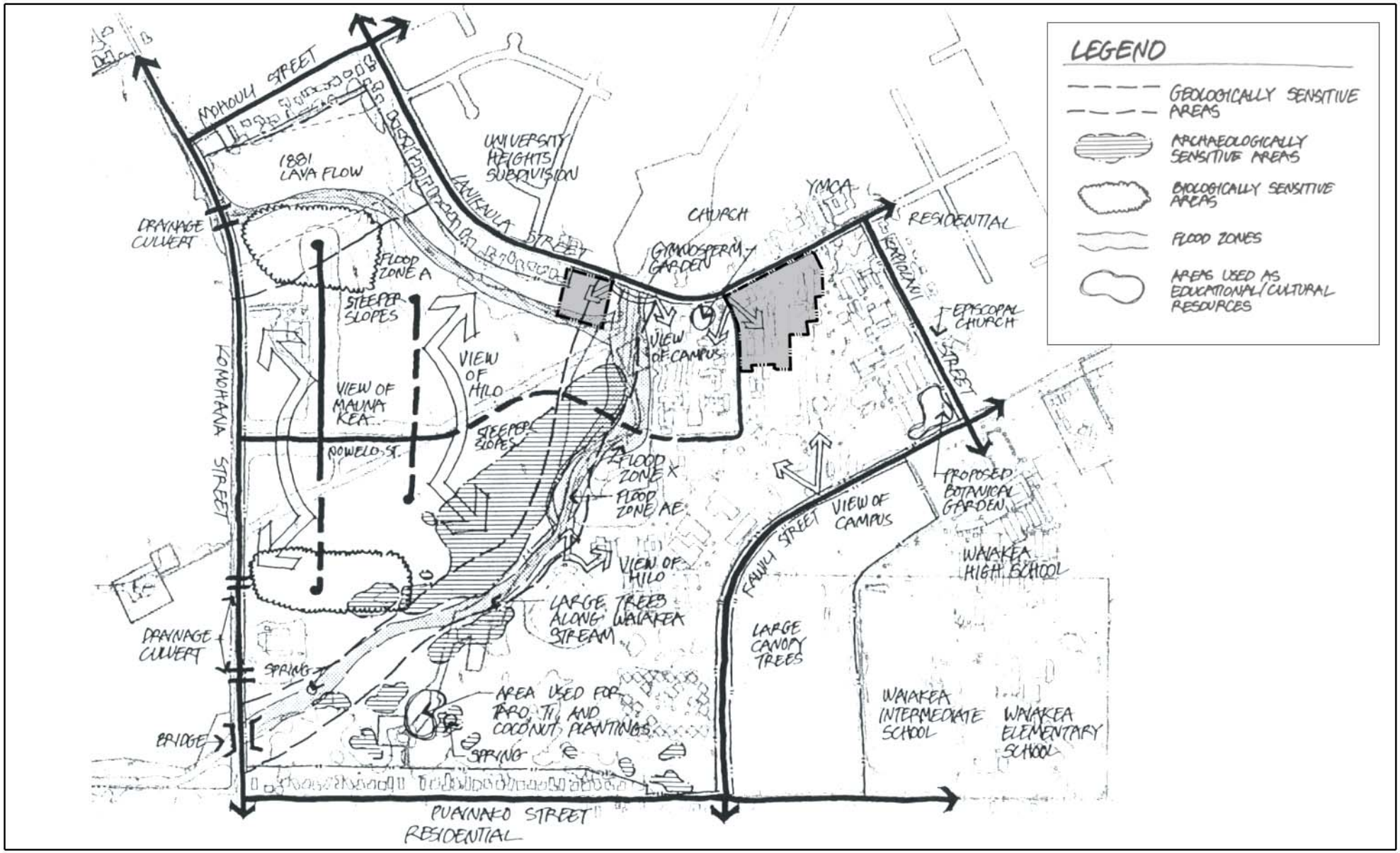

LEGEND

Project Area

Source:
University of Hawaii at Hilo Long Range Development Plan Figure 2.4 (1995)

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Figure 13
Existing Physical/Environmental Determinants (1995)

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

LINEAL SCALE (FEET)
0 450 900 1800

PBR HAWAII

DECEMBER 2006

4.0

Assessment of the Existing Environment, Potential Impacts of the Proposed Action, and Mitigation Measures

4.0 ASSESSMENT OF THE EXISTING ENVIRONMENT, POTENTIAL IMPACTS OF THE PROPOSED ACTION, AND MITIGATION MEASURES

This chapter discusses the existing environment of the proposed project area, including physical, biological, social, economic, and infrastructure conditions. It also identifies potential impacts that may result from the project and provides mitigation measures that may be implemented.

4.1 CLIMATE

4.1.1 Existing Conditions

The climate in the Hilo area is very moderate, with average daily minimum and maximum temperatures ranging from 66 (low) to 82 (high) degrees Fahrenheit. Rainfall in Hilo is substantial with an average of 129 inches per year. Northeast trade winds typically occur during the day, while winds from the southwest typically occur during the night due to cold air drainage from the mountains. The mean annual wind speed recorded at the Hilo International Airport (about three miles northeast of the UH-Hilo main campus) is about 8 miles per hour (mph) and usually varies between about 4 and 12 mph during the day.

4.1.2 Potential Impacts and Mitigation Measures

The proposed Science Complex is not expected to have any impact on climatic conditions in the project area or region. As such, no mitigation measures have been identified.

4.2 TOPOGRAPHY

4.2.1 Existing Conditions

The island of Hawai'i is the largest island in the Hawaiian Archipelago. It covers an area of approximately 4,000 square miles, which is larger than all of the other Hawaiian Island combined. The island was formed by five shield volcanoes: 1) Kohala – long extinct; 2) Mauna Kea – some activity during recent geologic times; 3) Hualālai – last erupted in 1801 and considered dormant; 4) Mauna Loa – active; and 5) Kīlauea – active. The UH-Hilo Campus is located on the eastern side of the island on the lower, northeastern flank of Mauna Loa.

The proposed Science Complex site is located on the main campus of UH-Hilo. The site slopes from the west to the east (mauka to makai) from an elevation of about 145 feet above mean sea level (msl) at the Beaumont Agricultural Research Center to about 110 feet above msl at College Hall C. The site has been previously modified to accommodate existing facilities and is characterized by flatter building pads in areas graded for existing buildings and steeper slope banks between structures.

The proposed off-site parking lot is located on the main campus of UH-Hilo. The site slopes from the west to the east (mauka to makai) and has an average slope of approximately 10

percent. A significant amount of grading will be required in order to prepare a relatively flat pad for parking purposes; there will be approximately 7,000 cubic yards of cut material.

4.2.2 Potential Impacts and Mitigation Measures

Although the Science Complex site has already been significantly altered, grading activities associated with development of the proposed Science and Technology Building and Expansion Building could be extensive. Grading for the proposed Pharmacy College and the USGS Building are not expected to be extensive. The natural flow of storm water from southwest to the northeast will be maintained. Due to the sloping topography, the proposed project site will require careful site planning to accommodate the ADA requirements.

The cut material from the off-site parking lot site will be re-used to fill cesspools on the Science & Technology building site as well as for aggregate fill for various locations on both the Science & Technology building site and the off-site parking lot site.

4.3 SOILS

4.3.1 Existing Conditions

The U.S. Department of Agriculture, Soil Conservation Service's *Soil Survey of the Island of Hawaii, State of Hawaii* (1973), includes general soils maps based on soil surveys. These soil maps show the developed soil associations, which are classified by soil series and soil phase.

The majority (93 percent) of the soils on the UH-Hilo Science Complex and off-site parking lot sites are Keaukaha Extremely Rocky Muck, 6 to 20 percent slopes (rKFD) (Figure 14). A small portion (less than 1 percent) of the site, near the campus entry road off West Lanikaula Street, contains Papai Extremely Stony Muck, 3 to 25 percent slopes (rPAE). At the southeast corner of the site, soils are ʻŌlaʻa Extremely Stony Silty Clay Loam, 0 to 20 percent slopes (OID).

The Keaukaha series consists of well-drained, thin organic soils overlying pāhoehoe lava bedrock. Keaukaha Extremely Rocky Muck, 6 to 20 percent slopes (rKFD) is found near the city of Hilo. It is undulating to rolling and follows the topography of the underlying pāhoehoe lava. Permeability is rapid, runoff is medium, and the erosion hazard is slight.

The Papai series consists of well-drained, thin, extremely stony organic soils over fragmental ʻaʻā lava. Papai Extremely Stony Muck, 3 to 25 percent slopes (rPAE) is low on the windward side of Mauna Kea. Permeability is rapid, runoff is slow, and the erosion hazard is slight.

The ʻŌlaʻa series consists of well-drained, silty clay loams that formed in volcanic ash. ʻŌlaʻa Extremely Stony Silty Clay Loam, 0 to 20 percent slopes (OID) is undulating to rolling and has a dominant slope of about 12 percent. Permeability is rapid, runoff is slow, and the erosion hazard is slight.

LEGEND

Soil Types

- (OID) OLAA Extremely Stony Silty Clay Loam, 0-20% Slopes
- (PeC) PANAEWA Very Rocky Silty Clay Loam, 0-10% Slopes
- (rKFD) KEAUKAHA Extremely Rocky Muck, 6-20% Slopes
- (rPAE) PAPAI Extremely Stony Muck, 3-25% Slopes
- Project Site Boundary

Source:
U.S. Natural Resources Conservation Service

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Figure 14
Soil Conservation Service Soil Survey Map

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 150 300 600

PBR HAWAII

DECEMBER 2006

4.3.2 Potential Impacts and Mitigation Measures

The Science Complex site is located on the UH-Hilo main campus, which has been developed over a number of years. Construction of the proposed facilities is not expected to have a significant impact on the existing topography, and the erosion hazard for all three soil types is slight. Winds in Hilo are generally light, and the potential for soil erosion is more likely result from storm runoff. Potential impacts from clearing, grading, and construction activities will be mitigated by erosion control measures (i.e., silt fences and a gravel ingress/egress at the project site) that would be developed during the final design of the project. Effective design of the new facilities will minimize cut and fill disturbances, and the project will comply with regulations established by *Hawaii County Code*, Chapter 10, Erosion and Sedimentation Control. All drainage, grading, and erosion control activities will be designed and constructed in accordance with applicable County Department of Public Works (DPW) standards and State Department of Health (DOH) provisions.

4.4 NATURAL HAZARDS

4.4.1 Existing Conditions

The island of Hawai'i is subject to earthquakes, lava flows, hurricanes, tsunami, and flooding hazards. Hawai'i experiences thousands of earthquakes each year, but most are only detectable by instruments. Since 1868, most of the larger, damaging earthquakes (magnitude 6 or greater) have occurred in the southeastern region of the island of Hawai'i. The largest earthquake near the Hilo area had a magnitude of 6.2 and occurred in Honomū in 1973. The entire island is designated Zone 4 for seismic hazard.

The current United States Geological Service volcanic hazard zone map divides the island into zones (ranked from 1 through 9, with Zone 1 being the area of highest hazard) based on probability of coverage by lava flows. According to this map the entire Hilo area is within Zone 3. This hazard rating indicates that the zone is gradationally less hazardous than Zone 2 because it is a greater distance from active vents and the topography makes it less likely to be covered by lava flows. Zone 3 has had one to five percent covered by lava since 1800, and 15 to 75 percent has been covered in the last 750 years.

Compared to Kaua'i, the island of Hawai'i has historically received less threat and damage from hurricanes. However, as with other existing and future developments in the South Hilo District and island-wide, structures built on the project site could potentially be damaged by high winds and heavy rainfall from a hurricane passing over the island. The proposed buildings will likely be built to Uniform Building Code Type 1 Fire Resistive Construction, which is defined as structural frame of fire-protected structural steel or iron, or of concrete; exterior walls, inner courts, and walls enclosing vertical openings, of fire-resistive construction; roof construction and floors of fire-resistive construction, doors, windows, and other openings in exterior walls protected by Class E or F fire doors or windows. As such, damage is less likely to occur from high winds than from flooding.

According to the Flood Insurance Rate Map (FIRM), the entire UH-Hilo Science Complex site is designated Zone X, which includes areas beyond the 100-year and 500-year floodplains (Figure 15). The site is located approximately 1.3 miles from the shoreline and is outside of the Hilo tsunami evacuation area, which near the project site includes areas below an approximate elevation of 40 feet). As previously noted, the lowest elevation of the project site is 110 feet above mean sea level. The majority of the Lanikaula Off-Site Parking Lot is located within Zone X. Approximately 0.7 acres of the parking lot is located within Zone A, which are areas inundated by one percent (1%) annual chance flooding.

4.4.2 Potential Impacts and Mitigation Measures

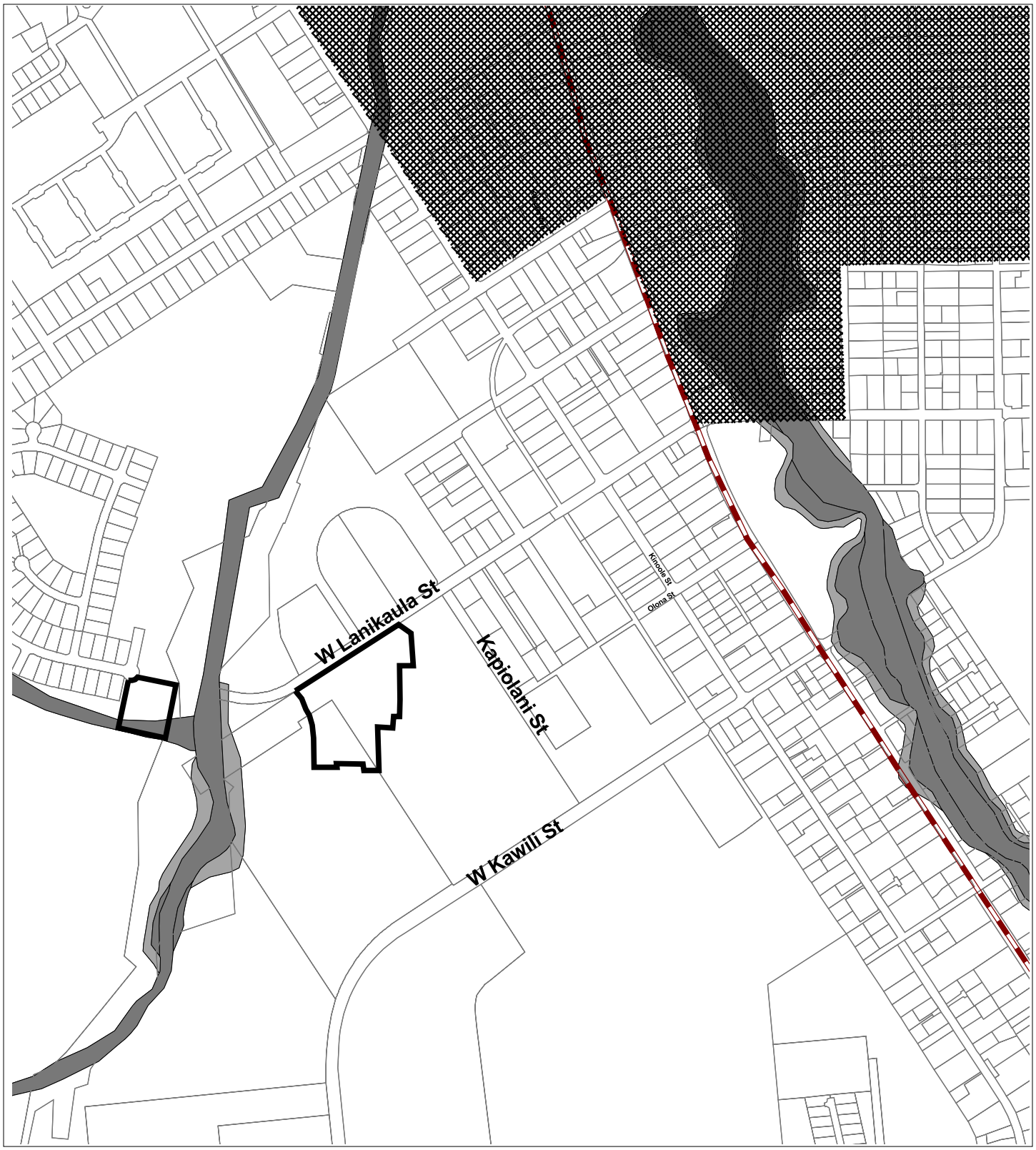
Although the potential for future natural hazards of significant force is low, the project site may be subject to damage from earthquakes, lava flows, hurricanes, and/or extreme flooding events. However, the project site is no more susceptible to damage caused by natural hazards than other homes and buildings in the surrounding Hilo community, given that the majority of the site is outside of the 100-year and 500-year floodplains (Zone X), the entire island is designated Zone 4 for seismic hazard, and the entire Hilo area is designated Zone 3 for lava flow hazard. To minimize the potential damage from earthquakes, the proposed facilities would be structurally designed and constructed in accordance with applicable County design requirements and standards for Zone 4 areas. Although the project site is located beyond the 100-year and 500-year floodplains (Figure 15), drainage improvements (discussed in *Section 4.14 Drainage and Grading*) will comply with County building codes and design standards.

4.5 BOTANICAL RESOURCES

4.5.1 Existing Conditions

The proposed Science Complex site has been significantly modified to accommodate existing buildings. Landscaped areas are characterized by large open areas with clusters of ornamental trees and palms. Shrubs and groundcover are planted to frame individual buildings. Tree plantings along West Lanikaula Street near the project site are sparse and inconsistent. A few Plumeria trees are planted at the campus entry roadway off West Lanikaula Street, near the Beaumont Agricultural Research Center. Landscaping of the parking area adjacent to the Life Science Building is sparse, and the service area for this building is partially screened with Rhapis palm and Ti-leaf plants. A large Canopy tree is adjacent to the Life Science Building and other trees are planted intermittently along pathways within the site. A protected green belt and a rare unidentified tree are located near the Beaumont Agricultural Research Center. The Science Complex site does not appear to have an overall landscape theme due to the assortment of trees; however, existing ornamental trees and palms are mature and described as valuable.

The off-site parking lot site is heavily overgrown with Strawberry guava (*Psidium cattlenium*) to the point where it limits the ability to walk through the site easily. Other plants identified in the area include: "Lucky bamboo" (*Dracaena sanderiana*), Kupukupu lauli'i or Narrow sword fern (*Nephrolepis cordifolia*), Uluhe (*Dicranopteris linearis*), Heart leaf philodendron (*Philodendron scandens*), Wedelia (*Wedelia trilobata*), 'Ōhi'a lehua (*Metrosideros polymorpha*), Ti leaf (*Cordyline terminalis*), Laua'e fern (*Phymatosorus scolopendria*), African tulip (*Spathodea campanulata*) and a large mango tree (Mangifera indica).



LEGEND

Flood Zone

- Zone X: Areas Beyond 100-year and 500-year Floodplains
- Zone X-500: Areas of 500-year Floodplains
- Zone A: Areas Inundated by 1% Annual Chance Flooding
- Tsunami Inundation/Evacuation Area
- Project Site Boundary

Source:
Federal Emergency Management Agency; County of Hawaii

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This graphic has been prepared for general planning purposes only.

Figure 15
Flood Insurance Rate Map and Tsunami Inundation/Evacuation Map

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 150 300 600

PBR HAWAII

DECEMBER 2006

4.5.2 Potential Impacts and Mitigation Measures

Existing botanical resources, with the exception of the rare tree located near the Beaumont Agricultural Research Center, will be removed and replanted in order to develop the proposed Science Complex. Careful site planning will prevent adverse impacts to the rare tree.

Most of the on-site landscaping is ornamental and no native species will be impacted by the proposed development. The project will comply with *Hawaii Revised Statutes*, Act 73, which mandates that any new or renovated landscapes for any building, housing, or other facility developed with State funds must incorporate native Hawaiian plants wherever and whenever feasible. As such, a landscaping plan will be developed to incorporate native plant species, without compromising student safety.

The off-site parking lot site will be completed cleared of all vegetation. The parking lot will be re-landscaped with a variegated Hau hedge, approximately sixteen (16) Kou trees and six (6) red ʻŌhiʻa lehua trees, ground cover such as Pōhinahina will also be used. The future landscaping of the off-site parking lot is expected to improve the area as native plants will be replacing alien species.

During the public review period for the Revised Draft EA, the Office of Environmental Quality Control wrote: *"your landscaping plan may include invasive plant species."* UH-Hilo has had the landscape plan reviewed by its resident professor of botany, and the landscape plan will be modified to reduce the amount of invasive plant species.

4.6 MAMMALIAN AND AVIAN SPECIES

4.6.1 Existing Conditions

Although no formal study of mammalian and avian species has been conducted for this highly urbanized and utilized site, it is unlikely for any native species to be found on the proposed project site or elsewhere within the urbanized UH-Hilo main campus. A wildlife survey conducted in October 2003 for the *University of Hawai'i at Hilo – Mauka Lands Master Plan Draft Environmental Impact Statement* observed no native forest bird species and no threatened or endangered species. It is generally accepted that stresses brought about by introduced plants, animals, diseases, and parasites have eliminated lowland populations of native birds.

The Mauka Lands site is close to the proposed Science Complex site, but is vacant and characterized by thick forest. As such, the number and types of birds observed in the wildlife survey of the undeveloped Mauka Lands site are likely to be greater and more diverse than what exists at the developed Science Complex site, which is intermittently landscaped and provides only ornamental landscaping. According to the wildlife survey of the Mauka Lands site, typical introduced mammalian species that may be found in the vicinity of the Mauka Lands site include: small Indian mongooses, cats, or feral dogs. Rats and house mice are also likely to occur in the general area, including the Science Complex site. Pacific Golden Plovers or Kōlea were seen in flight around the Mauka Lands site. Eight (8) introduced species were observed, with Melodious Laughing Thrushes (*Garrulax canorus*) and Japanese White-eyes (*Zosterops japonica*) being the two most abundant. Spotted Doves (*Streptopelia chinensis*) were seen and

heard throughout the site, foraging with other species like Zebra Doves (*Geopelia striata*). Northern Cardinals (*Cardinalis cardinalis*), Nutmeg Mannikins (*Lonchura punctulata*), House Finches (*Carpodacus mexicanus*), and Common Mynas (*Acridotheres tristis*) were also observed. All of the above species have been observed or are presumed to frequent the Science Complex site.

Although no formal study of mammalian and avian species has been conducted for the off-site parking lot site, the wildlife survey for the mauka lands parcel observed no threatened or endangered species, and it is generally acknowledged that lowland populations of native birds have been eliminated from most areas of Hilo.

4.6.2 Potential Impacts and Mitigation Measures

Construction of the new Science Complex facilities is not expected to have a significant impact on mammalian and avian species. No native birds or threatened or endangered species are likely to be found on the project site, as relatively little habitat is provided by the ornamental landscaping. Introduced species found on the project site may be temporarily displaced by the removal of existing trees and structures during construction. However, as discussed in *Section 4.5 Botanical Resources*, a landscaping plan will be developed to incorporate native plant species, and upon completion of the Science Complex, there will be more trees, plants, and shrubs to provide habitat for more than likely introduced avian and mammalian species.

4.7 ARCHAEOLOGICAL AND CULTURAL RESOURCES

4.7.1 Existing Conditions

Archaeological Resources

According to the 1996 LRDP, no archeological studies have been documented for the UH-Hilo main campus, which has no known archaeological sites. The LRDP states that the State Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) indicated that none of the structures on campus appear on either the National or State Registries of Historic Places.

The proposed Science Complex site consists of several existing facilities and a 66-stall parking area adjoining the Beaumont Agricultural Research Center. The site has been previously modified to accommodate existing buildings, and no archaeological sites are anticipated to be found.

Cultural Resources

The *UH-Hilo Science Complex: Site Selection Analysis* (*Site Selection Analysis*) stated that there may be cultural significance associated with the property, and this would need to be investigated as part of the requirements of Chapter 343, HRS (State Environmental Impact Statement Law). A cultural impact assessment was conducted in January 2005 to identify potential impacts of the proposed Science Complex on traditional cultural practices, including native Hawaiian gathering rights. The assessment included a review of existing archaeological information and oral interviews with cultural practitioners familiar with the area. The cultural impact assessment is included below in its entirety.

History

Waiākea and Hilo have always been considered rich and sustainable areas to live in. Because of their resources, Waiākea and Hilo are associated with a number of Hawai'i's most prominent *ali'i* (chiefs) and are often mentioned in Hawaiian folklore and history. Both Hilo and Waiākea are mentioned as being residences or as favorite visiting places in famous stories such as: Hi'iaka and Pele, 'Umi-a-Liloa,'Ulu, Kawelo, Keaomelemele, and Kūapāka'a. In narratives recorded by Kepā Maly, the lands of Waiākea were actually named after a high chief:

> *…the lands of Waiākea were named for the high chief Waiākea-nui-kumuhonua. The brother of Pi'ihonua-a-ka-lani and Pana'ewa-nui-moku-lehua. After departing from Pana'ewa, Ka-Miki mā met Haili-kula-manu, who was a guardian of Waiākea. Haili led Ka-Miki and his companions to his chief's compound at Kalepolepo [February 17,1916]. Arrangements were made for Ka-Miki to compete with the 'ōlohe – experts of Waiākea, with the events to be held at the kahua [contest site] at Kalepolepo...*

Waiākea was also the home of 'Ulu, a legendary man living in a time of famine. 'Ulu eventually died of starvation and was buried next to a fresh water spring. The next day, an *'ulu* (breadfruit) tree filled with fruit stood where he was buried and put an end to the famine in Waiākea. In *Native Planters in Old Hawai'i*, Handy and Handy recorded the agricultural development of Waiākea and Hilo:

> *In lava-strewn South Hilo there were no streams whose valleys or banks were capable of being developed in terraces, but [taro] cuttings were stuck into the ground on the shores and islets for many miles along the course of the Wailuku River far up into the forest zone. In the marshes surrounding Waiākea Bay, east of Hilo, taro was planted in a unique way known as kanu kipi…On the lava-strewn plain of Waiākea and the slopes between Waiākea and the Wailuku River, dry taro was formerly planted wherever there was enough soil. There were forest plantation in Pana'ewa and in the lower fern-forest zone above Hilo Town and along the course of the Wailuku River (Handy & Handy, 1972)*

Waiākea was very rich in agriculture in ancient times and became a home for sugar plantations from the mid-1800s through the mid-1900s. Waiākea and Hilo's lands were filled with crops of sugar, as commercial sugar became the primary industry. Waiākea Mill was the largest mill in the district, but by the time of statehood, sugar production in Hilo had declined and the mill eventually shut down. Tourism soon replaced agriculture as the economic mainstay. Hilo now includes an airport, hotels built along Hilo Bay, residential subdivisions, and an accredited University.

The University of Hawai'i at Hilo (UH Hilo) campus is situated in the city of Hilo, about 117 acres to the east of the Wailoa Flood Control Channel. West of the flood plain is an additional 173-acre area containing the University Park. With over 3,300 students, UH Hilo is continuously expanding its facilities and has quickly become one of Hawai'i's premier universities and a center for not only education and research on the island, but a center for culture and the arts, and employment.

Existing Conditions

Prior to construction of the main campus, the area consisted of mostly 'Ōhi'a and Uluhe trees. Scattered areas also show evidence of sugar cultivation from the plantation era. The proposed project is located on the main campus adjacent to West Lanikaula Street.

The following individuals were contacted via phone and/or electronic mail: Mrs. Pualani Kanahele (Professor at UH Hilo, noted Kumu Hula of Hālau 'o Kekuhi, and co-founder of The Edith

Kanaka'ole Foundation), Mr. Jeno Enoncencio (Native Hawaiian Historic Preservation Council), Mr. Kepā Maly (Hawaiian Cultural Specialist, Kumu Pono Associates), Ms. Ululani Sherlock (OHA Community Resource Coordinator), and Ms. Kealoha Piscotta (Mauna Kea Anaina Hou).

Both Mr. Jeno Enocencio and Ms. Kealoha Piscotta were unavailable for comment. Mrs. Pua Kanahele, currently a faculty member of UH Hilo, said that she does not know of any cultural attachments to the proposed site. Ms. Sherlock responded with the following:

> *I have several oral histories regarding the campus surroundings but not the campus itself, which I'm sure exists. As far as I can see on a personal note, if there were things of importance in the area, and I have no doubt since the latest I received were 'iwi (human remains) found in the back of a lot in Paradise Park off the main highway to Pahoa, it has already been graded over with the existing buildings. It would be great if the UH-Hilo maintained records in the Special Collections area of the Mo`okini Library for student research, if nothing else.*

There are no known archaeological sites on the existing campus. According to 1996 LRDP for UH Hilo, consultation with the Department of Land and Natural Resources State Historical Preservation Division indicates that none of the structures on campus appear on either the National or State Registries of Historic Places. When asked if the project site had any cultural attachments, Kepa Maly responded with the following:

> *... it appears that the four buildings are situated on existing foot-prints and in areas that have been extensively modified as a part of the past UH-H(ilo) grading and construction projects.*
>
> *I have done extensive research in the Waiakea-Kukuau region and not uncovered anything specific to that site, other than the plantation use of the land from ca. 1900 till it was turned over to UH-H(ilo).*

The proposed site is not located in any of the areas designated for cultural use nor does it appear have any historical cultural attachments.

4.7.2 Potential Impacts and Mitigation Measures

No historical, archaeological, or cultural resources are anticipated to be found on or associated with the proposed Science Complex site. However, should any significant archaeological features be uncovered during construction, work will stop immediately and the Department of Land and Natural Resources, Historic Preservation Division (SHPD) will be notified in accordance with applicable regulations.

The SHPD believes that the general area near the off-site parking lot was known to contain both traditional habitation and agricultural sites. Therefore, as recommended by SHPD, an archaeologist has been contracted to conduct an Archaeological Inventory Survey (AIS) for the off-site parking lot. The AIS will be completed and submitted to SHPD prior to the issuance of grading and building permits for the proposed project.

Subsequent to the publication of the Revised Draft EA, an archaeological assessment was conducted by Haun & Associates for the off-site parking lot. No archaeological sites were identified during the survey. As such, no further archaeological work was recommended based on the findings of the survey. The archaeological assessment has been submitted to SHPD for review. The entire assessment can be found in Appendix F.

4.8 NOISE

4.8.1 Existing Conditions

Dominant noise sources in the project vicinity are generated by vehicular traffic along West Lanikaula Street, human activity (student conversation, skateboarding, etc.), wind, and occasional distant aircraft flybys. The off-site parking lot is expected to increase noise for the adjacent University Heights Subdivision.

4.8.2 Potential Impacts and Mitigation Measures

Short-term noise impacts to the acoustical environment are likely to occur during construction of the Science Complex facilities. Noise impacts generally result from excavation, grading, and construction activities and also from construction vehicles. Typical construction equipment noise ranges between 70 and 95 decibels (dBA). Any noise impact from these construction activities would be short-term and construction equipment would be equipped with mufflers, as required under State Department of Health (DOH) regulations. In the event that construction noise exceeds, or is expected to exceed, the maximum permissible noise level allowable at property line limits (70 dBA), a permit would be obtained from the DOH to allow these activities and to mitigate short-term noise impacts. Specific permit restrictions for construction activities are:

- "No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels…before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday."

- "No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels…before 9:00 a.m. and after 6:00 p.m. on Saturday."

- "No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays."

Construction vehicles are likely to generate additional traffic and noise on West Lanikaula Street; however potential noise impacts are not anticipated to be significant and would only occur during development of the Science Complex facilities. After construction, traffic noise on West Lanikaula Street could increase, as the proposed parking would increase the number of off-street parking on-site.

The off-site parking lot will have a significant landscape buffer between the nearest residence and the first row of parking. The landscape buffer will consist of a large, dense hedge of variegated Hau that will grow 6 – 8 feet in height. Additionally, a row of Kou trees will be planted between the variegated Hau hedge and the first row of parking. Should this measure be found to be inadequate, the University is willing to construct a barrier or fence to reduce noise intrusion when funds become available. Access to the off-site parking will be controlled via a gate with egress movement restricted by a one-way tire-shredder that the University will lock from 11 p.m. to 6 a.m., in accordance with its other evening hour security gates. This measure should control loitering in the parking lot at night.

4.9 AIR QUALITY

4.9.1 Existing Conditions

Air quality in the Hilo area is relatively good, except for occasional impacts from volcanic emissions and localized traffic congestion. Air quality data for the area, obtained from the State Department of Health (DOH), indicate that pollutant concentrations are well within State and Federal air quality standards.

4.9.2 Potential Impacts and Mitigation Measures

Short-term impacts to air quality may occur during demolition of the existing facilities and construction of the Science Complex facilities. Exhaust emissions result from stationary and mobile construction equipment and vehicles, and there is a potential for fugitive dust emissions during all phases of construction. During predominant trade wind conditions, any dust related to construction will be carried toward the campus and not to surrounding residential areas. Dust and debris control measures will be implemented, and all construction activities will comply with the provisions of *Hawaii Administrative Rules*, §11-60.1-33 on Fugitive Dust.

Project contractor(s) should provide adequate measures to control dust including the following:

1. Plan construction to minimize the amount of dust-generating materials and activities and locate potential dust-generating equipment in areas of the least impact;

2. Provide an adequate water source at the site prior to beginning construction activities;

3. Landscape and provide rapid covering of bare areas, including slopes, from the initial grading phase;

4. Minimize dust from any access road;

5. Provide adequate dust control measures during weekends, after hours, and prior to beginning daily construction activities; and

6. Control dust from debris being hauled away from the project site.

After construction, the proposed Science Complex may increase traffic to the UH-Hilo Campus, especially given the proposed increase in parking provided at the off-site parking lot. However, any future increases in traffic generated as a result of the Science Complex facilities are not expected to result in any significant long-term impacts to air quality. As more provision for biking are made (i.e., bikeways) biking is expected to increase, reducing dependency on motorized vehicles for transportation. Other measures that would improve air quality include more student housing on campus or in surrounding areas, more stringent air quality standards for motorized vehicles, and public transportation.

4.10 VISUAL RESOURCES

4.10.1 Existing Conditions

Important visual resources in the Hilo area include major landforms, open spaces, viewing points, scenic drives, and other physical features. Visual resources in the South Hilo District are generally dominated by views associated with the coastline and views of Mauna Kea and Mauna Loa. Other visual resources include the many waterfalls associated with Wailuku River Valley.

Campus views are offered from West Lanikaula Street, near the Beaumont Agricultural Research Center, as shown in Figure 13 (LRDP Figure 2.4 – Existing Physical/Environmental Determinants). The project site is highly visible from West Lanikaula Street and the view can be characterized as one of mostly open lawn with various institutional buildings of varying architecture and construction type – all with red roofs.

4.10.2 Potential Impacts and Mitigation Measures

Neither the Science Complex site nor the proposed off-site parking lot is on the list of Natural Beauty Sites in the General Plan. Construction of the proposed Science Complex facilities would alter the appearance of this portion of the campus, as viewed from West Lanikaula Street, to one of larger and more modern buildings. Of the proposed buildings, the Science and Technology Building will be the most visible, followed by the Expansion Building. The USGS Building is not likely to be visible, and possibly only the upper floor and roof of the Pharmacy Building will be visible since it will be setback by over 150 feet from West Lanikaula Street. After construction, the new facilities could also impact makai views from the resident hall facilities mauka of the proposed Science Complex. The proposed project is not expected to impact important public viewing points or visual resources.

Additionally, the project site is zoned RS-10 (Single Family Residential) and the maximum allowable height of structures (35 feet) will further protect view planes. This height restriction generally limits buildings to a two- to three-story configuration. The majority of the proposed facilities will be consistent with the scale of surrounding buildings. The Science and Technology Building will be approximately 67'4", and as such, a height variance will need to be obtained prior to the start of construction. Landscaping will incorporate existing trees and native plants to further minimize visual impacts.

The landscape plan for the off-site parking lot will provide adequate screening from both the Lanikaula Street Extension and the nearby residences. Lighting in the parking lot will meet Hawai'i Island lighting standards as they relate to shielding outdoor lights, so the glow is directed downward, and switching to yellow-tinged low-pressure sodium bulbs, which cast a light that is less bothersome to wildlife and telescopes. During the public review period for the Revised Draft EA, the County of Hawai'i Planning Department, in regards to the University Heights Residential Subdivision, noted *"concern about the effect of the parking lot light on their homes should be addressed; in particular, the effect on the adjacent and nearby Kumukoa Street residential lot owners."* UH-Hilo acknowledges this concern, however, feels that safety for students, faculty, and staff within the parking lot is also of concern, and therefore, landscaping will be installed along the perimeter of the parking lot which should reduce the amount of light

spilling into adjacent residences. Should the dense hedge of variegated Hau be found to be inadequate, a minimum 6-foot high privacy wall or alternate landscaping buffer will be installed when funds become available.

4.11 SOCIAL ENVIRONMENT

4.11.1 Existing Conditions

Population

The County of Hawai'i has a total population of 148,677 persons, according to 2000 U.S. Census data. Hilo is the County's most populous town, and the Hilo Census Designated Place (CDP) has a total population of 40,759 persons and 14,577 households. The median age of residents in the Hilo CDP is the same as that for the County as a whole, 38.6 years, which is slightly higher than the State median.

Housing

The housing stock for the Hilo CDP presently accounts for just over 25 percent (16,026 units) of the County total. The number of dwelling units in Hilo grew from 14,134 in 1990 to 16,026 in 2000. The majority of housing units are located within established subdivisions, such as the University Heights Subdivision, which is just north of the project site, across West Lanikaula Street. Other subdivisions are south of the project site, along Pū'ainakō Street and within a two-mile radius in the urbanized Hilo town.

4.11.2 Potential Impacts and Mitigation Measures

The proposed Science Complex will be constructed on the UH-Hilo main campus and will not displace any homes or residents. The Science Complex could potentially attract additional researchers, students, faculty, and staff to the South Hilo area; however, since the proposed facilities would replace existing on-site facilities, the project is not expected to significantly increase new student population. Likewise, no significant impact on the County's resident population or housing inventory is anticipated. The proposed project is compatible with the character of the community, which in the immediate area can be considered one of higher learning. The UH-Hilo Science Complex is also compatible with the research-oriented goals of the University community and supportive of the various tenants/entities in the existing University Park. The Science Complex will provide enhanced educational facilities and programs.

4.12 ECONOMIC ENVIRONMENT

4.12.1 Existing Conditions

Hawai'i County has transformed over the last four decades from a plantation economy to one of multiple economies. Tourism, diversified agriculture, construction, and local niche industries such as astronomy have replaced sugar as the primary economy. The largest industries, in terms of employment, are in trade (retail and wholesale) and services. Tourism is especially important in East Hawai'i, with Volcanoes National Park attracting about 2.5 million visitors per year.

Leisure and hospitality provided approximately 12,700 jobs in 2003; in comparison, agriculture supported 2,350 jobs within the County.

4.12.2 Potential Impacts and Mitigation Measures

In February 2004, The Hallstrom Group, Inc. conducted an economic impact analysis for the *University of Hawai'i at Hilo Mauka Lands Master Plan Draft Environmental Impact Statement* (October 2004). The Mauka Lands Master Plan includes: 1) the relocation of Hawai'i Community College Manono Campus and 2) the expansion of University Park. Although the Mauka Lands Master Plan is located on currently vacant land, the economic impact of the new Hawai'i Community College facilities may be similar to that of the proposed Science Complex. Both projects involve the construction of new educational facilities in the same general area.

The Hallstrom Group report concluded that in no single year do public coffers suffer a net loss with the Mauka Lands project. It also stated that in many respects, "the project represents the next, and crucial, step in the on-going evolution of Hilo from an agrarian-based economy (a sector in stagnation since the demise of the sugar industry) into a service and technology-based modern economic structure." The proposed Science Complex will likewise provide advanced education to greater numbers of the populace, especially in science and technology-based industries.

Employment Opportunities

The proposed project will result in numerous construction, equipment operation, and specialty trade jobs (on- and off-site) during the planning and emplacement of infrastructure and buildings. Local businesses, including contractors constructing the improvements and suppliers of the construction materials, will also profit from the project. The County's economy will benefit through money spent by workers at off-site shops, restaurants, and service establishments. As these wages, profits, and expenditures move through the regional economy, they will have a ripple, or "multiplier," effect – increasing the amount of capital flowing to the entire community.

State Income and General Excise Taxes

The State will benefit from the proposed Science Complex through the generation of state income tax from workers' wages and the corporate profits of contractors and suppliers serving the development. The State will also benefit from the generation of general excise tax, assuming that all operations will be subject to the State general excise tax on their daily operations.

Public Costs

State and County expenses associated with the proposed project may include occasional police/enforcement, fire protection and emergency medical response, and road maintenance, etc. However, public safety facilities in central Hilo are nearby and have the personnel and equipment to service the Science Complex, especially since the demand for such services will be infrequent. The proposed Science Complex facilities will replace existing facilities but are not expected to significantly impact the UH-Hilo student population, the overall County population, or the public services provided by the State and County.

4.13 ACCESS, CIRCULATION, AND PARKING

4.13.1 Existing Conditions

From a regional perspective, the UH-Hilo Campus is accessible via Kanoelehua Avenue/Volcano Highway/State Highway 11, Saddle Road/Highway 20, and Hilo Bayfront Highway/State Highway 19. Existing roadways in the immediate vicinity of the campus include West Lanikaula Street (which is adjacent to the proposed project site), Komohana Street, Mohouli Street, Pū'ainakō Street, Kapi'olani Street, Nowelo Street, and Kawili Street.

West Lanikaula Street is a two-lane roadway with a wide shoulder area (a 9-foot shoulder along the campus side of the street, except near the bridge where the shoulder is reduced to 5 feet). There are no bicycle lanes on the roadway. A campus entry roadway off West Lanikaula Street is located west of the Beaumont Agricultural Research Center. This two-lane roadway has speed bumps and a sidewalk on the mauka side. A second campus entry roadway off West Lanikaula Street is located north of College Hall C (Building 345C).

The State Department of Transportation has developed a master plan to enhance the bicycling environment in Hawai'i. *Bike Plan Hawaii 2003* (Figure 16) identifies existing and proposed bicycle facilities on all islands. In Hilo, existing bicycle facilities include:

- Kanoelehua Avenue Bike Lane *(Kamehameha Avenue to Pū'ainakō Street)*;
- Kanoelehua Avenue Signed Shared Road *(Pū'ainakō Street to Makalika)*;
- Kawili Street Bike Lane *(Manono Street to Pū'ainakō Street)*;
- Kalaniana'ole Avenue Signed Shared Road *(Kamehameha Avenue to Leleiwi Beach Park)*; and
- Mohouli Street Extension Signed Shared Road *(Beyond Komohana Street)*.

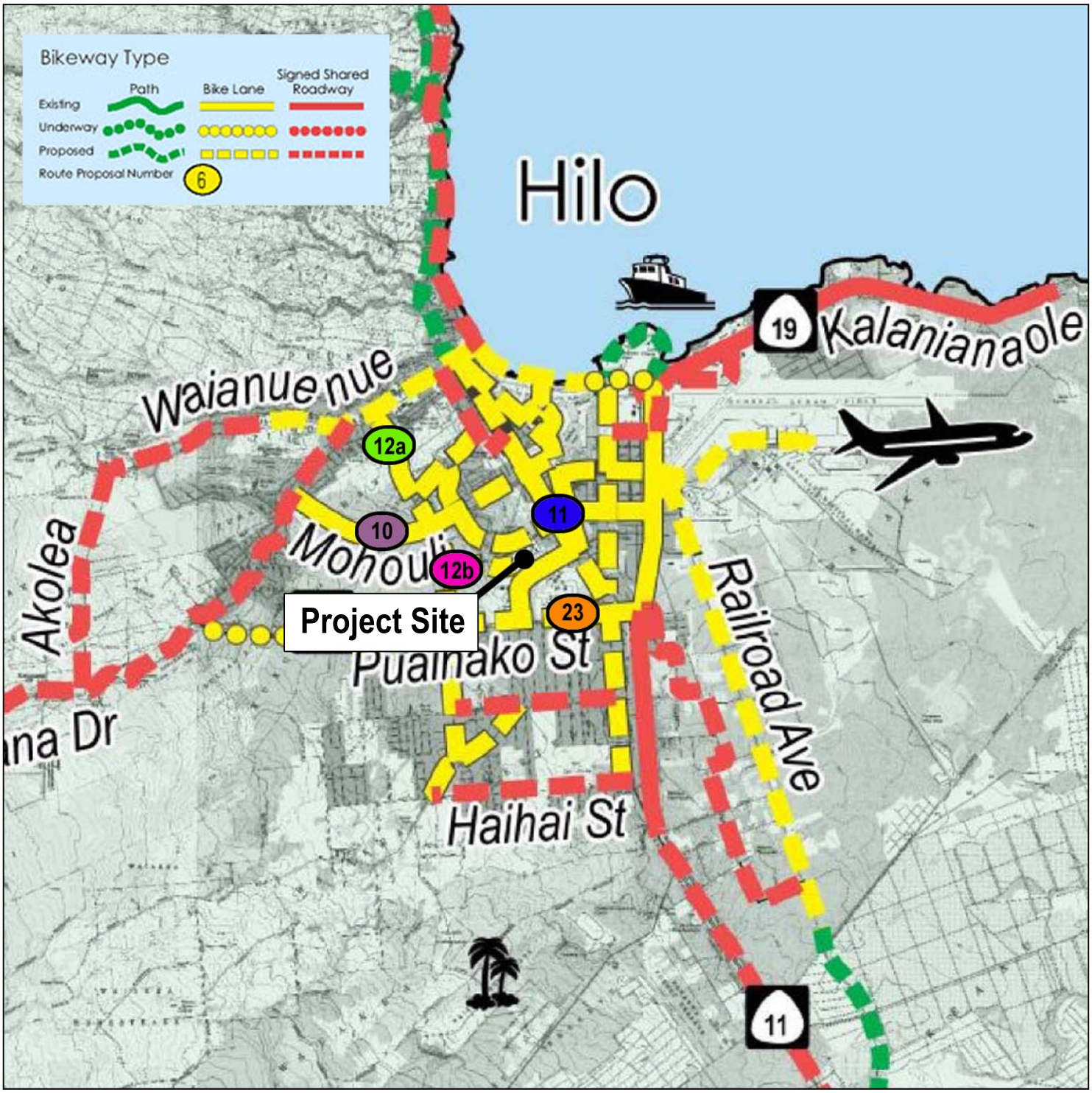
Bicycle facilities currently underway in Hilo include:

- Hilo Bayfront Highway Bike Lane *(Manono Street to Kanoelehua Avenue)*
- Pū'ainakō Street Extension Signed Shared Road *(Beyond Komohana Street)*

Proposed bicycle facilities in the project vicinity include:

- Mohouli Street Bike Lane *(Komohana Street to Kīlauea Avenue)*
- Kumuko'a Street/West Lanikaula Street/East Lanikaula Street Bike Lane *(Kūkūau Street to Kanoelehua Avenue)*
- Komohana Street Bike Lane *(Waiānuenue Avenue to Ainaola Drive)*
- Nowelo Street Bike Lane *(Komohana to UH-Hilo Expansion Area)*
- West Pū'ainakō Street Bike Lane *(Komohana Street to Kino'ole Street)*

The Hawai'i County Mass Transit Agency provides public transportation around the island on the Hele-On bus. Buses stop at the main entrance of the UH-Hilo campus (in front of the University Classroom Building) on routes between Downtown and Prince Kūhiō Plaza. The Mass Transit Agency also offers a Shared Ride Taxi program, which provides door to door transportation for as little as $2 within the urbanized area of Hilo and Kona. The UH-Hilo provides a free van shuttle service between some apartment complexes and the UH-Hilo campus.



LEGEND

- 10 **Mohouli Street**
  Komohaha Street-Kilauea Avenue
- 11 **Kumukoa Street/West Lanikaula Street/ East Lanikaula Street**
  Kukuau Street-Kanoelehua Avenue
- 12a **Komohana Street**
  Waianuenue Avenue-Ainaola Drive
- 12b **Nowelo Street**
  Komohana-UH Hilo Expansion Area
- 23 **West Puainako Street**
  Komohana Street-Kinoole Street

Source: Bike Plan Hawaii 2003
State of Hawaii Department of Transportation
Q:\Hawaii\UHHilo-University Park Expansion\GIS\Projects

Disclaimer: This graphic has been prepared for general planning purposes only.

Figure 16
Proposed Bicycle Facilities

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NORTH

NOT TO SCALE

PBR HAWAII

MAY 2007

Some future parking and ADA compliant stalls will be provided adjacent to the buildings. The majority of the parking for the Science Complex will be provided at the off-site parking lot. As previously mentioned, the lot will be controlled via a gate with limited access. The lot will be locked from 11 p.m. to 6 a.m. and there will be a one-way tire shredder to restrict traffic movement to egress only.

4.13.2 Potential Impacts and Mitigation Measures

Construction vehicles will access the project site from West Lanikaula Street. After construction, vehicular access to the proposed UH-Hilo Science Complex will be provided from West Lanikaula Street, as well as through a planned future loop road system identified in the University's LRDP. Traffic along West Lanikaula Street may increase with the proposed Science Complex, but this could be mitigated by increased opportunities for bicycling and public transportation.

Demolition of the Beaumont Agricultural Research Center and parking area would be required for the construction of the Science and Technology Building, and according to the *Site Selection Analysis*. The off-site parking lot will provide a significant amount of parking for the development of the entire Science Complex site, however, additional parking areas would still be required throughout the campus. Based on the assigned square footage for each of the proposed facilities and a projected number of students, the 2004 Site Selection Analysis estimated that the number of parking stalls required for the Science Complex is 368, with 204 stalls on-site and 164 stalls required off-site. UH-Hilo is willing to construct a sidewalk connecting the Lanikaula Off-Site Parking Lot to the campus when funds become available. The sidewalk will be designed to be as accessible as possible, given the limitations of the existing grade of West Lanikaula Street and the constriction of the existing bridge and power poles.

The project site is located near the central portion of the main campus and is within a 5-minute walk (1,000 feet) to the Library and Media Center. Students can walk between the proposed Science Complex site and the main campus entrance, where the Hele-On bus stops. Existing and proposed bicycle facilities will encourage bicycle use within the UH-Hilo community and in the Hilo area, mitigating potential traffic increases in the project area.

During the public review period for the Revised Draft EA, the County of Hawai'i Planning Department wrote: *"consider bicycling/carpool incentives as part of a transportation management plan to reduce commuting."* UH-Hilo is preparing a transportation master plan for the UH-Hilo Student Life and Events Complex, to achieve LEED gold standard, and as such, preferential carpool parking and bicycle facilities for the UH-Hilo campus will be identified in this transportation master plan.

In compliance with Section 103D-407, HRS, construction specifications will include the use of recycled glass in paving materials, where feasible.

4.14 DRAINAGE AND GRADING

4.14.1 Existing Conditions

The natural flow of storm water at the Science Complex site is from the west to east (mauka to makai). The Science Complex site is located outside of the 100-year and 500-year floodplains, as well as the Hilo tsunami evacuation area (Figure 15). The upper area of the site, where the Beaumont Building complex and the parking lot are located, consists of moderate slopes (3 to 4%) while the grassed area on the east side fronting Wentworth Hall consists of steeper slopes (10 to 18%).

Drainage is generally conveyed by surface except near the Life Science Building where a series of inlets and pipes convey run-off that eventually outlets west of Wentworth Hall.

The natural flow of storm water at the off-site parking lot site is also from the west to east (mauka to makai). The majority of the off-site parking lot is located outside of the flood plain except for 0.7 acres located within Zone A, which are areas inundated by one percent (1%) annual chance flooding. This is not anticipated to cause any problems and the off-site parking lot will be equipped with six (6) drywells to accommodate any runoff from the parking lot. The drywells will each have a two (2) cubic foot per second (cfs) capacity. There are no residential areas immediately down slope of the project, and in fact, the parking lot site abuts Waiākea Stream.

4.14.2 Potential Impacts and Mitigation Measures

Due to moderate slopes at the western area of the site, grading should be minimal if the building is set at grade. Grading at the eastern area of the site should be minimized by the installation of the building basement level. Ramps will be required to meet existing grades at areas surrounding Wentworth Hall.

The proposed Science Complex should not greatly increase the amount of storm runoff quantities, as the complex will be replacing impervious surfaces of existing parking and existing buildings. The site will be graded to direct drainage away from the proposed facilities; however, the overall storm drainage pattern will be maintained and storm runoff will continue to flow to the east. In addition, catch basins and/or drywells should be installed to dispose localized run-off from downspouts and gutters. Modified shallow drywells should be adequate to handle the run-off, therefore eliminating the need for Underground Injection Control (UIC) permits. All drainage improvements will be designed and constructed in accordance with applicable Department of Public Works (DPW) standards.

The off-site parking lot will increase the impervious surface of that area since it is currently vacant and heavily vegetated. However, the off-site parking lot will be equipped with six (6) drywells to accommodate any runoff from the parking lot, thereby minimizing runoff from entering the Waiākea Stream channel. During the public review period for the Revised Draft EA, the County of Hawai'i Planning Department wrote: *"Consider reducing impervious paving at parking lot by using porous paving."* Although no significant impacts on existing drainage conditions are anticipated, UH-Hilo is considering the installation of porous paving surfaces for

the Lanikaula Off-Site Parking Lot to assist in the management of storm water runoff while improving infiltration of rain water into the water table.

4.15 WATER SYSTEM

4.15.1 Existing Conditions

There are several water systems serving the UH-Hilo Campus. The West Lanikaula Street system is looped between the Mohouli system and the Nowelo low-pressure system. A new 12-inch fire protection waterline was recently installed along Nowelo Street and the Campus Service Road. A 6-inch domestic waterline runs adjacent to the fire protection waterline. The *Water Study for the University of Hawaii at Hilo Fire Safety Improvements* (September 1998) shows a new 12-inch fire protection line to be installed parallel to Lanikaula Street along with a fire hydrant, to serve a proposed building east of Wentworth Hall. The proposed building and waterline has not been installed as of this date.

4.15.2 Potential Impacts and Mitigation Measures

Conversations with the Department of Water Supply (DWS) revealed that the 1998 water study is still valid. The study shows a 12-inch fire protection line connecting to the newly installed 12-inch line along the Campus Service Road. The intent of this line is to service a future building to be constructed east of the new Sciences and Technology Building. This same 12-inch line can also provide fire protection service to the new Sciences and Technology Building. In the original Draft EA, it was stated that new fire hydrants will be required since the building's area is out of the 150-foot range of any of the existing fire hydrants. Subsequent to the publication of the Draft EA, a new fire hydrant has been installed along Lanikaula Street (within 60 feet from the proposed building), therefore UH-Hilo's consulting civil engineer is in the process of confirming with the Department of Water Supply and the Fire Department if this meets fire protection requirements.

The existing 6-inch waterline located along the Campus Service Road should adequately serve the new Sciences and Technology Building's domestic water service needs. The domestic water demand for the Science and Technology Building is estimated to be 53 gallons per minute (GPM).

During the public review period for the Revised Draft EA, the Department of Water Supply (DWS) wrote: *"Water can be made available from an existing 8-inch waterline with Lanikaula Street, front the subject parcels."* UH-Hilo will not be connecting to the existing 8-inch waterline within Lanikaula Street, but rather, the 12-inch waterline along Nowelo Street and the Campus Service Road. This 12-inch line will be able to provide fire protection service to the proposed Sciences and Technology Building. The water system will be in compliance with DWS standards and the Subdivision Control Code requirements. A calculated maximum daily water usage for the project will be submitted to DWS prior to the issuance of a water commitment for the proposed project.

4.16 WASTEWATER SYSTEM

4.16.1 Existing Conditions

Several wastewater systems currently exist throughout the UH-Hilo campus. The systems connect to the county system at various locations. Generally, the upper campus area (dormitory area) connects to an 8-inch line that runs along Kawili Street, and the lower campus area connects to an 8-inch line that runs east and south and eventually connects to the Kawili Street line. Both the Lanikaula Street and Kawili Street lines increase to 10 inches at Kapi'olani Street (below the campus). Preliminary communications with the County Wastewater Division indicated that the county system is nearing its capacity.

4.16.2 Potential Impacts and Mitigation Measures

The adjacent county wastewater system was originally designed to accommodate the UH-Hilo campus. However, due to unanticipated demands and the lack of an updated wastewater study, a new wastewater study may be required by the county's Wastewater Division to show that the county system can accommodate the additional flows. Once the off-site sewer issues are resolved, two connection options exist: connect to an existing 6-inch sewer line that currently serves Wentworth Hall, or connect to a manhole located along Lanikaula Street. The first option, which is a part of the lower campus area system that eventually connects at Kawili Street, will need to be explored further since the system conveys sewage from many buildings of the lower part of the campus. The second option will require County approval.

The sanitary discharge flow for the Science and Technology Building is estimated to be 9,015 gallons per day (gpd), which is anticipated to be accommodated by the County's existing wastewater treatment system.

4.17 ELECTRICAL AND COMMUNICATIONS SYSTEMS

4.17.1 Existing Conditions

Electrical System

The Hawaii Electric Light Company, Inc. (HELCO), a privately-owned utility company regulated by the State Public Utilities Commission, provides electrical power to the island of Hawai'i. The HELCO network of power plants serving Hilo includes the Kanoelehua Power Plant, Puna Power Plant, Wailuku Hydro Power Plant, Hilo Coast Power Plant, and Shipman Power Plant.

The entire UH-Hilo Campus is served by the HELCO Komohana Substation and 12.47-kV (kilo-volt) system. An existing 12.47-kV overhead electrical line along West Lanikaula Street is owned by HELCO and serves a HELCO transformer vault located in College Hall (Building 345). The 12.47-kV line from West Lanikaula Street also serves a University-owned substation near the Life Science Building. This substation serves the Life Science Building, Portable Buildings, and Wentworth Hall. A single phase HELCO pole top transformer located on West Lanikaula Street serves the Beaumont Experimental Station (near the Beaumont Agricultural Research Center).

Telephone System

Hawaiian Telcom provides telephone service to the project area from its switching station at the corner of Nowelo Street and South Aohōkū Street. An overhead telephone line runs along West Lanikaula Street near the proposed Science Complex site.

Cable Television System

The cable television (CATV) system, provided by Hawaiian Cablevision, enters the UH-Hilo Campus from West Lanikaula Street, near the proposed Science Complex. The system serves the Beaumont Agricultural Research Center, but the signal transmitted is weak, possibly due to the cable length.

Computer System

A campus data system is located in the Computer Center (Building 346) and serves Wentworth Hall and College Hall via a wired local area network (LAN).

4.17.2 Potential Impacts and Mitigation Measures

Electrical, telecommunication, and cable television services are provided by independent, privately-owned utility companies regulated by the State Public Utilities Commission. After construction, the proposed Science Complex is not expected to significantly increase demand over current levels. Further, the proposed project is not expected to adversely impact the ability of the utility companies to provide their services to other areas.

4.18 SOLID WASTE DISPOSAL

4.18.1 Existing Conditions

The County of Hawai'i Department of Environmental Management, Solid Waste Division is responsible for administering the island's solid waste management system. This division operates the County's South Hilo Landfill and Pu'uanahulu Landfill (West Hawai'i). The County does not currently provide solid waste collection service for the project area; however, UH-Hilo contracts a private company to haul its solid waste to the South Hilo Landfill. The *Update to the Integrated Solid Waste Management Plan for the County of Hawaii* (December 2002) estimated that the South Hilo Landfill (as of mid-2001) had approximately 500,000 cubic yards of remaining air space and would be full by the summer of 2004. The plan also stated that the landfill must be closed in the next five years.

4.18.2 Potential Impacts and Mitigation Measures

Construction of the proposed UH-Hilo Science Complex will over a short time period generate solid waste that is typical of construction-related activities. Selected contractors will be instructed to provide a construction waste recycling plan for construction wastes and to use products with recycled content, where feasible. As such, construction and debris recycling will be part of the demolition of the existing buildings. Contractors will also be required to remove all debris from the site and properly dispose of it at the South Hilo Landfill, in conformance with County regulations.

After construction, solid waste generated by the new Science Complex facilities would be recycled or transported to the South Hilo Landfill by UH-Hilo's private contractor. The amount of solid waste generated by the Science Complex is not expected to be significantly greater than the amount generated by existing buildings on the site. Additionally, a recycling center with six (6) recycling bins will be provided adjacent to the Science and Technology Building.

4.19 POLICE AND FIRE PROTECTION

4.19.1 Existing Conditions

Police Protection

The Hawai'i County Police Department (HCPD), headquartered in Hilo, is divided into several districts and beats with law enforcement jurisdiction throughout the entire island of Hawai'i. There are over 500 administrative personnel and police officers. The proposed Science Complex site is located within the HCPD South Hilo District, which includes the department's central headquarters in the County Public Safety Building.

Fire Protection

The Hawai'i County Fire Department (HCFD) has fire protection jurisdiction throughout the entire island. The HCFD has a force of over 300 working administrative personnel and firefighters. In the South Hilo District, there are four 24-hour full-time fire stations, which are the Central, Waiākea, Kaūmana, and Kawailani substations. Among these four stations, there are between 22 and 26 personnel on every shift. The Emergency Medical Services (EMS) Division of the HCFD provides quality pre-hospital emergency care, pursuant to contractual arrangements with the State Department of Health. The Kawailani Fire Station, referred to as Station 3, is a fire and EMS operation and is the closest station to the project site. This station would provide primary service to the proposed Science Complex and the other three stations would provide any necessary back-up services, if needed.

4.19.2 Potential Impacts and Mitigation Measures

The proposed Science Complex is not expected to have a significant impact on HCFD's ability to continue providing protective services for area residents and the general public. Short-term construction activities associated with the project may impact traffic flow on West Lanikaula Street. Off-duty police officers may be hired to help control traffic during construction; however, daily patrols of the South Hilo District should not be disrupted or negatively impacted as a result of the project. During the public review period for the Revised Draft EA, the Hawai'i County Police Department noted that it *"does not anticipate any significant impact to traffic and/or public safety concerns."*

Likewise, the proposed project is not expected to have a significant impact on the HCFD's ability to continue providing protective services for area residents and the general public. With the replacement of old, deteriorating buildings, it is anticipated that the new Science Complex facilities will decrease fire hazards as they will be designed to meet fire code requirements. The buildings will be designed with a fire sprinkler system for additional fire protection and UH-Hilo will coordinate with HCFD on fire hydrant installation to meet code requirements. Although there is a potential for emergency medical care to be required by faculty or students at the

proposed Science Complex, these situations are inevitable and are expected to be infrequent, as these facilities will serve educational purposes. In the event that HCFD is called to the Science Complex, emergency and fire vehicle access will be provided by the two campus entries from West Lanikaula Street. Water infrastructure will be designed and installed in accordance with the Uniform Fire Code (UFC), Section 10.301 (c), as amended. During the public review period for this Revised Draft EA, the Hawai'i County Fire Department wrote: *"Fire apparatus access roads shall be in accordance with UFC Section 10.207."* UH-Hilo believes that a fire apparatus access road is not required for the project because a new fire hydrant has been installed along Lanikaula Street (within 60 feet of the proposed building)

4.20 HOSPITALS

4.20.1 Existing Conditions

Hilo Medical Center is the only hospital in Hilo and is located approximately 2.3 miles from UH-Hilo on Waiānuenue Avenue.

4.20.2 Potential Impacts and Mitigation Measures

Medical care may be needed by construction workers or students and staff during the development and operation of the UH-Hilo Science Complex. These situations are expected to be infrequent and are not likely to adversely affect the Hilo Medical Center. Given the distance between the hospital and the project site, it is unlikely that the Hilo Medical Center will be impacted by construction activities.

4.21 PUBLIC SCHOOLS

4.21.1 Existing Conditions

State Department of Education

Three public schools are located east of the proposed Science Complex, across the UH-Hilo main campus. Waiākea High School is located on West Kawili Street and has a 2004-2005 school year enrollment of 1,284 students. Waiākea Intermediate School (with 900 students) and Waiākea Elementary School (with 822 students) are located on West Pū'ainakō Street.

University of Hawai'i at Hilo

The proposed Science Complex site is located on the northern portion of the UH-Hilo Campus, roughly between the two campus entries from West Lanikaula Street. Existing facilities on the project site include the Beaumont Agricultural Research Center, the Life Science Building, the Marine Science Building, Portable Buildings 13 and 14, Wentworth Hall, and College Hall C.

4.21.2 Potential Impacts and Mitigation Measures

Waiākea Elementary, Intermediate, and High Schools are located east of the project site, across the UH-Hilo main campus. Given this distance, the schools are not likely to experience any noise, air quality, or traffic impacts resulting from short-term construction activities. Over the long term, operation of the proposed Science Complex is not expected to impact the schools but

will provide new educational facilities and opportunities for Hilo students to pursue degrees in the sciences, without moving off-island or depending on online classes.

The proposed new science facilities and programs will help to meet the needs of the growing UH-Hilo student population. In addition, the proposed Pharmacy College will enable residents to take classes or obtain a degree in pharmaceutical science, without leaving the island.

Within the UH-Hilo Campus, existing facilities on the project site will be removed for the development of the proposed Science Complex. However, as discussed in *Section 3.4 University of Hawaii at Hilo Long Range Development Plan* and shown in Figure 10 of the Final EA, the 1996 LRDP identifies the condition of the existing buildings on the project site, with the exception of Wentworth Hall and the Life Science Building, as poor or fair. Further, building conditions are likely to have worsened over the 10 years since the LRDP was adopted. The LRDP also marked the Beaumont Agricultural Research Center, College Hall C, and Portable Buildings 13 and 14 for removal (Figure 11). Since construction of the proposed Science Complex will be phased, the impacts of the removal of existing classrooms can be mitigated through scheduling. Construction-related impacts (i.e., noise, traffic, and fugitive dust and exhaust emissions) on the UH-Hilo Campus would only occur during the construction phases for the buildings, which will be developed separately.

4.22 RECREATIONAL FACILITIES

4.22.1 Existing Conditions

Within the Hilo town area, there are eight neighborhood parks. The Ho'olulu Complex includes an auditorium, stadium, swimming pool, tennis courts, and baseball fields, encompassing 56 acres. The facility is located between Waiākea Pond and the Hilo International Airport, approximately 2 miles from the proposed Science Complex. In the immediate project vicinity, University Heights Subdivision Park is to the west and the UH-Hilo athletic complex is southwest of the project site on West Kawili Street. The athletic complex includes a multi-purpose field, softball and baseball fields, and a tennis complex.

4.22.2 Potential Impacts and Mitigation Measures

The proposed UH-Hilo Science Complex will include educational facilities that are not expected to have any impact on existing recreational facilities.

4.23 CUMULATIVE IMPACTS

Several developments are planned in the project area and may pose cumulative environmental impacts. These projects, and their potential cumulative impacts, are described below.

Mauka Lands Master Plan. This project includes the relocation of Hawai'i Community College Manono Campus and the expansion of University Park to a vacant, 267-acre State-owned parcel mauka of the existing University Park.

United States Department of Agriculture (USDA) Pacific Basin Agricultural Research Center (PBARC). The PBARC, which is surrounded on three sides by the UH-Hilo Mauka Lands project, is being developed on a 30-arce parcel that is currently vacant.

Student Life and Event Complex. A new Student Life and Event Complex will be located near the existing Athletic Complex on the main UH-Hilo campus. The complex will include a multi-purpose facility for sports, recreation, and conference activities, as well as a swimming pool. Phase I, which includes the student fitness center and swimming pool, is anticipated to be completed by February of 2008.

Student Services/Administration Building. Improvements are planned for the Student Services Building on 1.38 acres near the existing Student Services Building, Theatre, and Campus Center on the main UH-Hilo campus. The project will provide an addition to the existing Student Services Building to consolidate student services functions and to house the Chancellor's Office and other related administrative functions.

International Village Center. The International Village Center will be developed on 36 acres of land across Kawili Street and will include a student-oriented shopping plaza, dormitory housing, and classroom and cultural facilities and exhibits.

Climate, Topography, and Soils

Planned developments in the project area are not expected to adversely impact regional climate, topography, and soils. Within their respective project sites, construction will impact topographic features and soils, and new buildings may affect the micro-climate; however, the overall topography, soil, and climate of Hilo are not expected to be affected.

Natural Hazards

It is highly unlikely that any of the proposed buildings and uses associated with the planned developments will affect the potential occurrence of earthquakes, lava flows, hurricanes, or tsunami. The proposed projects are most likely being designed to address seismic, lava flow, flood, and tsunami zone designations for the area to avoid potential damage from natural hazards.

Aquatic Resources and Water Quality

The Science and Technology Building, the Student Services/Administration Building, and the International Village Center are located downstream of the Waiākea Stream. The Student Life and Event Complex, the mauka lands project, and the PBARC are located upstream of the Waiākea Stream. These projects should not adversely impact aquatic resources and water quality, as on-site drainage facilities such as detention basins will maintain pre-development runoff levels at each site and should prevent large runoff quantities during most storm events.

Botanical Resources

Impacts on botanical resources are generally limited to the planned development sites. Collectively, the projects are not expected to adversely impact botanical resources in the Hilo area.

Mammalian and Avian Species
Within each project site, existing species are likely to leave during construction but may return to the site, depending on the habitat provided. The Science and Technology Building, the Student Services/Administration Building, and the Student Life and Event Complex will be developed on the existing UH-Hilo main campus, which hosts only introduced species. The wildlife survey for the mauka lands parcel observed no threatened or endangered species, and it is generally acknowledged that lowland populations of native birds have been eliminated from most areas of Hilo.

Air Quality
Emissions from cars and equipment used to generate electricity can affect air quality. New buildings on currently vacant sites may affect air quality by attracting traffic and using electricity. Where development will replace existing buildings, traffic and electrical demand are not expected to significantly increase on-site. Collectively, the projects are not expected to adversely affect regional air quality, as new technologies, increasingly stringent federal air pollution control regulations, and increasing use of alternative forms of transportation (i.e., bicycles, public transportation) may offset potential increases in air pollution.

Noise
Although construction will increase existing on-site noise levels, the proposed educational facilities will not generate significant noise over the long term. The projects are not likely to cumulatively affect regional noise levels, as they support research, education, and other student functions.

Archaeological and Cultural Resources
Of the planned developments, the mauka lands project, the PBARC, and the International Village Center will occur on undeveloped land. These vacant sites are overgrown and may have been used for sugar cultivation and/or pasture uses, which likely destroyed many archaeological resources. The UH-Hilo campus has been extensively altered to accommodate existing facilities, and as such, archaeological resources are unlikely to be found. Any impact to such resources or to traditional and cultural practices would generally be site-specific.

Visual Resources
The proposed buildings on University-owned land will reinforce the visual appearance of the UH-Hilo campus and the University-related uses in this area. Where development will occur on currently undeveloped land, the projects will change the visual character of the sites from overgrown lots to University-type facilities.

Hydrogeological Resources
The source of water for all of the projects in the area is the Hilo Aquifer System, which has a sustainable yield of 347 million gallons per day (mgd). As the de facto population of Hilo grows, the water demand for the sustainable yield of the aquifer will increase. However, given that the current pumpage from Hilo City wells (Pana'ewa No. 1, 2, and 3; Pi'ihonua No.3A and 3B; and Saddle Road) is 9.999 mgd, the day in which the demand is equal to the supply available is unlikely to come for some time.

Population, Housing, and Community Character
The developments planned by the UH-Hilo or other parties using UH-Hilo lands will help accommodate a growing demand for educational and research facilities in Hilo. No homes or residents will be displaced, as the developments will occur on currently undeveloped sites or sites already used for UH-Hilo functions. Many of the planned developments will replace existing buildings; however, development of new facilities on vacant land will provide new employment and education opportunities that may attract students, researchers, faculty, and staff to the South Hilo area. The developments, however, should not have a significant impact on the County's resident population or housing inventory, since the population increase will represent a small percentage of the entire County population and will occur over several years. Collectively, the proposed developments will reinforce the UH-Hilo community's reputation of higher learning.

Economic Character
The proposed developments will provide numerous construction, equipment operator, and specialty trade jobs (on- and off-site) during planning and emplacement of the infrastructure and building of the improvements. Several other jobs will be offered to landscape, service, and maintain each building. Local businesses, including those constructing the improvements and those supplying the materials, will profit from the planned developments. Money spent by workers and businesses at off-site shops, restaurants, and service establishments throughout the island will benefit the County's economy. As these wages, profits, and expenditures move through the regional economy, they will have a ripple, or "multiplier," effect – increasing the amount of capital flowing to the entire community. The State's economy will also benefit from the generation of income and general excise tax revenues.

Since the developments are not expected to have a significant impact on population and housing, State and County expenses (i.e., police/enforcement, fire protection, emergency medical response, road maintenance, etc.) are not expected to be adversely affected.

Water Facilities
Although several planned developments in Hilo will occur on sites with existing buildings and associated infrastructure, improvements to the existing domestic water storage and delivery system may be needed. The County will review each project to ensure that there are no major impacts to the municipal water system.

Wastewater Facilities
Each proposed building may have impact on the municipal wastewater collection, treatment, and disposal system. To ensure that the wastewater system can accommodate future developments without being adversely affected, each project is reviewed by the County so that it may identify any improvements that might be required.

Drainage Facilities
The planned developments would increase the amount of impervious surfaces by construction of buildings, roadways, parking areas, and walkways (although most of the developments will occur on already developed sites). No significant impacts on existing drainage conditions are anticipated, as on-site storm drainage facilities will be sized to control runoff in excess of

estimated pre-development runoff quantities, in accordance with the *Storm Drainage Standard* of the County of Hawai'i, October 1970. The overflow entering the drainage systems in roadways will not be greater than pre-development quantities. Stormwater management options can be developed to minimize increases in pollutant loads.

Solid Waste Facilities
As the defacto population increases, the capacity of the South Hilo Landfill will decrease. Since the County's population is not expected to significantly increase with the planned developments alone, and since recycling practices are increasing, over the long term, the amount of solid waste generated directly and indirectly per capita is decreasing. However, this does not discount the County's need to address the eventual closure of the South Hilo Landfill.

Transportation Facilities
The Science Complex is located on the UH-Hilo main campus. Its central location makes walking to other science buildings and the Library and Media Center easy. Vehicular traffic generated by the building is most likely to impact Lanikaula Street.

The Student Services/Administration Building and the International Village Center are more likely to generate vehicular traffic on West Kawili Street and Pū'ainakō Street (below West Kawili Street) than Lanikaula Street near the proposed Science Complex.

Vehicular traffic generated by the Student Life and Event Complex is more likely to affect Nowelo Street in the University Park area.

Vehicular traffic for the Mauka Lands project and the PBARC will more likely affect Pū'ainakō Street, Nowelo Street, and Komohana Street than Lanikaula Street. A separate bikeway system will be provided between the PBARC and the University Park Expansion and Hawai'i CC.

Electrical and Communication Facilities
Any increase in demand for electricity not generated by renewable resources will have an indirect impact on air quality, as emissions are generated by HELCO-owned steam units, diesel units, and gas turbines. All new projects increasingly incorporate energy-saving features in the design of projects. These features include: 1) use of natural ventilation to increase comfort of occupants; 2) maximum use of natural lighting without heat gain; 3) use of high efficiency compact fluorescent lighting; 4) use of insulation/radiant barrier for an equivalent R-19 value in ceiling; 5) use of ceiling fans; and 6) use of landscaping for dust control and to minimize area heat gain. New buildings are likely to increase the demand for communications services (i.e., CATV and telephone service), but are unlikely to have an adverse effect on existing communications systems.

Recreational Facilities
The proposed developments will serve research and educational purposes and are not expected to have a substantial impact on population or existing recreation facilities. Ground breaking took place for the Student Life and Event Complex in November of 2006; the complex will include a multi-purpose facility for sports, recreation, and conference activities, as well as a swimming pool; however, as the resident population in Hilo increases, there will be a greater demand for recreational facilities. Phase I, which includes the student fitness center and swimming pool, is

anticipated to be completed by February of 2008. Casual observance of parks and active play courts in and around Hilo would indicate that existing facilities do not experience overuse, except maybe for school-aged soccer league play.

Medical Facilities
Accidents requiring medical attention are unavoidable and will occur at some time during the development or operation of the proposed buildings. These situations are expected to be infrequent; however, as the de facto population in Hilo increases, so will the demand on Hilo's medical facilities. The Hilo Medical Center is the only hospital in Hilo but is not currently at capacity.

Educational Facilities
All of the planned developments in the project area are related to education in some way. As such, each development will provide additional educational facilities and opportunities to meet the needs of residents.

Police Protection
Incidents requiring police protection or service are unavoidable, but are expected to be infrequent, as on-site security systems or personnel are likely to be employed. Although no significant impacts to population are anticipated, as the de facto population in Hilo increases, additional officers and staff may be needed.

Fire Protection
Unavoidable fires and emergency situations would require protective service from the Fire Department. To prevent fires, all facilities would be designed to meet fire code requirements and design plans would be coordinated with the Fire Department. Emergency and fire vehicle access would also be provided. Although no significant impacts to population are anticipated, as the de facto population in Hilo increases, additional fire fighters and staff may be needed.

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5.0

Alternatives to the Proposed Action

5.0 ALTERNATIVES TO THE PROPOSED ACTION

5.1 NO-ACTION ALTERNATIVE

Under the no-action alternative, no changes would be made to the existing project site. This alternative would be contrary to the objectives of the project. The proposed Science Complex and off-site parking lot would not be developed and the Beaumont Agricultural Research Center and College Hall C would remain in poor condition while the off-site parking lot site would remain vacant. The project site would continue to be underutilized with regard to density, and educational opportunities offered by programs such as the Pharmacy College would not be available. This alternative has been rejected, as the benefits associated with the proposed Science Complex far outweigh the retention of the existing aging facilities on the project site.

5.2 ALTERNATIVE SITES

5.2.1 Site Selection Analysis

The UH-Hilo retained Kajioka Yamachi Architects and PBR Hawaii to conduct the *UH-Hilo Science Complex: Site Selection Analysis* (*Site Selection Analysis*) (November 2004). The *Site Selection Analysis* compared the proposed site (Site 1 – Beaumont) with a vacant site mauka of the UH-Hilo main campus and designated for UH-Hilo expansion (Site 2 – UHH Expansion). The following describes Site 2, based on the *Site Selection Analysis*.

Site 2 – UHH Expansion

Land Use Designations. Site 1 and Site 2 have the same land use designations.

- State Land Use – Urban
- Hawai'i County General Plan – University Use
- Hawai'i County Zoning Ordinance – RS-10 Single Family Residential
- Special Management Area – Outside of the SMA

Archaeological Sites. Four archaeological sites were identified on Site 2 in a 1993 environmental assessment; however, based on the type and age of the sites and other data, no further work was recommended for the area. In an environmental impact statement prepared for University Park in 1997, the State Historic Preservation Division (SHPD) concluded that the proposed development would have "no effect" on significant historic sites. However, there may be cultural significance associated with the property.

Visual Conditions. Major views from the property are to the north, northeast, and northwest toward downtown Hilo and Hilo Bay. Construction of the Science Complex facilities could impact mauka views from surrounding areas. The sloping topography and higher density nature of the proposed facilities could result in both mauka and makai views from the new facilities.

Noise Conditions. The site is bordered by the Wailoa Flood Control Channel, other lots within the University Park, University Expansion, and Student Housing. Development of this site as a Science Complex should not result in any significant noise impact.

Access and Circulation. The site is accessible from West Lanikaula Street through its connection to Nowelo Street and from Nowelo Street with access off of Komohana Street. The site is within a 10-minute walk of the Library; however, since it is located upslope of the main campus, a more extensive effort by both pedestrians and bicyclists may be required to reach it. A covered pedestrian connection to the proposed Science Complex may also be required to provide shelter from rain. This alternative site is closer to the science-related activities in University Park than the proposed site.

Construction Access. Access to this site would be directly from Nowelo Street.

Topography and Slopes. Aside from grading for Nowelo Street, the Science Complex site is relatively undisturbed. Slopes average between 5 and 15 percent with steeper slopes occurring closer to Waiākea Stream. Careful site planning considerations should be given to accommodate ADA requirements, as the majority of the site has slopes in excess of 5 percent.

Flooding and Drainage. Although this site is not located in an area subject to flooding, it borders the Wailoa Flood Control Project (WFCP). The WFCP serves as a barrier to access, as there are limited areas for stream crossing between University Park and the UH-Hilo main campus. However, the alternative site is located adjacent to the Nowelo Street bridge over the WFCP.

Infrastructure. All utilities are available from Nowelo Street.

Site Drainage. The natural flow is toward Waiākea Stream.

Functional Relationship. This site is over a quarter of a mile from Wentworth Hall. Development of the Science Complex on this site will mean that some programs, such as Marine Science and Geology, will be separated from the main science programs during the interim. Departmental and class scheduling issues would need to be addressed. The entire development of this site, as proposed in this analysis, will not be able to accommodate all of the parking required for the facilities (368 stalls).

Relation to the UH-Hilo LRDP. The LRDP designated this site for future campus expansion, but did not identify a specific program for this area.

Phasing. The timeline for development of the Science Complex at this site is the same as that for Site 1. Cost data for development of this site is not available. Development of the alternative site for a Science Complex would not impact any existing buildings (such as requiring demolition) so phasing would be less problematic in terms of scheduling classes.

5.2.2 Site Selection

Site 1 (proposed in this Final EA) was selected as the Science Complex site in 2004. Although development of this site will require the demolition of several existing facilities, the science programs will be located in the same area, enabling faculty and students to easily walk between proposed and existing science facilities. Site 1 has been previously modified to accommodate

existing buildings, compared to the vacant Site 2, which would need to be cleared. Development of the Science Complex at Site 1 will enable more efficient use of the site, on which existing buildings are mostly in poor to fair condition.

5.3 HIGHER DENSITY BUILDINGS ON OPEN LAWNS

This alternative involves building on open lawns and limiting demolition to only those buildings in poor condition. This alternative, however, would significantly reduce the amount of open space within the UH-Hilo campus and result in several buildings of varying age and physical condition. With a higher-density development, roads and sewer and water facilities within the project area would be more heavily impacted. While a more land efficient alternative to the proposed action, this alternative has therefore been rejected because of the low-rise character of the campus.

5.4 PREFERRED ALTERNATIVE

Development of the UH-Hilo Science Complex on the main campus is the preferred alternative and would meet the objectives of the project. The proposed Science Complex will provide educational opportunities to meet the needs of a growing student population and interest in science curriculum. The proposed site was selected after a thorough site analysis was conducted. This alternative is consistent with the project objectives and would provide new and enhanced facilities for science programs near existing science buildings within the main campus. The new facilities would significantly increase the floor area of the project site over existing conditions, enabling more efficient use of the site. This alternative is also preferred as it is consistent with the LRDP, which planned for the removal of the Beaumont Agricultural Research Center, College Hall C, and Portable Buildings 13 and 14.

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6.0

Determination, Findings, and Reasons for Supporting Determination

6.0 DETERMINATION, FINDINGS, AND REASONS FOR SUPPORTING DETERMINATION

6.1 SIGNIFICANCE CRITERIA

The State Department of Health, *Hawaii Administrative Rules*, Title 11, Chapter 200 (Environmental Impact Statement Rules) establishes a "significance criteria" for determining whether an action may have a significant impact on the environment. Based on the significance criteria and its relation to the proposed project (described as follows), a Finding of No Significant Impact (FONSI) is anticipated for the proposed UH-Hilo Science Complex.

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

The proposed Science Complex is located on the UH-Hilo Campus, which has been extensively modified for the development of buildings, walkways, underground infrastructure lines, and landscaping. There are no known natural or cultural resources on the Science Complex site, and as such, no natural or cultural resources will be lost or destroyed as a result of this project.

An archaeological assessment was conducted for the off-site parking lot site, and no archaeological sites or features were identified during the survey. As such, no further archaeological work is recommended based on the findings of the survey. The archaeological assessment has been submitted to SHPD for review. Any mitigation of impacts to resources will be according to the requirements of SHPD and applicable laws and regulations.

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

Currently, the UH-Hilo Campus provides educational and employment opportunities for the benefit of Hawai'i residents. The proposed Science Complex will not change the beneficial use of the site but will improve existing programs through the development of new and enhanced science facilities. Each of the proposed facilities will be designed to blend with surrounding structures and will comply with height restrictions of the RS-10 zoning district. Landscaping will be developed to enhance the aesthetic environment. While it is acknowledged that the proposed parking lot site will change the buffer between the campus and the closest residents along West Lanikaula, without the parking lot, students may start to begin parking more and more on nearby residential streets, including West Lanikaula.

3. *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*

The proposed Science Complex is consistent with the long-term environmental policies, goals, and guidelines of Chapter 344, HRS, as it will "encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawaii." The project will create educational and employment opportunities that are stable and in

balance with the physical and social environments. Additionally, the programs made available by the proposed Science Complex will enhance students' understanding of the environment. The project is also consistent with *The General Plan – Hawaii County;* Chapters 205 and 343, HRS; and the *University of Hawai'i at Hilo Long Range Development Plan*, as discussed in Chapter 3.0 of this Final EA.

4. *Substantially affects the economic welfare, social welfare, and cultural practices of the community or State;*

The proposed UH-Hilo Science Complex will provide residents with educational opportunities and employment opportunities (short-term construction and long-term operation of the facilities). The sale of construction materials and the expenditure by workers will have a positive economic impact on local businesses. All Hawai'i residents will benefit from the project through the generation of State tax revenues.

5. *Substantially affects public health;*

Construction activities may result in short-term noise and air quality impacts; however the project is not anticipated to substantially affect public health. Construction equipment would be equipped with mufflers, as required under State Department of Health (DOH) regulations. In the event that construction noise exceeds, or is expected to exceed, the maximum permissible noise level allowable at property line limits (70 dBA), a permit would be obtained from the DOH to allow these activities and to mitigate potential short-term construction noise impacts. All construction activities will comply with the provisions of *Hawaii Administrative Rules*, §11-60.1-33 on Fugitive Dust, and dust and debris control measures will be implemented to mitigate potential short-term air quality impacts. The proposed project will be connected to the existing municipal wastewater system. Over the long term, the proposed Science Complex is not expected to result in noise, air quality, or other impacts that may affect public health.

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

Existing facilities on the project site will be replaced by the new Science Complex facilities. Although the project will increase the current density of the site, no significant increase in the UH-Hilo student population or the County population is anticipated.

7. *Involves a substantial degradation of environmental quality;*

Potential environmental impacts of the proposed Science Complex, as well as possible mitigation measures, have been discussed previously in the Final EA. No substantial degradation of environmental quality is expected to result from the proposed development.

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

The proposed Science Complex does not involve a commitment for larger actions and is not expected to have a considerable effect on the existing urbanized environment. Construction-

related impacts would be short-term and would occur over several years as the facilities are developed.

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

There are no known rare, threatened, or endangered species, or habitats for such species, on or near the urbanized Science Complex project site, nor on the proposed off-site parking lot.

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

Potential short-term air quality and noise impacts could result from construction activities; however, such impacts are not expected to be detrimental. No water quality impacts are anticipated, and all site work will be performed in accordance with applicable standards, rules, and regulations.

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

The project site is located on the main campus of the UH-Hilo, which is not an environmentally-sensitive area. The sites are located approximately 1.3 miles from the shoreline (and out of the tsunami evacuation zone) and the Science Complex site and the majority of the off-site parking lot are designated as Zone X (areas beyond the 100-year and 500-year floodplains) by the FIRM (Figure 15).

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

Neither the Science Complex site nor the proposed off-site parking lot is on the list of Natural Beauty Sites in the General Plan. As discussed in *Section 4.10 Visual Resources*, construction of the proposed Science Complex facilities would change the visual character of the Science Complex site from a mixture of building styles to more modern facilities with a more consistent architectural style. This would be most apparent to passers-by traveling along West Lanikaula. Views of the proposed off-site parking lot from West Lanikaula Street would change from a vacant lot overgrown with strawberry guava trees to a landscaped parking lot. This would have the greatest impact ton the nearest residences. After construction, the new facilities could also impact makai views from the resident hall facilities mauka of the proposed Science Complex. However, the sloping topography and higher density nature of the proposed facilities could provide new views of Mauna Kea, Mauna Loa, and the coastline from the project site. Additionally, the proposed off-site parking lot will be adequately screened with landscaping and be equipped with lighting that meets Hawai'i County standards. The proposed project is expected to alter the appearance of this portion of the campus from West Lanikaula Street, but is not expected to impact important public viewing points or visual resources. Furthermore, the majority of the proposed facilities will comply with the maximum allowable height of structures (35 feet) for the RS-10 zoning district and will further enhance the architectural elements of the existing campus building. The Science and Technology Building will be approximately 67'4", and as such, a height variance permit will need to be obtained prior to the start of construction.

13. Requires substantial energy consumption.

Construction of the proposed Science Complex will not require substantially more energy than would be required for projects of similar type and scale. Operation of the proposed facilities is not expected to require significantly more energy than is currently consumed by existing facilities, although site density will increase. Development of the Science Complex will occur over several years, with proposed buildings constructed separately. The proposed facilities will be designed with materials and landscaping to reduce heat loads. To further minimize energy consumption, the facilities will use day lighting and energy-efficient lighting systems.

6.2 DETERMINATION

Various studies conducted within the project area have identified potential environmental impacts from similar developments. Based on these studies, the proposed UH-Hilo Science Complex is not expected to pose substantial short-term, long-term, or cumulative adverse impacts on the local or regional, natural or human environment. As such, a Finding of No Significant Impact (FONSI) is anticipated.

7.0
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7.0 REFERENCES

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APPENDIX A

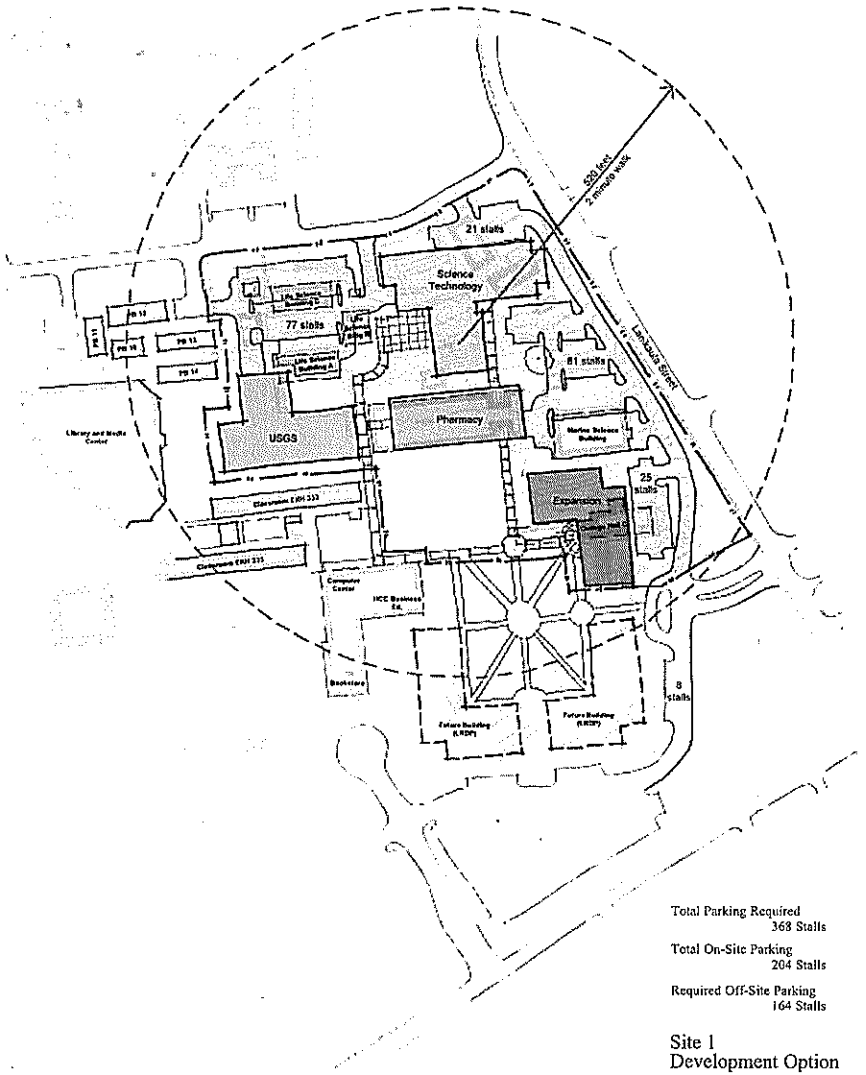
UH-HILO SCIENCE COMPLEX:
SITE SELECTION ANALYSIS

UH-Hilo Science Complex:

Site Selection Analysis

November 8, 2004

PBR HAWAII kajioka yamachi ARCHITECTS



Total Parking Required
368 Stalls

Total On-Site Parking
204 Stalls

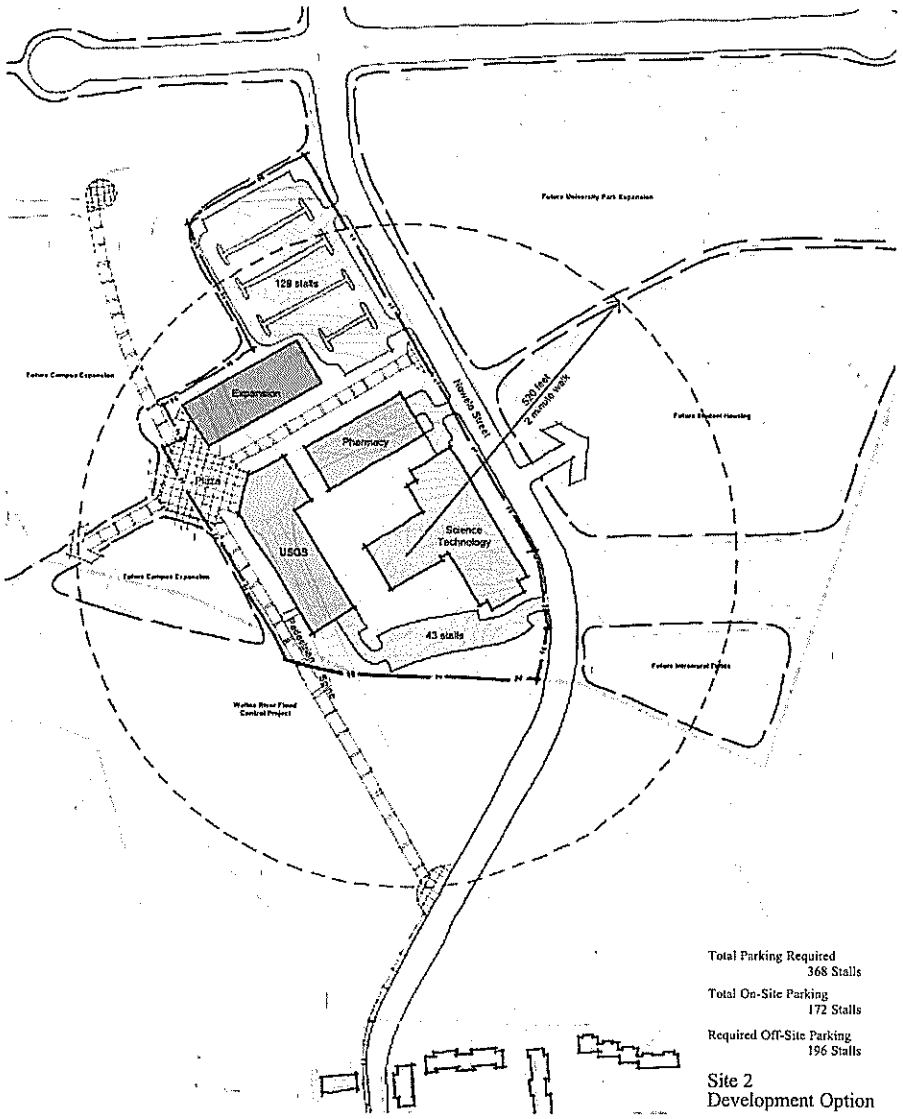
Required Off-Site Parking
164 Stalls

Site 1
Development Option

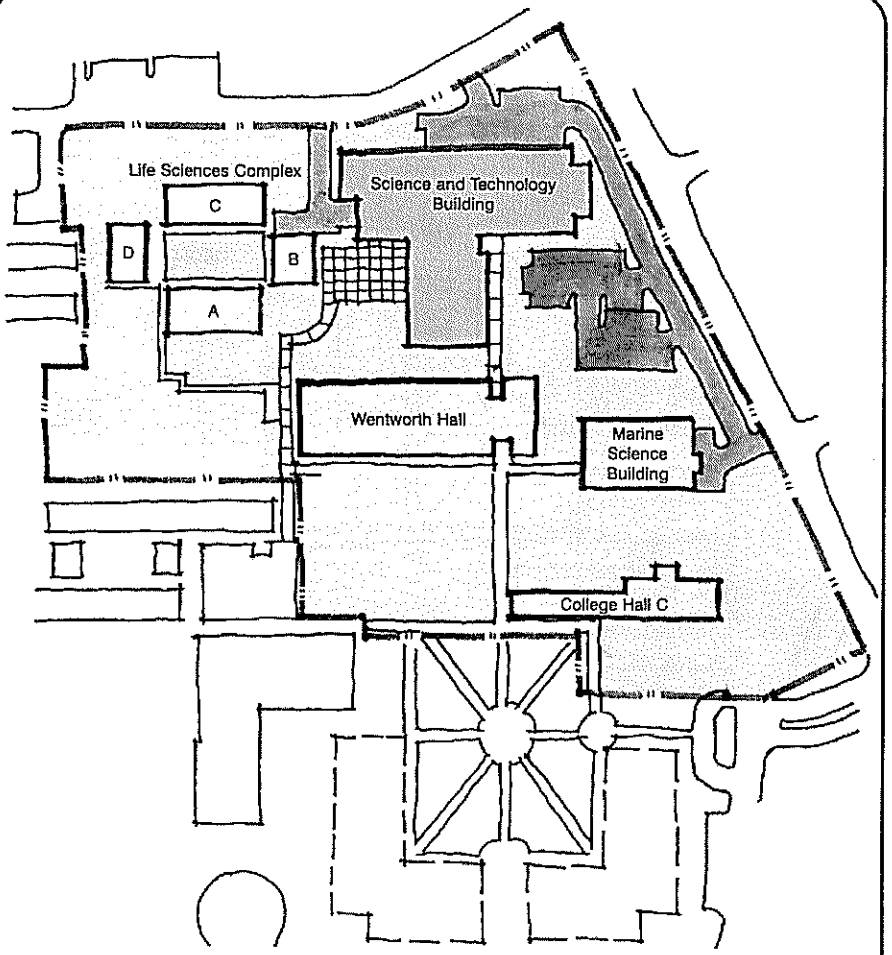
UH-Hilo Science Complex

Island of Hawaii

LINEAL SCALE (FEET)
20 0 20 40 140



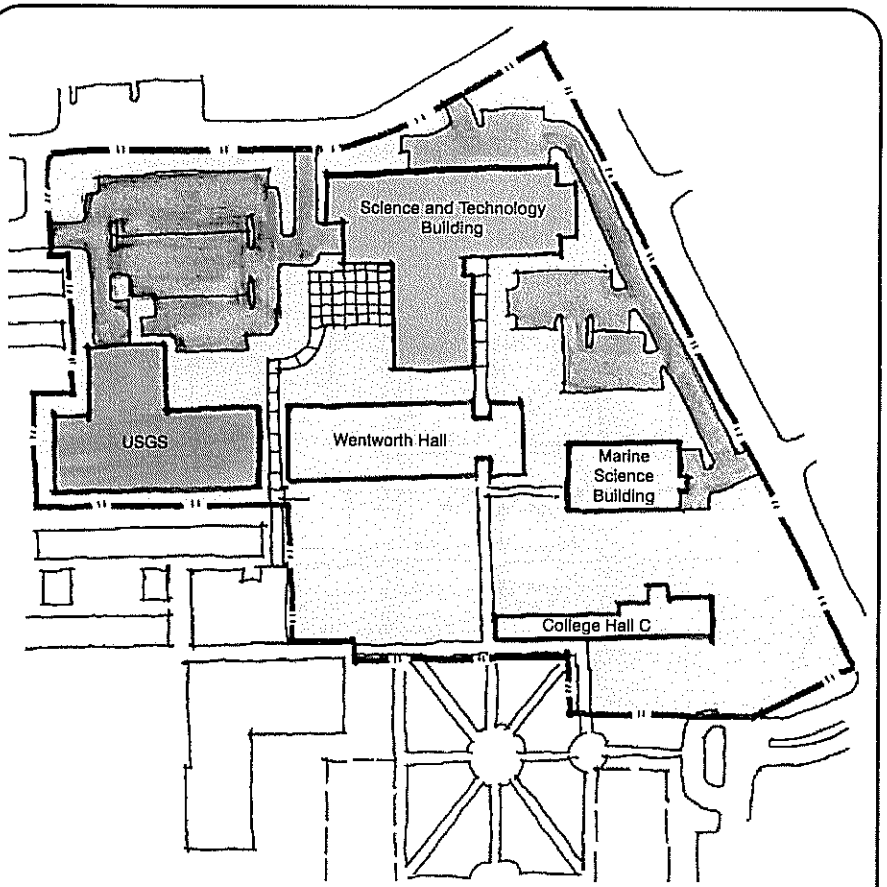
Site 1: Conceptual Phasing



Demolition:
- Beaumont Facilities and adjoining parking

New Construction:
- Science and Technology Building and related parking

Conceptual Phasing • Phase 1

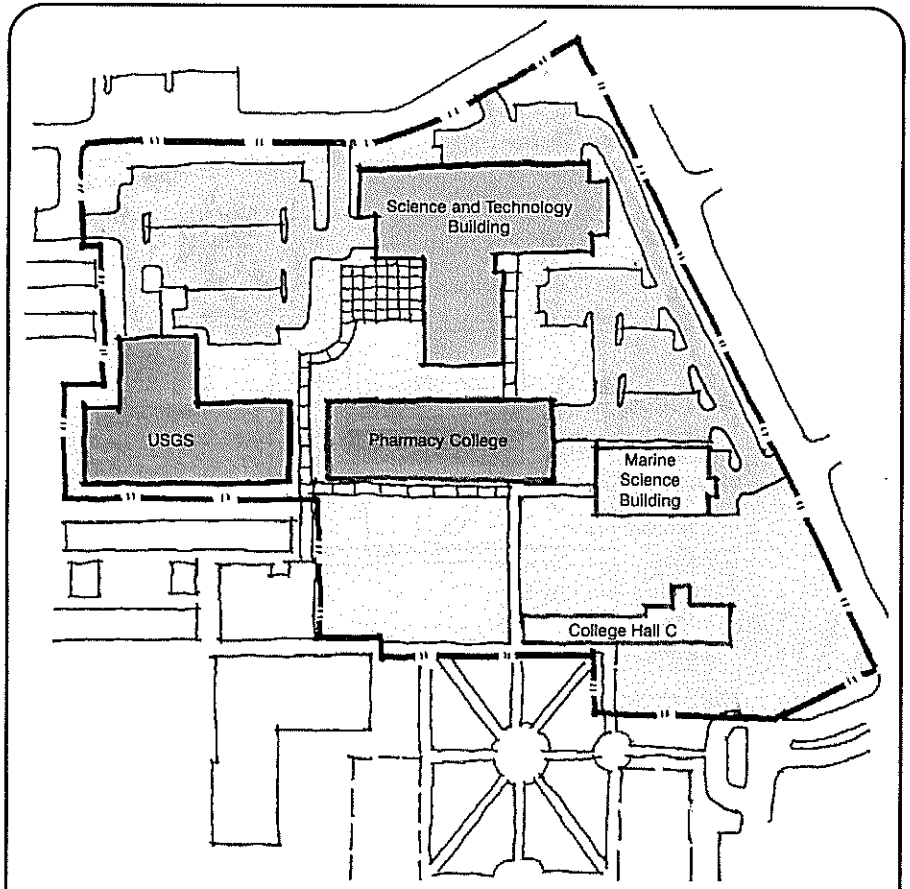


Demolition:
- Entire Life Sciences Complex
- Possibly PB 13 and 14

New Construction:
- United States Geological Survey (USGS) Building and related parking

The construction of the USGS parking area will take place after the USGS Building is complete, allowing unhindered access to the USGS Building while construction takes place. Therefore, PB 13 and 14 will not need to be removed for construction of the USGS Building to take place. However, as an option, PB 13 and 14 can be demolished to provide additional "off-site" parking for the Science Complex.

Conceptual Phasing • Phase 2

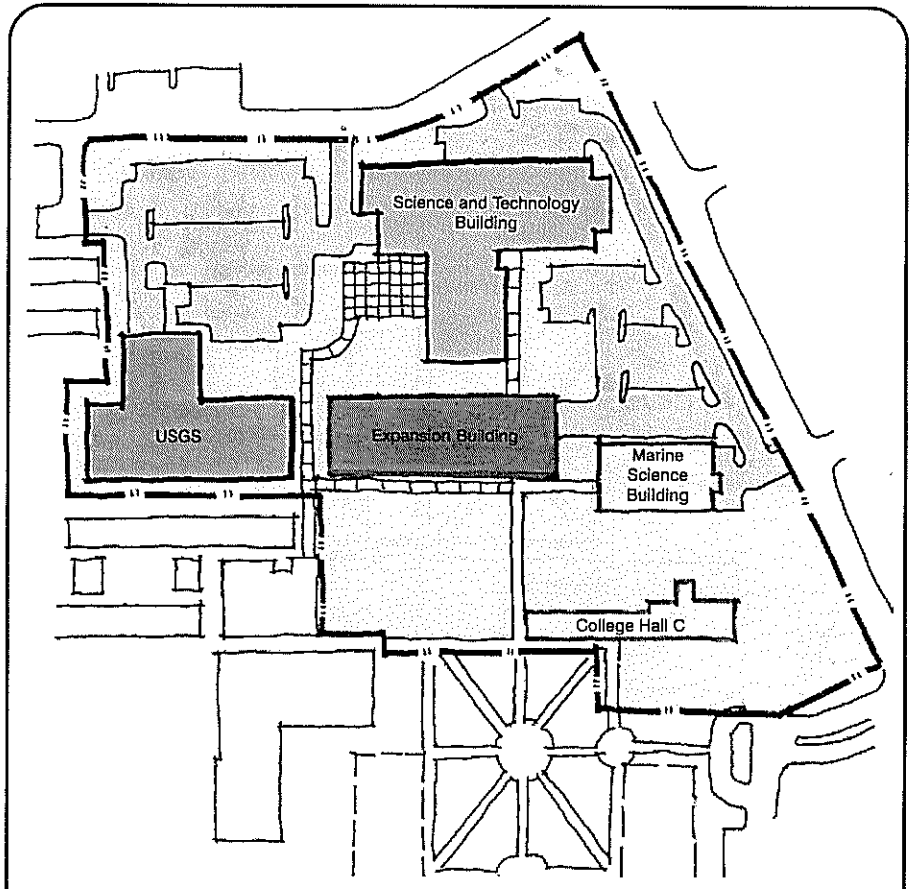


Demolition:
- Wentworth Hall

New Construction:
- Pharmacy College and related parking

It has not been determined whether the Pharmacy College will actually be a part of the Science Complex. This scenario of Phase 3 illustrates the outcome if the Pharmacy College does in fact join the Science Complex. However, if the Pharmacy College will not be included in this development, Phase 3 Alternative on the next page depicts the outcome.

Conceptual Phasing • Phase 3

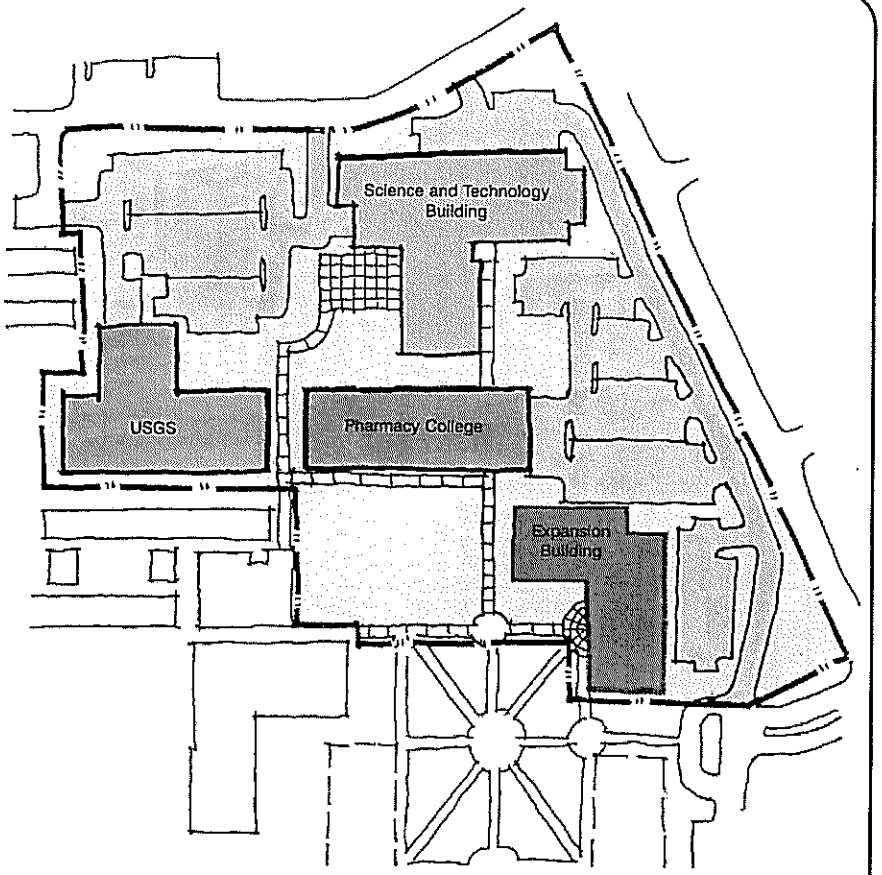


Demolition:
- Wentworth Hall

New Construction:
- Expansion Building and related parking

If the Pharmacy College does not join the Science Complex, then the Expansion Building can take its place on the site. By doing so, the Marine Science Building and College Hall C can remain untouched, and the need for a "Phase 4" will no longer be necessary. Factors surrounding the development of the Expansion Building are discussed further in the "Site Analysis Matrix" under "Future Expansion".

Conceptual Phasing • Phase 3 Alternative



Demolition:
- Marine Science Building
- College Hall C

New Construction:
- Expansion Building and related parking

The need for this phase is dependant on many factors, such as the location of the Pharmacy College. These issues are discussed further in the "Site Analysis Matrix" under "Future Expansion".

Conceptual Phasing • Phase 4

Site Analysis Matrix

SITE ANALYSIS MATRIX

CRITERION	SITE ONE - (BEAUMONT)	SITE TWO - (UHH EXPANSION)
Archaeological Sites	No known archaeological sites were identified on the campus. There may be cultural significance associated with the property and this would need to be investigated as part of the HRS Chapter 343 (EA/EIS law) requirements.	Four archaeological sites were identified on the property in the 1993 EA for the UH Hilo Infrastructure for Research and Technology Lots. The sites include a field complex, enclosure, enclosure/wall, and field. Based on the type and age of the sites as well as data collected and analyzed, no further work was recommended for the area. During the preparation of the EA, a Hawaiian group (Ho'oikaika Research Committee) raised concerns regarding the impact of development within the property. In the EA comment letters, it appears that a portion of the property was also identified by former Chancellor Kormondy, for "long-range educational and research purposes". The EIS prepared for the University Park in 1997 also noted that no further archaeological research is needed for the features found on the property. In the EIS, the State Historic Preservation Division concluded that the proposed development would have "no effect" on significant historic sites. Although the sites may not have historic significance based on SHPD/DLNR criteria, there may be cultural significance associated with the property and this would need to be investigated as part of the HRS Chapter 343 (EA/EIS law) requirements.
Geological Conditions	A geo-technical survey is not available for this site.	A geo-technical survey is not available for this site. The 1997 EIS prepared for the University Park noted that unstable thixotropic soils may be present in the project site The EIS recommended that geotechnical investigations be conducted in the design phase to determine soil types and suitability for proposed construction. If unstable thixotropi soils are encountered, the design of the project will have t adhere to the recommendations contained in the geotechnical report.

SITE ANALYSIS MATRIX

CRITERION	SITE ONE - (BEAUMONT)	SITE TWO - (UHH EXPANSION)
Existing Conditions		
Existing Structures	All existing buildings on this site are currently being used for the sciences except for the Beaumont Agricultural Research Center which is leased to UH Manoa. The following buildings will be impacted during the developmer process: Life Sciences (Bldg. 344), Wentworth (Bldg. 348) Marine Science, College Hall (Bldg. 345C),Beaumont Buildings (Bldg. 350) and possibly PB 13 and 14.	This site is vacant with no existing buildings.
Neighborhood Context	This site is within a residential context. Immediately West of the site, across Lanikaula Street is a church and an Army Reserve Center.	According to the 1996 LRDP, this site will eventually be surrounded by classrooms, student housing, parking, and intramural sports facilities.
Existing Landscaping / Natural Vegetation	There is one rare tree identified on the property. Planning for this site must avoid impact to the tree. The site has been urbanized and most of the landscaping is ornamental.	A botanical survey was conducted for the University Park in 1992. The survey notes that vegetation along the eastern portions of the University Park (in the vicinity of Site 2) is comprised mainly of introduced species, primarily secondary forest trees such as the Gunpowder tree, Melochia, and Chinese Banyan. No plants officially listed as threatened or endangered, or candidates for such designation, exist on the property. The study recommends that native vegetation be incorporated into landscaping for the campus. An area located approximately mauka (West) of this site was formerly identified as suporting "high quality native vegetation" by Lani Stemmermann in a 1992 letter to then Chancellor Kormondy. A subsequent EIS prepared for the University Park in 1997 also concluded that none of the plants encountered during the botanical surveys were threatened, endangered, or considered rare or vulnerable on the property; nor were any plants proposed or candidates for such designation found on the property.
State & County Land Use Designation	Designated State Land Use "Urban" County General Plan "University" and Zoned "R-S-10"	Designated State Land Use "Urban" County General Plan "University" and Zoned "RS-10"

SITE ANALYSIS MATRIX

CRITERION	SITE ONE - (BEAUMONT)	SITE TWO - (UHH EXPANSION)
Topography and Slopes	The topography on the site has been significantly modified to accommodate the existing buildings in this area. As such, it is characterized by flatter building pads in areas graded for the existing buildings and steeper slope banks between structures. This site will require careful site planning to accommodate the Americans with Disabilities Act (ADA) requirements.	Aside from the grading for Nowelo Street, this area is relatively undisturbed. Slopes average between 5 and 15 percent with the steeper slopes occurring closer to Waiakea Stream. Because a majority of the site has slopes in excess of 5 percent, careful site planning considerations should be given to accommodate ADA requirements.
Flooding and Drainage	The site is not located in an area subject to flooding.	The site is not located in an area subject to flooding but borders the Wailoa Flood Control Project (WFCP). The flood zones and flood prone areas associated with the Waiakea Stream and WFCP will be avoided in planning fo this site. It should be noted that the University is currently working on a plan to redefine the drainage channel, however, that plan is not depicted on the site analysis as it has not yet been accepted by the federal government. The WFCP serves as a barrier to access, as there is limited areas for stream crossing, between the University Park and the main campus.
Infrastructure		
Utilities- Water, Sewer, electric, Communications	All utilities are available from the University entry street off of Lanikaula Street.	All utilities are available from Nowelo Street. An existing waterline easement (to be abandoned) and a 50-foot wide electrical easement (to be relocated) are located in the vicinity of Nowelo Street, adjacent to the site.
Site Drainage	The natural flow of storm water is in the direction of Wentworth Hall and the Marine Science Building.	The natural flow is toward Waiakea Stream.

SITE ANALYSIS MATRIX

CRITERION	SITE ONE - (BEAUMONT)	SITE TWO - (UHH EXPANSION)
Sensory Conditions - Visual	Visual considerations are an obvious sensory asset on the site. Major views are to the north, northeast and northwest toward downtown Hilo and the Bay. Construction of the Science Complex facilities could impact mauka views from surrounding areas. The new facilities could also impact makai views from the resident hall facilities (mauka of the proposed Science Complex). The sloping topography and higher density nature of the proposed facilities could result in both mauka and makai views from the new Science Complex facilities.	Visual considerations are an obvious sensory asset on the site. Major views are to the north, northeast and northwest toward downtown Hilo and the Bay. Construction of the Science Complex facilities could impact mauka views from surrounding areas. The new facilities would not impact makai views from the existing University Park facilities as they are located farther downslope from the existing facilities. The sloping topography and higher density nature of the proposed facilities could result in both mauka and makai views from the new Science Complex facilities.
Sensory Conditions - Noise	Although this site is located closer to residences along Lanikaula Street, impacts from the development of a Science Complex are not anticipated to result in any significant long-term noise impacts to residences in the surrounding neighborhood.	The site is bordered by the Wailoa Flood Control Channel, future University Park Expansion, University Expansion an Student Housing. Development of this site as a Science Complex should not result in any significant noise impact.
Access and Circulation	For vehicular access, the site will be accessible off of Lanikaula Street as well as through a planned loop road system identified in the LRDP. For pedestrian and bicycle access, the site is located closer to the central portion of the main campus and is within a 5-minute (1,300 ft) walk t the Library.	The site is accessible off of Lanikaula Street through its connection to Nowelo Street. It is also directly accessible from Nowelo Street with access off of Komohana Street. For pedestrian and bicycle access, this site is farther removed from the main campus. The site is within a 10-minute walk to the Library. Being located upslope from the existing campus, it will require more extensive effort to reach by both pedestrians and bicycles. A covered pedestrian connection may also be required to provide sheltered access from the rain to the Science Complex. A Science Complex in this area will be in closer proximity to the science-related activities in the University Park which could be beneficial if a synergistic relationship exists between the Science Complex and the activities within the University Park.
Construction Access	Construction vehicles and equipment have an easy access from Lanikaula Street.	Access to this site is directly from Nowelo Street.

SITE ANALYSIS MATRIX

CRITERION	SITE ONE - (BEAUMONT)	SITE TWO - (UHH EXPANSION)
Future Expansion	Expansion of the science program beyond the three phases described previously can only be accomplished by demolishing other existing facilities because this site does not have sufficient open space to add facilities without doing so. Buildings such as College Hall and the Marine Sciences Building will need to be removed to make way for an expanding science program. An expansion building for the Sciences will depend on factors such as the economic feasibility of demolishing the existing Marine Sciences Building, and the desire to implement the proposed plan of the 1996 LRDP. If the Pharmacy College is not located in this complex, the expansion can be accomplished by replacing Wentworth with a new building. (Note: For the purposes of establishing the Science Complex site area, a fifty percent increase in the science program floor area has been assumed.)	Expansion can be accomplished without demolishing existing facilities, but the facilities would be spread between two parts of the campus as noted above. (Note: For the purpose of establishing the Science Complex area a fifty percent increase in the science program floor area has been assumed.)
Sustainable Design		
Site Selection	This site does not outwardly meet any of the criteria for sites that should not be developed under this credit. There seems to be no apparent issues with gaining this LEED point if this site is selected.	The development of this site would entail the uprooting an removal of existing vegetation. Additionally, development would be along Waiakea Stream. If University Park is considered "Public Parkland" or if any development will be at an elevation lower than 5'-0" above the 100-year flood line (as defined by FEMA) then Sustainable Sites: Credit 1 will not be attainable.
Urban Redevelopment	Site 1 is currently under utilized with regards to density. This site could gain a LEED point if the existing development density is**60,000 sq. ft. per acre**, and the Science District increases the current density to meet that.	This site is currently not developed at all, and therefore would not be considered under the Urban Redevelopment credit.

SITE ANALYSIS MATRIX

CRITERION	SITE ONE - (BEAUMONT)	SITE TWO - (UHH EXPANSION)
Overall Campus Context/Phasing		
Functional Relationship	This site is excellent with respect to its proximity to existing science buildings. However, coordination of new building construction with the demolition of older buildings will be a major issue and is discussed under the section on Phasing below. Displacement of existing parking is also critical but there appears to be enough space to at least replace the parking that will be lost due to the construction of the initial Science and Technology Building. The entire developmer of this site as a proposed Science Complex will not be abl to accommodate all of the parking required for all of the facilities. Therefore, parking will need to be provided on additional areas throughout the campus.	This site is over a quarter of a mile (as the crow flies) from Wentworth Hall. Development of a Science Complex on this site will mean that some programs, such as Marine Science and Geology, will be separated from the main science programs, including math and computer science, for quite a while. This raises not only departmental issues but also class changing and scheduling concerns. These problematic issues may require reconsidering the space program and space allocation for the first new building to be constructed. The entire development of this site as a proposed Science Complex will not be able to accommodate all of the parking required for all of the facilities. Therefore, parking will need to be provided on additional areas throughout the campus.
Relation To LRDP	Locating the Science Complex in this area would be a divergence from the LRDP. The LRDP did not envision the demolition of buildings within Site 1. The new facilities within the Science Complex have been planned to work in conjunction with the 1996 LRDP.	This site is identified for future campus expansion in the 1996 LRDP, although a specific program was not identifie in the LRDP for this area. The site plan for this site has been designed to work with the LRDP.
Phasing	Construction of buildings on this site would be more difficu for phasing as each building constructed would impact and disrupt existing facilities on the campus. Because of this, the plan must carefully consider the replacement of space that will be lost in each of the buildings that will be demolished. The following is one possible scenario for phasing the development of the science complex. Phase One: The Science and Technology Building. To construct this building, the Beaumont facilities and the parking lot will have to be demolished. Phase Two: Construction of the USGS Building. This will require removal of the Life Sciences Buildings and PB 13 and 14. Phase Three: The College of Pharmacy. The Pharmacy Building will require demolition of Wentworth Hall.	The site is located in an undeveloped area, away from existing facilities. It is better suited for phasing from the standpoint of not needing to replace/accommodate spaces for buildings which are impacted by the new facilities. However, this will result in a separation between the existing science facilities and the new facilities in Site 2. The Science and Technology Building will be the initial building constructed on the campus. The remaining buildings that would be phased as needed as the timing fo the additional buildings has not yet been established.

SITE ANALYSIS MATRIX

CRITERION	SITE ONE - (BEAUMONT)	SITE TWO - (UHH EXPANSION)
Cost Data		
Science and Technology Building	$20,000,000	
Wentworth Hall	$900,000	
USGS Building	$30,000,000	
Pharmacy Building	$18,000,000	
Timeline		
Science and Technology Building	Design and construction - Nov. '04 to May '07. Construction funding is not available at this time. The University is hopeful that the 2005 Legislative Session will provide the necessary funds. Design contract has been executed and project design may begin subject to site selection.	Design and construction - Nov. '04 to May '07. Construction funding is not available at this time. The University is hopeful that the 2005 Legislative Session will provide the necessary funds. Design contract has been executed and project design may begin subject to site selection.
United States Geological Survey (USGS) Building	Design and construction - Feb. '05 to Aug. '07. Design an construction funding is needed. Federal funding will be necessary for this project to proceed and timing will be dictated by the appropriation of such funding.	Design and construction - Feb. '05 to Aug. '07. Design an construction funding is needed. Federal funding will be necessary for this project to proceed and timing will be dictated by the appropriation of such funding.
College of Pharmacy	Design and construction - Nov. '05 to May '08. The Board of Regents has approved the pharmacy program for the UH-H. Design and construction funding will be needed.	Design and construction - Nov. '05 to May '08. The Board of Regents needs to approve the pharmacy program for the UH-H. After that, design and construction funding will be sought.
Expansion Building	Program space demands will dictate the timing for a new building.	Program space demands will dictate the timing for a new building.

SITE ANALYSIS MATRIX

CRITERION	SITE ONE - (BEAUMONT)	SITE TWO - (UHH EXPANSION)
Building Reuse	The development of this site has the potential to gain three LEED points through the reuse of existing buildings on site Existing buildings that are not in extreme disrepair can be retrofitted to accommodate new programs, and demolished materials that are reused after on-site processing, such as crushing, can also be applied to this credit.	While there are no existing buildings on this site, the use of demolished materials from Site 1 that are processed on-site, such as crushing, can be applied to this credit. However, the availability of such materials would depend solely on the demolition of buildings on Site 1, and attainin the percentages necessary to gain the points would be difficult.

Programmatic Requirements and Calculations

Planning Summary Sheet

Science and Technology Building[1]	
Assignable Square Footage (ASF)	43,341
Non-Assignable Floor Area[11]	43,165
Total Building Floor Area (Gross Square Footage)	**86,506**
United States Geological Survey + 30,000 sq. ft.	
USGS[2]	
Assignable Square Footage (ASF)	23,160
Non-Assignable Floor Area[3]	6,840
Subtotal	**30,000**
UH-Hilo[4]	
Assignable Square Footage (ASF)	18,750
Non-Assignable Floor Area	11,250
Subtotal	**30,000**
Total Building Floor Area (Gross Square Footage)[5]	**60,000**
Pharmacy College[6]	
Assignable Square Footage (ASF)	24,635
Non-Assignable Floor Area	14,781
Total Building Floor Area (Gross Square Footage)	**39,416**
Expansion Building	
Geology[7]	
Assignable Square Footage (ASF)	6,099
Non-Assignable Floor Area	3,660
Subtotal	**9,759**
Marine Sciences[8]	
Assignable Square Footage (ASF)	7,317
Non-Assignable Floor Area	4,390
Subtotal	**11,707**
Common Use Classroom Space for Science and Technology Building[9]	
Assignable Square Footage (ASF)	9,910
Non-Assignable Floor Area	5,946
Subtotal	**15,856**
50% Future Expansion	
Assignable Square Footage (ASF)	6,709
(50% Geology Expansion 3,050)	
(50% Marine Sciences Expansion 3,659)	
Non-Assignable Floor Area	4,025
Subtotal	**10,734**
Total Building Floor Area (Gross Square Footage)	**48,056**

[1]Program information collected from the June 2003 Science and Technology Building Project Development Report.

[2]USGS program requirements collected from William W. M. Steiner in a memo addressed to Lo-Li Chih dated August 12, 2003.

[3]The USGS promised half of the 60,000 square foot building to UH-Hilo, leaving a total of 30,000 square feet for each institution. The non-assignable floor area in this case, is the difference between the total square footage and the given assignable square footage.

[4]UH-Hilo has not developed a program for this space yet, leaving the entire 30,000 sq. ft. unassigned. To determine the ASF, the subtotal of 30,000 sq. ft. was divided by the standard 1.6 multiplier.

[5]"Total Building Floor Area" for the USGS was pre-determined in a memo dated July 16, 2004, titled "S&T Master Plan Meeting Notes", which was distributed during a meeting at the University of Hawaii - Hilo, Campus Center Room 313, on July 19, 2004 .

[6]Program information collected from the September 2004 College of Pharmacy Project Development Report.

[7]Geology program is taken from the existing program provided by Lo-Li Chih.

[8]Marine Science program is taken from the existing program provided by Lo-Li Chih.

[9]For lack of available space in the Science and Technology Building, these spaces were placed in Wentworth Hall. Part of the phasing for Site 1 requires the eventual demolition of Wentworth Hall. Space has been allocated in this Expansion Building to compensate for the eventual displacement of these classrooms.

[10]A standard multiplier of 1.6 was used to account for the "Non-Assignable Floor Area" and determine the "Total Building Square Footage". This is a standard number used for planning purposes only, and will fluctuate when the actual design of each building is being developed.

[11]"Non-Assignable Floor Area" refers to those spaces that are necessary for a building to function properly, but are not included in the programmed spaces. These include, but are not limited to, structure, circulation, restrooms, mechanical rooms, electrical rooms, etc...

Parking Requirements[1]

Science and Technology Building

			No. of Parking Stalls
Office ASF	21,246	divide by 400 sq. ft.	53.115
No. of Students of Design	527	divide by 10 students	52.7
Subtotal			**105**

Standard Parking Stalls	67 stalls
Compact Parking Stalls	33 stalls
Handicapped Accessible Stalls	4 stalls
Van Accessible Stalls	1 stall

USGS (+30,000 sq. ft.)

			No. of Parking Stalls
Office ASF	23,160	divide by 400 sq. ft.	57.9
No. of Students of Design	0	divide by 10 students	0
Subtotal			**58**
(+30,000 sq. ft.)			
30,000 sq. ft. - 1.6 circulation multiplier =	18,750 ASF		
Estimate half the space to offices	9,375	divide by 400 sq. ft.	23.4375
Estimated No. of Students of Design	185	divide by 10 students	18.5
Subtotal			**42**
USGS Subtotal			**100**

Standard Parking Stalls	65 stalls
Compact Parking Stalls	31 stalls
Handicapped Accessible Stalls	3 stalls
Van Accessible Stalls	1 stall

Pharmacy College

			No. of Parking Stalls
Office ASF	13,135	divide by 400 sq. ft.	32.838
No. of Students of Design	382	divide by 10 students	38.2
Subtotal			**71**

Standard Parking Stalls	46 stalls
Compact Parking Stalls	22 stalls
Handicapped Accessible Stalls	2 stalls
Van Accessible Stalls	1 stall

Expansion Building

			No. of Parking Stalls
Geology			
Office ASF	2,043	divide by 400 sq. ft.	5.108
No. of Students of Design	97	divide by 10 students	9.7
Subtotal			**15**

Marine Sciences			
Office ASF	2,721	divide by 400 sq. ft.	6.8025
No. of Students of Design	141	divide by 10 students	14.1
Subtotal			21
Common Use Classroom Space for Science and Technology Building			
Office ASF	1,170	divide by 400 sq. ft.	2.925
No. of Students of Design	377	divide by 10 students	37.7
Subtotal			41
50% Future Expansion			
Estimate half the space to offices	3,354	divide by 400 sq. ft.	8.385
Estimated No. of Students of Design	67	divide by 10 students	6.7
Subtotal			15
Expansion Subtotal			92

Standard Parking Stalls	59 stalls
Compact Parking Stalls	29 stalls
Handicapped Accessible Stalls	3 stalls
Van Accessible Stalls	1 stall

Grand Total	**368 Stalls**

[1]Parking requirements based on the 1995 Hawaii County Code, Zoning - Division 5; Section 25-4-51: One (1) stall for each ten (10) students of design capacity and one (1) for every 400 sq. ft. of office floor space. At least 67% of the parking stalls must be standard sized stalls (18'-0" x 8'-6"), 33% may be compact stalls (16'-0" x 7'-6"). Standard Parallel stalls = 22'-0" long, Compact Parallel stalls = 18'-0" long.

[2]Accessible stall parking requirement based on the 1995 Hawaii County Code, Zoning - Division 5; Section 25-4-55: 301 to 400 total parking stalls requires eight (8) handicapped accessible stalls (96" W x 216" D w/ 96" aisle). One (1) in every eight (8) accessible stalls must be Van accessible (108" W x 216" D w/ 96" access aisle).

[3]May reduce one (1) parking stall for every five (5) bicycle stalls provided.

FAR Comparisons
(Existing vs. New)

Program	Existing	
	Site 1	Site 2
Beaumont Agriculture Research Center	6,268.10	0
College Hall C	7,525.86	0
Life Sciences Buildings		0
Building A	3,694.81	0
Building B	1,989.10	0
Building C	3,685.35	0
Building D	2,088.29	0
Marine Sciences Building	7,835.64	0
Wentworth Hall	17,284.64	0
Total Floor Area	**50,371.79**	**0**
Total Site Area	**326,320.13**	**293,095.72**
Floor Area Ratio (FAR)	**0.154**	**0**

Program	New	
	Site 1	Site 2
Science and Technology Building	86,506	86,506
US Geological Survey (USGS)	30,000	30,000
(+30,000 sq. ft.)	30,000	30,000
Pharmacy College	39,416	39,416
Expansion Building	48,056	48,056
Total Floor Area	**233,978**	**233,978**
Total Site Area	**326,320.13**	**293,095.72**
Floor Area Ratio (FAR)	**0.717**	**0.798**

Science and Technology Building[1]
Spatial Requirements

Astronomy

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
A-100	Lower/Upper Div. Lab w/ Storage	1,300		1,300			1,300
A-101	Roof Top Observatory	250		250			250
A-102	Optical Research Laboratory	160		160			160
A-103	Instrument Research and Fabrication	360		360			360
A-104	Research Infrastructure and Support	160		160			160
A-105	Observatory Control	300	300				300
A-106	Library/Data Archive	160	160				160
A-107	Faculty Office	600	600				600
A-108	Observatory Director/Staff Support	240	240				240
A-109	Technician Office	240	240				240
A-110	Equipment Storage	160	160				160
A-111	Student Assist Workroom	200	200				200
	Subtotal	4,130	1,900	2,230			4,130

Physics

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
P-100	Lower Division Laboratory	990		990		990	
P-100a	Lower Division Laboratory Storage	650		650		650	
P-101	Upper Division Laboratory	320		320		320	
P-102	Senior Research Laboratory	310		310		310	
P-103	Faculty Research Laboratory	310		310		310	
P-104	Faculty Office	600	600			600	
P-105	Instructor Office	150	150			150	
	Subtotal	3,330	750	2,580		3,330	

Chemistry

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
C-100	General Chemistry Laboratory	1,300		1,300			1,300
C-101	Organic/Bio-Chem Laboratory	1,000		1,000			1,000
C-102	Physical/Analytical Chem. Laboratory	1,000		1,000			1,000
C-103	Advanced Research Laboratory (4)	1,200		1,200			1,200
C-104	MNR	150		150			150
C-105	X-Ray	310		310			310
C-106	Chromatography	80		80			80
C-107	Spectroscopy	80		80			80
C-108	Balance	660		660			660
C-109	Stock/Prep Laboratory	660		660			660
C-110	Faculty Office	900	900				900
C-111	Technical Office	150	150				150
C-112	Bulk Chemical Storage	320		320	320		
C-113	New Teaching Laboratory	1,000		1,000			1,000
	Subtotal	8,810	1,050	7,760	320		8,490

Biology

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
B-100	Faculty Office	1,800	1,800			1,800	
B-101	Tech. Grad. Offices	300	300			300	
B-102	Faculty Research Laboratory	1,860		1,860		1,860	
B-103	Media Prep Laboratory	410		410		410	
B-104	Chemical Storage	165		165		165	
B-105	Glassware Storage	330		330		330	
B-106	Sterile Transfer Laboratory	340		340		340	
B-107	Field Biology Processing	160		160	160	1,860	

Science and Technology Building
University of Hawaii - Hilo

Biology Continued

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
B-108	Field Biology Processing-Shwrs/Lckrs	290		290	290		
B-109	Herbarium	80		80	80		
B-110	DNA Laboratory	270		270		270	
B-111	Isotope Laboratory	80		80		80	
B-112	Dark Room	75		75		75	
B-113	Freezer Room	270		270	270		
B-114	Controlled Environment Rooms	660		660	660		
B-115	Biochem/Cell & Molecular Teaching Lab	980		980		980	
B-116	Cold Room	80		80		80	
B-117	Environ./Gen./Zoo. & A.P. Teaching Lab	1,330		1,330		1,330	
B-118	Genetics/Ecology/Biology Teaching Lab	1,310		1,310		1,310	
B-119	New Teaching Laboratory	980		980		980	
B-120	New Teaching Laboratory	980		980		980	
	Subtotal	12,750	2,100	10,650	1,460	11,290	

Computer Science

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
CS-100	CS Upper Division Lab and Storage	980	980		980		
CS-101	CS Lower Division Lab and Storage	980	980		980		
CS-102	CS Laboratory	650	650		650		
CS-103	CS Laboratory	650	650		650		
CS-104	CS Support and Repair Suite	990	990		990		
CS-104a	CS Server Room	0					
CS-104b	Storage	0					
CS-104c	Technician	0					
CS-105	Faculty Office	1,350	1,350		1,350		
	Subtotal	5,600	5,600		5,600		

Mathematics

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
M-100	Math Tutorial Lab	990	990		990		
M-104	Faculty Office	1,800	1,800		1,800		
	Subtotal	2,790	2,790		2,790		
E-100	EPSCoR Office	430	430		430		
	Subtotal	430	430		430		
D-100	Division Chair Office	150	150		150		
D-101	Division Clerical/Work Areas	821	821		821		
	Subtotal	971	971		971		

Common Use

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
CU-101a	Classroom w/ domed projection ceiling	720	720				720
CU-104	Machine Shop	310		310	310		
CU-106	Project Exhibit	370	370		370		
CU-107	Visiting Fac./Lecturer/Post Dr.	300	300		300		
CU-108	Loading Dock/Field Storage	590		590	590		
CU-109	Conference Rooms	940	940		320	310	310
CU-111	Student Computer Lab	970	970		320	320	330
CU-111a	New Student Computer Lab	330	330				330
	Subtotal	4,530	3,630	900	2,210	630	1,690

Grand Total for Science Tech. Building	43,341	19,221	24,120	13,781	15,250	14,310

Common Use Classroom Space (renovation of Wentworth Hall)

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2	Floor 3
CU-100	Classroom - 50	1,480	1,480		1,480		
CU-101	Classroom - 35	520	520		520		
CU-101b	Classroom - 35	1,830	1,830		1,830		
CU-101c	Classroom - 35	1,260	1,260		1,260		
CU-102	Lecture Hall	1,530	1,530		1,530		
CU-103	Lecture Preparation	320	320		320		
CU-105	Lounge/Seminar Room	420	420		420		
CU-105a	Lounge/Seminar Room	220	220		220		
CU-107	Visiting Fac./Lecturer/Post Dr.	850	850		850		
CU-110	Electronic (Computer) Classroom	1,480	1,480		1,480		
	Subtotal	**9,910**	9,910		**9,910**		

Grand Total for Science Tech. Program	**53,251**	**29,131**	**24,120**

[1]Program information collected from the June 2003 Science and Technology Building Project Development Report.

United States Geological Survey (USGS)[1]
Spatial Requirements

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
O-100	Office 1	450	450			450
O-101	Water Resources (WRD) Office	400	400		400	
O-102	Office 3	400	400			400
O-103	Office 4	300	300			300
O-104	Office 5	300	300			300
O-105	Office 6	300	300			300
O-106	Office 7	250	250			250
O-107	Office 8	250	250			250
O-108	Office 9	250	250			250
O-109	Office 10	250	250			250
O-110	Office 11	250	250			250
O-111	Office 12	250	250			250
O-112	BRD Shop Office	200	200		200	
O-113	Office 14	200	200			200
O-114	Office 15	200	200			200
O-115	Office 16	200	200			200
O-116	Mammology Office	150	150		150	
O-117	Office 18	150	150			150
O-118	Office 19	150	150			150
O-119	Office 20	150	150			150
O-120	Office 21	150	150			150
O-121	Office 22	150	150			150
O-122	Office 23	150	150			150
O-123	Office 24	150	150			150
O-124	Water Resources (WRD) Office	120	120		120	
O-125	Office 26	120	120			120
O-126	Office 27	120	120			120
O-127	Office 28	100	100			100
O-128	Office 29	100	100			100
O-129	Office 30	100	100			100
O-130	Office 31	100	100			100
	Subtotal	**6,410**	**6,410**		**870**	**5,540**

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
L-100	Water Resources (WRD) Laboratory	2,000		2,000	2,000	
L-101	Lab 2	800		800		800
L-102	Lab 3	800		800		800
L-103	Lab 4	750		750		750
L-104	Lab 5	750		750		750
L-105	Lab 6	750		750		750
L-106	Lab 7	600		600		600
L-107	Mammology Laboratory	400		400	400	
L-108	Lab 9	400		400		400
L-109	Lab 10	400		400		400
	Subtotal	**7,650**		**7,650**	**2,400**	**5,250**

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
	Incubator and Refrigerator Room	200		200		200
	Microscope Room	200		200		200
	Tissue Culture Room, sterile	200		200		200
	Dark Room	150		150		150
	Reception Area	300	300			300
	Reception Area (FWS)	150	150			150
	Archive Room	400	400			400
	Files Room	100	100			100
	Files Room 2	100	100			100
	Copy Room	100	100			100
	Copy Room 2	100	100			100
	Maps and Planning Room	400	400			400
	Server Room, cooled	200	200			200
	Kitchen and Break Room	400	400			400
	Shower Room w/ Lockers	100	100			100
	Conference Room	600	600			600
	Conference Room 2	400	400			400
	Shop Area	5,000		5000	5,000	
	Subtotal	**9,100**	**3,350**	**5,750**	**5,000**	**4,100**

USGS Total		**23,160**	**9,760**	**13,400**	**8,270**	**14,890**

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
	UH-Hilo (Classrooms/Offices/Labs)[2]	18,750	?	?	?	?
	Subtotal	**18,750**				

UH-Hilo Total		**18,750**				

Grand Total		**41,910**				

[1]USGS program requirements collected from William W. M. Steiner in a memo addressed to Lo-Li Chih dated August 12, 2003.

[2]Program requirements are not known.

Pharmacy College[1]
Spatial Requirements

Administration

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
A-100	Administrative Waiting	100	100		100	
A-101	Administrative Conference	240	240		240	
A-102	Dean's Secretary	100	100		110	
A-103	Dean's Office	210	210		210	
A-104	Budget Officer's Office	110	110		110	
A-105	Development Officer's Office	110	110		110	
A-106	Administrative Work/Refreshment	200	200		200	
A-107	Student Services Waiting/Secretary	200	200		200	
A-108	Student Services Officer's Office	110	110		110	
A-109	Associate Dean's Secretary	100	100		100	
A-110	Associate Dean's Office	175	175		175	
A-111	Student/Hourly Worker's Office	110	110		110	
A-112	Student Records Room	100	100		100	
A-113	Future Associate Dean's Secretary	100	100		100	
A-114	Future Associate Dean's Office	175	175		175	
A-115	Future Professional Staff's Office	110	110		110	
	Subtotal	**2,250**	**2,250**		**2,250**	

Technology

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
T-100	Technology Waiting	100	100			100
T-101	Director's Office	110	110			110
T-102	Technician Office	100	100			100
T-103	Technician Office	100	100			100
T-104	Technician Office	100	100			100
T-105	Technician Work Area	150	150			150
T-106	Student Printer/Photocopy Room	150	150			150
	Subtotal	**810**	**810**			**810**

Instruction

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
I-100	Large Classroom - 75	1,875	1,875		1,875	
I-101	Large Classroom - 75	1,875	1,875		1,875	
I-102	Flexible Seating Classroom - 25	625	625			625
I-103	Flexible Seating Classroom - 25	625	625			625
I-104	Small Group Conference - 8	200	200		200	
I-105	Small Group Conference - 8	200	200		200	
I-106	Small Group Conference - 8	200	200		200	
I-107	Small Group Conference - 8	200	200		200	
I-108	Drug Information Center - 75	1,875	1,875		1,875	
I-109	Drug Information Resources Storage	200	200		200	
I-110	Parenterials Products Formulation Lab	250		250	250	
I-111	Prescription Processing Lab	1,250		1,250	1,250	
I-112	Patient Counseling Practice Room	200		200	200	
I-113	Physical Assessment Room	1,250	1,250		1,250	
I-114	Biomedical Sciences Instructional Lab	875		875	875	
	Subtotal	**11,700**	**9,125**	**2,575**	**10,450**	**1,250**

Faculty Research

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
R-100	Chemistry Laboratory - 2	700		700		700
R-101	Storage Room	100		100		100
R-102	Pharmaceutics Laboratory - 2	800		800		800
R-103	Storage Room	75		75		75
R-104	Cell Culture Lab	125		125		125
R-105	Pharmacology Laboratory - 2	800		800		800
R-106	Storage Room	75		75		75
R-107	Cell Culture Lab	125		125		125
R-108	Pharmacology Laboratory - 4	1,030		1,030		1,030
R-109	Storage Room	50		50		50
R-110	Cell Culture Lab	120		120		120
R-111	Biomedical Sciences Laboratory - 2	550		550		550
R-112	Storage Room	50		50		50
R-113	Freezer Room	200		200		200
R-114	Common Research Support	500		500		500
R-115	Cold Room	100		100		100
	Subtotal	**5,400**		**5,400**		**5,400**

Pharmacy Practice

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
PP-100	Departmental Waiting/Secretary	200	200			200
PP-101	Department Chair's Secretary Office	100	100			100
PP-102	Clerkship Secretary's Office	100	100			100
PP-103	Department Chair's Office	175	175			175
PP-104	Departmental Work/Refreshment Room	100	100			100
PP-105	Departmental Conference Room	240	240			240
PP-106	Part-Time Faculty Office - 3	225	225			225
PP-107	Faculty Office	120	120		120	
PP-108	Faculty Office	120	120		120	
PP-109	Faculty Office	120	120			120
PP-110	Faculty Office	120	120			120
PP-111	Faculty Office	120	120			120
PP-112	Faculty Office	120	120			120
PP-113	Faculty Office	120	120			120
PP-114	Faculty Office	120	120			120
PP-115	Faculty Office	120	120			120
PP-116	Faculty Office	120	120			120
PP-117	Faculty Office	120	120			120
	Subtotal	**2,460**	**2,460**		**240**	**2,220**

Pharmaceutical Sciences

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
PS-100	Departmental Waiting/Secretary	200	200			200
PS-101	Department Chair's Secretary Office	100	100			100
PS-102	Department Chair's Office	175	175			175
PS-103	Departmental Work/Refreshment Room	100	100			100
PS-104	Departmental Conference Room	240	240			240
PS-105	Faculty Office	120	120			120
PS-106	Faculty Office	120	120			120

Pharmacy College
University of Hawaii - Hilo

Pharmaceutical Sciences Continued

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
PS-107	Faculty Office	120	120			120
PS-108	Faculty Office	120	120			120
PS-109	Faculty Office	120	120			120
PS-110	Faculty Office	120	120			120
PS-111	Faculty Office	120	120			120
PS-112	Faculty Office	120	120			120
PS-113	Faculty Office	120	120			120
PS-114	Faculty Office	120	120			120
	Subtotal	**2,015**	**2,015**			**2,015**

Grand Totals	**24,635**	**16,660**	**7,975**	**12,940**	**11,695**

*Program information collected from the September 2004 College of Pharmacy Project Development Report.

Expansion Building
Spatial Requirements

Geology[1]

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
109	Office	406	406		406	
110	Classroom	910	910		910	
118	Conference/Lounge Room	268	268		268	
119	Geophysics Lab Office	230	230		230	
120	Geophysics Laboratory	242		242	242	
121	Mineralogy Laboratory	831		831	831	
122	Equipment Laboratory	190		190	190	
123	Geochemistry Laboratory	772		772	772	
123 A	Equipment Laboratory	119		119	119	
124	Instrument Laboratory	332		332	332	
125	Rock/Mineral Laboratory	430		430	430	
126	Office	194	194		194	
127	Rock Preparation Room	194		194	194	
128	Storage	95		95	95	
202	Instrument Lab Office	202	202			202
203	Rock Prep. Room Office	202	202			202
204	Office	202	202			202
205	Office	140	140			140
206	Office	140	140			140
	Subtotal	**6,099**	**2,894**	**3,205**	**5,213**	**886**

Marine Sciences[2]

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
101	Lecture Hall	941	941		941	
103	Classroom	553	553		553	
104	Wet Lab	880		880	880	
105	Office	190	190		190	
106	Work	88	88		88	
107	Office	190	190		190	
108	Office	190	190		190	
109	Analytical Laboratory	800		800	800	
110	Office	190	190		190	
111	Office	190	190		190	
112	Computer Lab	800		800	800	
113	Office	190	190		190	
114	Office	190	190		190	
115	Conference Room	240	240		240	
116	Office	190	190		190	
117	Office	193	193		193	
118	Office	193	193		193	
119	Office	255	255		255	
120	Conference Room	232	232		232	
121	Wet Specimen Laboratory	138		138	138	
122	Preparation/Staging Laboratory	348		348	348	
123	Microscope/Dry Staging Laboratory	136		136	136	
	Subtotal	**7,317**	**4,215**	**3,102**	**7,317**	

Expansion Building
University of Hawaii - Hilo

Common Use Classroom Space for Science and Technology Building[3]

Room #	Name	Total ASF	Office	Lab	Floor 1	Floor 2
CU-100	Classroom - 50	1,480	1,480		1,480	
CU-101	Classroom - 35	520	520		520	
CU-101b	Classroom - 35	1,830	1,830		1,830	
CU-101c	Classroom - 35	1,260	1,260		1,260	
CU-102	Lecture Hall	1,530	1,530		1,530	
CU-103	Lecture Preparation	320	320		320	
CU-105	Lounge/Seminar Room	420	420		420	
CU-105a	Lounge/Seminar Room	220	220		220	
CU-107	Visiting Fac./Lecturer/Post Dr.	850	850		850	
CU-110	Electronic (Computer) Classroom	1,480	1,480		1,480	
	Subtotal	**9,910**	**9,910**		**9,910**	

50% Future Expansion

Program Name	Total ASF
Geology (50% Expansion)	3,050
Marine Sciences (50% Expansion)	3,659
Subtotal	**6,709**

Grand Total	**30,035**

[1]Geology program is taken from the existing program provided by Lo-Li Chih.

[2]Marine Science program is taken from the existing program provided by Lo-Li Chih.

[3]For lack of available space in the Science and Technology Building, these spaces were placed in Wentworth Hall. Part of the phasing for Site 1 requires the eventual demolition of Wentworth Hall. Space has been allocated in this Expansion Building to compensate for the eventual displacement of these classrooms.

APPENDIX B

MARCH 2005 DRAFT EA PUBLIC REVIEW COMMENT LETTERS AND RESPONSES

The DEA was published in the April 23, 2005 issue of the OEQC *The Environmental Notice* and sent to the parties listed in the following table. The 30-day public comment period ended on May 23, 2005. Agencies, organizations, or individuals that submitted comments on the Draft EA are listed in bold. Comment letters have been reproduced and are listed in the table below.

Draft EA Comment Letters

	AGENCY	DEA MAIL DATE	DATE OF COMMENTS	DATE OF RESPONSE
State				
1	Department of Business, Economic Development and Tourism – Office of Planning	4-12-05	--	--
2	**Department of Health – Environmental Planning Office**	4-12-05	5-17-05	2-21-07
3	**Department of Health – Office of Environmental Quality Control**	4-12-05	4-23-05	2-21-07
4	**Department of Land and Natural Resources**	4-12-05	5-12-05	2-21-07
5	Department of Land and Natural Resources – Historic Preservation Division	4-12-05	--	--
6	**Office of Hawaiian Affairs**	4-12-05	5-16-05	2-21-07
7	State Senate – Senator Lorraine Inouye	4-21-05	--	--
8	House of Representatives – Representative Jerry Chang	4-21-05	--	--
9	Hilo Public Library	4-12-05	--	--
10	UH Hilo Library	4-12-05	--	--
Federal				
11	U.S. Geological Survey	4-12-05	--	--
City				
12	Department of Water Supply	4-12-05	--	--
13	**Department of Research and Development**	4-21-05	5-20-05	2-21-07
14	**Department of Environmental Management**	4-21-05	5-5-05	--
15	Department of Parks and Recreation	4-12-05	--	--
16	**Planning Department**	4-12-05	6-16-05	2-21-07
17	Department of Public Works	4-12-05	--	--
18	**Fire Department**	4-21-05	5-16-05	2-21-07
19	Police Department	4-21-05	--	--
Other Organizations/Individuals				
20	Hawaii Electric Light Co., Inc.	4-21-05	--	--

LINDA LINGLE
GOVERNOR OF HAWAII

Post-it® Fax Note 7671	Date 5/24	# of pages ▸ 2
To Martha	From Loli	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 961-4989	Fax #	

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

In reply, please refer to:
EPO-05-033

May 17, 2005

RECEIVED
2005 MAY 23 AM 11:55
FACILITIES PLANNING
UH HILO

Mr. Lo-li Chih
University of Hawaii at Hilo
200 West Kawili Street
Hilo, Hawaii 96720

Dear Mr. Chih:

SUBJECT: Draft Environmental Assessment for Science Complex
University of Hawaii at Hilo
TMK: (3) 2-4-57: 25, 26

Thank you for allowing us to review and comment on the subject document. We have the following comments to offer. Please also refer to our website for the Standard Comments (www.state.hi.us/health/environmental/env-planning/landuse/landuse.html). If there are any questions about these comments please contact Jiacai Liu with the Environmental Planning Office at 586-4346.

Environmental Planning Office

We suggest that a more complete list of permits and approvals required (p. 13) be provided in the Final EA.

What is the completion timeline for the drainage master plan (p. 27)? We suggest that Drainage Master Plan approval be included in the list of permits and approvals required (p. 13). The statement that "This section [4.14 Drainage and Grading] may change significantly upon completion of the drainage master plan" (p. 27) suggests that a final Environmental Assessment should not be published until after drainage master plan approval, and that a revised draft Environmental Assessment should be published if the

drainage master plan significantly changes the Drainage and Grading section of the assessment.

Sincerely,

June F. Harrigan-Lum

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: EPO
CWB

PBR HAWAII
& ASSOCIATES, INC.

W. FRANK BRANDT, FASLA
Chairman

THOMAS S. WITTEN, ASLA
President

R. STAN DUNCAN, ASLA
Executive Vice-President

RUSSELL Y. J. CHUNG, FASLA
Executive Vice-President

VINCENT SHIGEKUNI
Vice-President

GRANT T. MURAKAMI, AICP
Principal

TOM SCHNELL, AICP
Senior Associate

RAYMOND T. HIGA, ASLA
Senior Associate

KEVIN K. NISHIKAWA, ASLA
Associate

KIMI MIKAMI YUEN, LEED® AP
Associate

SCOTT ALIKA ABRIGO
Associate

SCOTT MURAKAMI, ASLA
Associate

HONOLULU OFFICE
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Honolulu, Hawai'i 96813-3484
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Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

HILO OFFICE
101 Aupuni Street
Hilo Lagoon Center, Suite 310
Hilo, Hawai'i 96720-4262
Tel: (808) 961-3333
Fax: (808) 961-1989

WAILUKU OFFICE
1787 Wili Pā Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

February 21, 2007

Ms. June F. Harrigan-Lum, Manager
Environmental Planning Office
State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Ms. Harrigan-Lum:

Thank you for your letter dated May 17, 2005. We appreciate your interest and participation in the public review phase of the Draft EA. We have revised the Draft EA to incorporate a proposed Lanikaula offsite parking lot and also address your comments. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to your office for your review.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

O:\Job22\2257.05 UHH Science Tech Bldg-EA add\Responses to Draft EA Comment Letters\BL-11 State Health.doc

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

April 23, 2005

Bill Chen
UHH Administrative Affairs
200 West Kawili Street
Hilo, HI 96720

Attn: Lo-li Chih

Dear Mr. Chen:

Subject: Draft environmental assessment (EA), **UHH Science Complex**

We have the following comments:

Consultations: In the final EA document all contacts made during the pre-consultation phase and include copies of any correspondence.

Paving: Hawaii Revised Statutes 103D-407 requires the use of recycled glass in paving materials whenever possible. Indicate if this will be incorporated into the construction plans.

Segmentation: The environmental impact statement law prohibits segmentation of geographically-related projects and requires that full disclosure of impacts be made on such projects in their entirety. Section 4.23, *Cumulative Impacts*, describes six other related projects. These projects need to be discussed as a whole. A master plan is recommended for all proposed major activity on the campus. If a master plan is not forthcoming then please provide a full analysis and discussion of these related projects in the university area.

Figures:

a. The details in Figure 9 are barely discernible. Please enlarge this figure in the final EA.

b. Include drawings in the final EA of the proposed buildings and any proposed landscaping that show the final appearance of the project.

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

c: Marissa Furfaro

PBR HAWAII
& ASSOCIATES, INC.

February 21, 2007

Ms. Genevieve Salmonson, Director
State of Hawai'i
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawai'i 96813

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Ms. Salmonson:

Thank you for your letter dated April 23, 2005. We appreciate your interest and participation in the public review phase of the Draft EA. We have revised the Draft EA to incorporate a proposed Lanikaula offsite parking lot and also address your comments. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to your office for your review.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

O:\Job22\2257.05 UHH Science Tech Bldg-EA addl\Responses to Draft EA Comment Letters\BL-05 OEQC.doc

HONOLULU OFFICE
1001 Bishop Street
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Tel: (808) 961-3333
Fax: (808) 961-3939

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

Lo-li
Jun
Judy
Michael

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 12, 2005

UHHILOSCIENCEPBR.RCM

LD-NAV

RECEIVED
2005 MAY 13 AM 11:48
FACILITIES PLANNING
UH HILO

University of Hawaii at Hilo
Lo-li Chih
200 West Kawili Street
Hilo, Hawaii, 96720

Dear Ms. Chih:

Subject: Draft Environmental Impact Statement
University of Hawaii at Hilo Science Complex

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

A copy of the document pertaining to the subject matter was distributed or made available to the following Department of Land and Natural Resources' Divisions for their review and comment:

- Division of Forestry and Wildlife
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Hawaii District Land Office

Enclosed please find a copy of the Engineering Division comment and the Division of Forestry and Wildlife response.

The Department of Land and Natural Resources has no other comment to offer on the subject matter.

Should you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0384.

Very truly yours,

HARRY M. YADA
Acting Administrator

C: File

#1849

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 20, 2005

LD/NAV
Ref.: UHHILOSCIENCEPBR.CMT Suspense Date: 4/28/05

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Hawaii District Land Office

FROM: Harry M. Yada, Acting Administrator
Land Division

SUBJECT: Draft Environmental Impact Statement
Project: University of Hawaii at Hilo
Science Complex
Consultant: PBR Hawaii (Marissa Furfaro 961-3333)
TMK: (3) 2-4-057: portion of 025 and 026

Please review the attached document pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments. ( ) Comments attached.

Division: _____

Signed: Paul J. Conry

Date: APR 21 2005

Name: PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 20, 2005

LD/NAV
Ref.: UHHILOSCIENCEPBR.CMT Suspense Date: 4/28/05

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Hawaii District Land Office

FROM: Harry M. Yada, Acting Administrator
Land Division

SUBJECT: Draft Environmental Impact Statement
Project: University of Hawaii at Hilo
Science Complex
Consultant: PBR Hawaii (Marissa Furfaro 961-3333)
TMK: (3) 2-4-057: portion of 025 and 026

Please review the attached document pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at 587-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments. (X) Comments attached.

Division: Engineering

Signed: Andrew M. Monden

Date: 4/28/05

Name: For ERIC T. HIRANO, CHIEF ENGINEER

RECEIVED
LAND DIVISION
2005 APR 28 A 8:22
DEPT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

'05 APR 29 P04:17 ENGINEERING

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/NAV
Ref.: UHHILOSCIENCEPBR.CMT

COMMENTS

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

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

( ) 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 Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
( ) Mr. Mario Antonio at (808) 241-6620 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.

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

( ) Additional Comments: _____

( ) Other: _____

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: Andrew M. Monden
for ERIC T. HIRANO, CHIEF ENGINEER

Date: 4/28/05

PBR HAWAII
& ASSOCIATES, INC.

HONOLULU OFFICE
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813-3413
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: pbrhdom@pbrhawaii.com

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Hilo, Hawaii 96720-3262
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Fax: (808) 961-3679

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2578

February 21, 2007

Mr. Harry M. Yada, Acting Administrator
State of Hawai'i
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawai'i 96809

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Mr. Yada:

Thank you for your letter dated May 12, 2005. We appreciate your interest and participation in the public review phase of the Draft EA. We have revised the Draft EA to incorporate a proposed Lanikaula offsite parking lot and also address your comments. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to your office for your review.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

O:\job22\2257.05 UHH Science Tech Bldg-EA add\Responses to Draft EA Comment Letters\BL-07 State DLNR.doc

PHONE (808) 594-1888 FAX (808) 594-1865

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

HRD05/1815

May 16, 2005

Lo-li Chih
University of Hawai'i at Hilo
200 West Kawili Street
Hilo, HI 96720-4091

RE: University of Hawai'i at Hilo Science Complex, Hilo, Hawaii, TMK: (3) 2-4-57:25 (por) and 26 (por.).

Dear Lo-li,

The Office of Hawaiian Affairs (OHA) is in receipt of your April 15, 2005, request for comments on the above project, TMK: (3) 2-4-57:25 (por) and 26 (por.). OHA offers the following comments:

OHA commends the University of Hawai'i at Hilo for the intended use of native Hawaiian flora in your landscaping plans. The use of plants such as the 'ōhia (*Metrosideros polymorpha*) and uluhe (*Dicranopteris linearis*) will help to create the sense of a native landscape. 'Ōhia and uluhe were the dominant flora in the area prior to the construction of the University of Hawaii at Hilo campus and would be excellent choices for re-vegetating the proposed area of development.

The presence of the Pacific Golden Plover (*Pluvialis fulva*) in the "Mauka Lands" portion of the campus indicates that the area in general is conducive to native, in this case migratory, avian species. This presence should be promoted by the creation of more vegetated vicinities, which would expand the area where native avian species can subsist.

OHA has some concern for the potential of disrupting native Hawaiian cultural sites or burials during the proposed construction of the new facilities. While "the site has been previously modified to accommodate existing buildings" (p.19), there is a possibility that sub-surface cultural materials have survived within the bounds of proposed construction. Due to the potential for adversely affecting cultural properties, OHA recommends that all ground altering activities be monitored by a professional archaeologist.

OHA further requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck at 594-0239 or jessey@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

CC: Office of Environmental Quality Control
235 South Beretania St., Suite 702
Honolulu, HI 96813

Ululani Sherlock
Community Affairs Coordinator (OHA)
162 A Baker Ave.
Hilo, HI 96720-4869

✓Marissa Furfaro
PBR-Hawaii (Hilo Office)
101 Aupuni St., Suite 310
Hilo, HI 96720

PBR HAWAII
& ASSOCIATES, INC.

W. FRANK BRANDT, FASLA
Chairman

THOMAS S. WITTEN, ASLA
President

R. STAN DUNCAN, ASLA
Executive Vice-President

RUSSELL Y. J. CHUNG, FASLA
Executive Vice-President

VINCENT SHIGEKUNI
Vice-President

GRANT T. MURAKAMI, AICP
Principal

TOM SCHNELL, AICP
Senior Associate

RAYMOND T. HIGA, ASLA
Senior Associate

KEVIN K. NISHIKAWA, ASLA
Associate

KIMI MIKAMI YUEN, LEED® AP
Associate

SCOTT ALIKA ABRIGO
Associate

SCOTT MURAKAMI, ASLA
Associate

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Fax: (808) 961-8993

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

February 21, 2007

Mr. Clyde Nāmu'o, Administrator
State of Hawai'i
Office of Hawaiian Affairs
711 Kapi'olani Boulevard, Suite 500
Honolulu, Hawai'i 96813

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Mr. Nāmu'o:

Thank you for your letter dated May 16, 2005 (Reference HRD05/1815). We appreciate your interest and participation in the public review phase of the Draft EA. We have revised the Draft EA to incorporate a proposed Lanikaula offsite parking lot and also address your comments. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to your office for your review.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

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Harry Kim
Mayor

Jane H. Testa
Director

Diane L. Ley
Deputy Director

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

May 20, 2005

Mr. Lo-Li Chih
University of Hawai`i at Hilo
200 West Kawili Street
Hilo, Hawai`i 96720

Dear Mr. Chih:

Thank you for the opportunity to provide comments regarding the draft environmental assessment for the University of Hawai`i at Hilo's proposed Science Complex, March 2005. The County of Hawai`i's Department of Research and Development has reviewed the document and has no comments on the proposed improvements.

Sincerely,

Diane Ley
Deputy Director

cc: Dixie Kaetsu, Managing Director
Office of Environmental Quality Control
✓PBR Hawai`i – Hilo Office

PBR HAWAII
& ASSOCIATES, INC.

February 21, 2007

Ms. Diane Ley, Deputy Director
County of Hawai'i
Department of Research and Development
25 Aupuni Street, Room 109
Hilo, Hawai'i 96720-4252

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Ms. Ley,

Thank you for your letter dated May 20, 2005. We appreciate your interest and participation in the public review phase of the Draft EA. We have revised the Draft EA to incorporate a proposed Lanikaula offsite parking lot and also address your comments. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to your office for your review.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

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HONOLULU OFFICE
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Fax: (808) 961-3066

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

Harry Kim
Mayor

Barbara Bell
Director

Nelson Ho
Deputy Director

County of Hawaii
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
25 Aupuni Street, Room 210 • Hilo, Hawai'i 96720-4252
(808) 961-8083 • Fax (808) 961-8086
http://co.hawaii.hi.us/directory/dir_envmng.htm

May 5, 2005

Lo-li Chih
University of Hawai'i at Hilo
200 West Kawili Street
Hilo, HI 96720

SUBJECT: Draft Environmental Assessment
University of Hawai'i at Hilo Science Complex
TMKs: (3)2-4-57:25 (por.) and 26 (por.)

We have reviewed the subject Draft Environmental Assessment and offer the following comments:

- SOLID WASTE
  The South Hilo Sanitary Landfill is estimated to reach its maximum permitted capacity in March, 2006. The County reserves the right to reject construction and demolition wastes from County Landfills.

- WASTEWATER
  Please provide wastewater flow calculations for existing and upgraded facilities to the Department of Environmental Management, Technical Services Section.

Thank you for giving us the opportunity to comment and request your cooperation regarding our comments.

Barbara Bell
DIRECTOR

cc: OEQC
PBR Hawai'i – Hilo Office
SWD
TSS
WWD

6926

Hawai'i County is an equal opportunity provider and employer.

PBR HAWAII
& ASSOCIATES, INC.

February 21, 2007

Ms. Barbara Bell, Director
County of Hawai'i
Department of Environmental Management
25 Aupuni Street, Room 210
Hilo, Hawai'i 96720-4252

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Ms. Bell,

Thank you for your letter dated May 5, 2005. We appreciate your interest and participation in the public review phase of the Draft EA. We have revised the Draft EA to incorporate a proposed Lanikaula offsite parking lot and also address your comments. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to your office for your review.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

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Tel: (808) 961-3333
Fax: (808) 961-8993

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 1
Wailuku, Hawaii 96793-1871
Tel: (808) 242-2878

Harry Kim
Mayor

Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

County of Hawaii
PLANNING DEPARTMENT

101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • Fax (808) 961-8742

June 16, 2005

Mr. Lo-Li Chih
University of Hawaii at Hilo
200 West Kawili Street
Hilo, HI 96720

Dear Mr. Chih:

Draft Environmental Assessment
Subject: University of Hawaii at Hilo Science Complex
Tax Map Key: 2-4-1:167

In response to the above referenced document submitted for our review, we have the following to offer:

1. By Consolidation No. 363 approved on March 13, 1979, TMK: 2-4-57:25 and 26 and TMK: 2-4-1:por. 07, 162 and 163 were consolidated into a 115.164 acre lot. The tax map key number of the subject parcel has been redesignated from TMK: 2-4-57: por. of 25 and por. of 26 to TMK: 2-4-1:167.

2. **1.6 Identification of Agencies, Organizations and Individuals Consulted**

   According to the list provided, we note that pertinent State and County agencies were not consulted. Comments from the following agencies should be included:
   a. State Department of Health
   b. County of Hawaii:
      Public Works- Traffic, Engineering and Building Divisions
      Environmental Management
      Fire Department
   c. Department of Water Supply

Further, no private agencies or community individuals and organizations were listed as being consulted. As a reminder, government agencies and community consultation is required to ensure public participation in the environmental assessment process.

If you have questions, please feel free to contact Esther Imamura or Larry Brown of our Department at 961-8288.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

ETI:cd
P:\WPWIN60\ETI\EAdraftPre-consul\ChicFurfaroUHScience Complex.doc

xc: Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu HI 96813

Ms. Marissa Furfaro
PRB Hawaii
101 Aupuni Street, Suite 310
Hilo HI 96720

TMK: 2-4-57:25 & 26

PBR HAWAII
& ASSOCIATES, INC.

HONOLULU OFFICE
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ASB Tower, Suite 650
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Fax: (808) 961-3939

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawaii 96793-1271
Tel: (808) 242-2878

February 21, 2007

Mr. Chris Yuen, Director
County of Hawai'i
Planning Department
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720-3043

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Mr. Yuen,

Thank you for your letter dated June 16, 2005. We appreciate your interest and participation in the public review phase of the Draft EA. We have revised the Draft EA to incorporate a proposed Lanikaula offsite parking lot and also address your comments. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to your office for your review.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

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Harry Kim
Mayor

Darryl J. Oliveira
Fire Chief

Desmond K. Wery
Deputy Fire Chief

County of Hawai'i
FIRE DEPARTMENT
25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720
(808) 961-8297 • Fax (808) 961-8296

May 16, 2005

TO: LO-LI CHIH
UNIVERSITY OF HAWAII AT HILO
200 WEST KAWILI STREET
HILO, HAWAII 96720

FROM: DARRYL OLIVEIRA, FIRE CHIEF

SUBJECT: UNIVERSITY OF HAWAII AT HILO SCIENCE COMPLEX
APPLICANT: LO-LI CHIH
LOCATION: HILO
ISLAND: HAWAII
DISTRICT: HILO
TAX MAP KEYs: (3)2-4-57:25 (POR.) AND 26 (POR)

In regards to the above-mentioned University of Hawaii at Hilo Science Complex, 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.

DARRYL OLIVEIRA
Fire Chief

JCP:cmj

cc: Office of Environmental Quality Control
University of Hawaii at Hilo
PBR Hawaii – Hilo Office

PBR HAWAII
& ASSOCIATES, INC.

February 21, 2007

Chief Darryl Oliveira
County of Hawai'i
Fire Department
25 Aupuni Street, Room 103
Hilo, Hawai'i 96720-4252

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Chief Oliveira,

Thank you for your letter dated May 16, 2005. We appreciate your interest and participation in the public review phase of the Draft EA. We have revised the Draft EA to incorporate a proposed Lanikaula offsite parking lot and also address your comments. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to your office for your review.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

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Fax: (808) 961-1959

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

APPENDIX C

OCTOBER 2006 REQUEST FOR PRE-ASSESSMENT CONSULTATION COMMENTS

PBR HAWAII
LAND PLANNING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL STUDIES

WM. FRANK BRANDT, FASLA
CHAIRMAN

THOMAS S. WITTEN, ASLA
PRESIDENT

R. STAN DUNCAN, ASLA
EXECUTIVE VICE-PRESIDENT

RUSSELL Y.J. CHUNG, ASLA
EXECUTIVE VICE-PRESIDENT

VINCENT SHIGEKUNI
VICE PRESIDENT

GRANT MURAKAMI, AICP
PRINCIPAL

TOM SCHNELL, AICP
SENIOR ASSOCIATE

RAYMOND T. HIGA, ASLA
SENIOR ASSOCIATE

KEVIN NISHIKAWA, ASLA
ASSOCIATE

KIMI MIKAMI YUEN
ASSOCIATE

SCOTT ABRIGO
ASSOCIATE

SCOTT MURAKAMI, ASLA
ASSOCIATE

HONOLULU OFFICE
1001 BISHOP STREET
ASB TOWER, SUITE 650
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1787 WILI PA LOOP, SUITE 4
WAILUKU, HAWAI'I 96793-1271
TEL: (808) 242-2878
FAX: (808) 242-2902

October 20, 2006

Dear Participant:

SUBJECT: UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX PRE ASSESSMENT CONSULTATION
TMKs: (3) 2-4-01:07 and 167 (portions of)

We are in the process of preparing a Draft Environmental Assessment (EA) for the proposed University of Hawai'i at Hilo Science Complex, located at Waiākea, South Hilo, Hawai'i. As part of the scoping process, we are writing to consult with you as an area resident.

In the last ten years, the physical science, biology and marine science programs at UH-Hilo have grown. Most of the facilities housing science and technology programs were built in the 1950s and 1960s, and the size, amenities, number of classrooms, and teaching laboratories available are inadequate to accommodate the rapidly expanding programs. Existing buildings also lack proper utilities and are not flexible for modern science and technology programs. Multi-sized classes, tutoring and work spaces, and faculty offices are inadequate to serve program needs.

In order to meet the needs of a growing student population, the UH-Hilo proposes to construct a new Science Complex on the northern boundary of the main campus and a Lanikaula Off-Site Parking Lot. As shown on the attached map, the proposed project site sits on portions of Tax Map Keys (3) 2-4-01:07 and 167. The Science Complex site is north of the Library and Media Center, south and adjacent to West Lanikaula Street, east of the campus entry road from West Lanikaula Street, and west of the Bookstore. Across West Lanikaula Street, from the project site is the Church of the Holy Cross and the Waiākea Settlement YMCA. The proposed off-site parking lot sits east of Waiākea Stream.

Existing buildings and related parking areas will have to be demolished for the development of the proposed Science Complex buildings. The first phase of the project will see the construction of a three-story, approximately 42,630 square foot, Science and Technology building. Additionally, a 118-stall off-site parking lot (with future expansion for 70 additional parking stalls) will be constructed east of Waiākea Stream. There will be a buffer zone of approximately 24 feet between the parking lot and adjacent residences.

With this letter, we seek your comments on the proposed project as to what issues should be addressed in the Draft EA. Should you have any comments, please provide them by **Wednesday, November 1, 2006**. Please address your comments to me at:

PBR HAWAII
101 Aupuni Street, Suite 310
Hilo, Hawai'i 96720
Phone: 961-3333; **Fax:** 961-4989
mfurfaro@pbrhawaii.com

Copies of your comments should also be sent to the following:

Mr. Mike Godfrey
University of Hawaii at Hilo
Facilities, Planning and Construction
200 W. Kawili Street
Hilo, Hawai'i 96720-4091
Fax: (808) 443.0293

Please do not hesitate to contact me if you need any additional information or have any questions.

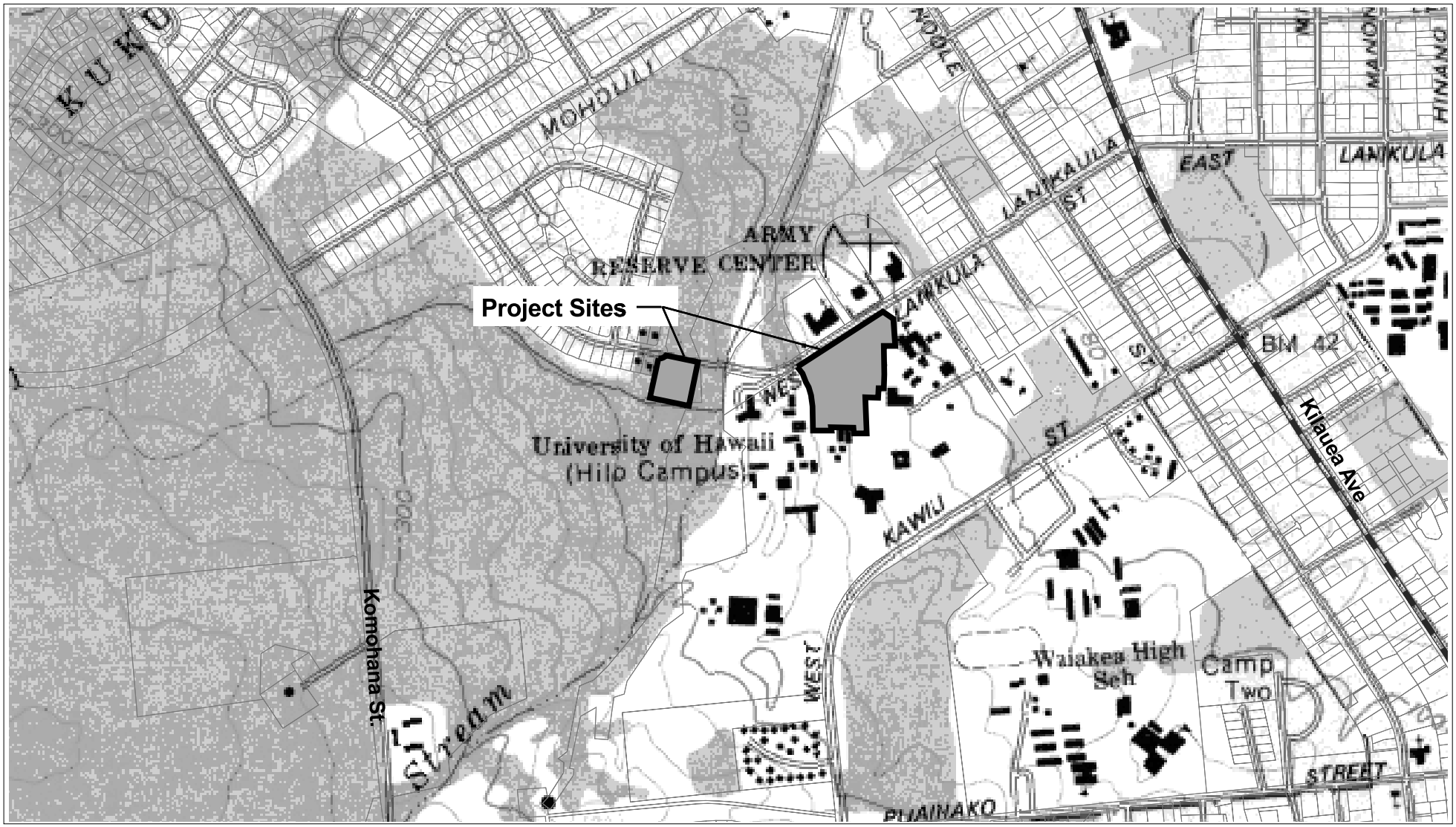
Sincerely,

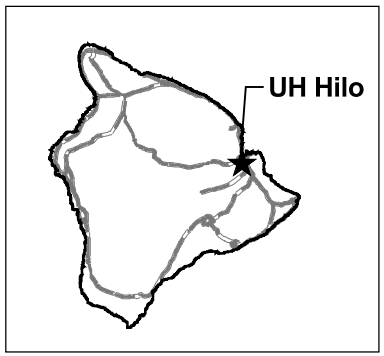
PBR HAWAII

Marissa Furfaro, Planner

Enclosure

cc: Mike Godfrey, UH-Hilo





LEGEND

Project Site Boundary

Source:
U.S. Geological Survey

Disclaimer:
This graphic has been prepared for general planning purposes only.

Figure 1
Regional Location Map

UH-Hilo Science Complex

HILO, ISLAND OF HAWAII

NORTH

LINEAL SCALE (FEET)

0 500 1,000 2,000

PBR HAWAII

OCTOBER 2006

TMK 2-2-24:17
Ms. Janet Young
1040 18th Avenue
Honolulu, Hawaii 96816

TMK 2-4-24:36
Mr. Ronald Silva
455 Mohouli St.
Hilo, Hawaii 96720

TMK 2-4-24:37
Ms. Eileen Shiraishi
471 Mohouli St.
Hilo, Hawaii 96720

TMK 2-4-24:50
Hideo Gushiken
1148 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:51
Ms. Barbara Legaspi
1154 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:52
Mr. Donald Yamada
1166 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:53
Mr. Wallace Hirae
1172 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:54
Ms. Hazel Thompson
1180 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:55
Mr. Robert Curry
4757 W Ave K-12
Lancaster, California 93536

TMK 2-4-24:56
Ms. Elsie Miyazono
1192 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:57
Mr. Walter Perreira
P.O. Box 4663
Hilo, Hawaii 96720

TMK 2-4-24:58
Mr. John Chin
1208 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:59
Mr. William Serrao
1212 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:60
Ms. Faith Miyashiro
1220 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:61
Chung-Shih Tang
1019 Apokula St.
Kailua, Hawaii 96734

TMK 2-4-24:62
Frances Lee
1211 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:63
Mr. Larry Shon
P.O. Box 1004
Hilo, Hawaii 96721

TMK 2-4-24:64
Mr. Donald Okahara
1199 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:65
Ms. Diane Saito
1193 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:66
Ms. Beatrice Isemoto
c/o Larry Isemoto
1187 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:67
Ms. Lorna Nagata
1711 Fillmore Dr.
Monterey Park, California 91755

TMK 2-4-24:68
Ms. Adeline Lee
1171 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:69
Ms. Carole Oda
1165 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:70
Ms. Lurline Apele
c/o Brendalyn Hankins
95-996 Wikao St. Apt. P-104
Mililani, Hawaii 96789

TMK 2-4-24:71
Mr. Christopher Chapman
1449 Ridgeway St.
Oceanside, California 92054

TMK 2-4-24:72
Mr. Stanley Randolph
P.O. Box 4759
Hilo, Hawaii 96720

TMK 2-4-24:73
Ms. Carol Miyashiro
523 W. Kawailani St.
Hilo, Hawaii 96720

TMK 2-4-24:74
Fukuyo Hata
347 Ianeke Place
Hilo, Hawaii 96720

TMK 2-4-24:75
Ms. Carol Lau
1293 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:76
Ms. Elizabeth Baldwin
300 Lahi Street
Hilo, Hawaii 96720

TMK 2-4-24:77
Mr. Robert Perreira
1273 Kumukoa Street
Hilo, Hawaii 96720

TMK 2-4-24:78
Mr. Charles Iseri
1265 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:79
Ms. Kay Tanaka
1257 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:80
Mr. Juro Murakami
1251 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:81
Mr. Grant Nishida
391 Ohukea St.
Hilo, Hawaii 96720

TMK 2-4-24:82
Ms. Edna Christenson
1235 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:83
Ms. Kay Ujimori
98-195 Puaalii St.
Aiea, Hawaii 96701

TMK 2-4-24:84
Ms. Lillian Goto
1226 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:85
Mr. Richard Ferreira
1232 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:86
Mr. James Higa
1238 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:87
Mr. Wayne Shishido
1244 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:88
Mr. Alan Doi
1250 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:89
Ms. Joan Shibuya
1256 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:90
Mr. Benjamin Hu
1268 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:91
Ms. Lei Ann Shinoda
1274 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:92
Toshio Yamashiro
1280 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:93
Mr. James Kelly
1286 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:94
Ms. Linda Koreyasu
455 Kahikini St.
Hilo, Hawaii 96720

TMK 2-4-24:95
Ms. Lilian Kuwahara
1300 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:96
Mr. Christopher Robinson
1308 Kumukoa St.
Hilo, Hawaii 96720

TMK 2-4-24:97
Mr. Laurence Test
c/o Justin Avery
1314 Kumukoa Street
Hilo, Hawaii 96720

TMK 2-4-56:01
ILWU Memorial Assn.
451 Atkinson Dr.
Honolulu, Hawaii 96814

TMK 2-4-56:03
Ms. Janice Shimizu
1184 Launa St.
Hilo, Hawaii 96720

TMK 2-4-56:04
Tetsuo Ogata
190 W. Lanikaula St.
Hilo, Hawaii 96720

TMK 2-4-56:05
Hachiro Kuroyama
210 W. Lanikaula
Hilo, Hawaii 96720

TMK 2-4-56:06
Lloyd Suyama
226 W. Lanikaula St.
Hilo, Hawaii 96720

TMK 2-4-56:15
Waiakea Settlement YMCA
P.O. Box 7067
Kamuela, Hawaii 96743

TMK 2-4-56:18
Church of the Holy Cross
440 W. Lanikaula St.
Hilo, Hawaii 96720

TMK 2-4-56:27
Hilo Baptist Church
600 W. Lanikaula St.
Hilo, Hawaii 96720

TMK 2-4-57:07
Mr. Melvin Inaba
123 W. Lanikaula Street
Hilo, Hawaii 96720

TMK 2-4-57:19
Mr. Paul Yoshioka
140 Aipuni St.
Hilo, Hawaii 96720

TMK 2-4-57:21
Mr. Gregory Nielsen
P.O. Box 77
Kurtistown, Hawaii 96760

TMK 2-4-57:24
Terrence Yamamoto
2527 Rainbow Dr.
Honolulu, Hawaii 96822

TMK 2-4-57:27
The Salvation Army
219 Ponahawai Street
Hilo, Hawaii 96720

TMK 2-4-57:27
GP Hoaloha Ltd. Partnership
1911 65th Ave.
Tacoma, Washington 98466

APPENDIX D

NOVEMBER 2006

PRE-ASSESSMENT

CONSULTATION COMMENT

LETTERS AND RESPONSES

Marissa Furfaro

From: Marissa Furfaro
Sent: Wednesday, January 31, 2007 11:23 AM
To: Marissa Furfaro
Subject: Response to UH Hilo Parking and Science Construction

From: Thomas Olcott [mailto:revtomolcott@hotmail.com]
Sent: Monday, November 13, 2006 12:24 PM
To: Marissa Furfaro
Subject: Response to UH Hilo Parking and Science Construction

November 13, 2006
PBR Hawaii101 Aupuni Street, Suite 310 mfurfaro@pbrhawaii.com
Hilo, Hawai'i 96720

Aloha PBR Hawaii:

Our Trustees reviewed your letter regarding the proposed UH Hilo Science building and parking lot to be constructed off of Lanikaula Street requesting our comments.

Our primary response is that we look forward to the positive changes outlined in your letter that the University will be making and that this will offer relief to congested parking on the side of the road along Lanikaula Street.

Mahalo,

Thomas W. Olcott, Senior Pastor
The Church of the Holy Cross, UCC
440 West Lanikaula Street
Hilo, HI 96720
(808) 935-1283

PBR HAWAII
& ASSOCIATES, INC.

HONOLULU OFFICE
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawai'i 96813-3381
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

HILO OFFICE
101 Aupuni Street
Hilo Lagoon Center, Suite 310
Hilo, Hawai'i 96720-1262
Tel: (808) 961-3333
Fax: (808) 961-1930

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

February 21, 2007

Mr. Thomas W. Olcott, Senior Pastor
The Church of the Holy Cross, UCC
440 West Lanikaula St.
Hilo, HI 96720

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Mr. Olcott:

Thank you for your e-mail dated November 13, 2006, received upon request for pre-assessment comments. We appreciate your interest and participation in the pre-consultation process of preparing the revised Draft EA. We have revised the earlier published Draft EA to incorporate a proposed Lanikaula offsite parking lot and also to address your comments, as well as others. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to the address noted above for your review and comments.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

O:\Job22\2257.05 UHH Science Tech Bldg-EA addl\Responses to Draft EA Comment Letters\BL-09 Church of the Holy Cross.doc

Marissa Furfaro

From: Marissa Furfaro
Sent: Wednesday, January 31, 2007 11:03 AM
To: Marissa Furfaro
Subject: UHH pre assessment consultation tmk: 3 2-4-01:07 and 167

From: Justin Avery [mailto:justinavery@gmail.com]
Sent: Thursday, November 02, 2006 4:02 PM
To: Marissa Furfaro
Subject: UHH pre assessment consultation tmk: 3 2-4-01:07 and 167

Aloha Marissa,

I have a list here of all of my immediate concerns regarding the UHH project next to my home.

Thank you,
Justin Avery

1314 Kumukoa St.
Hilo, HI 96720
990 1421

November 1, 2006

Attn: PBR Hawai'i
101 Aupuni St.
Hilo Lagoon Center, Suite 310

Mike Godfrey
University of Hawai'I at Hilo
Facilities Planning and Construction
200 W. Kawili St.
Hilo, Hawai'I 96720-4091

Subject: University of Hawai'I at Hilo Science Complex
Pre Assessment Consultation
TMKs: (3) 2-4-01:07 and 167 (portions of)

Aloha DPR,

I would like to bring forward a few concerns and requests I have regarding the University of Hawai'i at Hilo's proposed parking lot next to my home at 1314 Kumukoa Street. My main concerns have to do with development of the project, security, preservation, sound, and lighting.

I would appreciate if the University would conduct the project with sensitivity to the effect the project will have on my home. Below are a few of my concerns:

1) Development of project: My home is built on plot of land that is raised three feet from the flat plane next to the lot. I am concerned about the effect large equipment will have on the integrity of the home. Please study the topography of my home to ensure the force from the development equipment doesn't disrupt the topography of the land under my house.

2) Security: Maintaining an adequate level of security is important. Please ensure the parking lot to be regularly checked by security. I would also appreciate if the University could place a wall between the parking lot and my home.

3) Preservation: There is a forty year old Mango tree close to my house. There are also many native trees like Ohia and native ferns like Hapu'u close to the house. Please protect and preserve the native trees.

4) Lighting: I am concerned about the lighting of the parking lot casting on my house for privacy concerns and in regards to termites. I am also concerned about the effect the lights in the parking lot will have on the night sky. Please have the lights placed as far away from my home as possible, and please use lights that protect the night sky.

5) Sound: The sound of hundreds of college students driving, parking, slamming doors, setting alarms, talking and bustling around can be noisy. Currently, I can hear the students from the dorms across the stream from the project especially late at night. I would like to request that the University ensure the parking lot to be operational during reasonable hours. I would also like to request that an adequate vegetation sound buffer be placed between my home and the parking lot.

I would like to request that I be on the review board for the preliminary Environmental Assessment.

Thank you,
Justin Avery

Justin Avery
1314 Kumukoa St.
Hilo, HI 96720
808 990 1421
Justinavery@gmail.com

PBR HAWAII
& ASSOCIATES, INC.

February 21, 2007

Mr. Justin Avery
1314 Kumukoa Street
Hilo, HI 96720

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Mr. Avery,

Thank you for your e-mail dated November 2, 2006, received upon request for pre-assessment comments. We appreciate your interest and participation in the pre-consultation process of preparing the revised Draft EA. We have revised the earlier published Draft EA to incorporate a proposed Lanikaula offsite parking lot and also to address your comments, as well as others. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to the address noted above for your review and comments.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

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HONOLULU OFFICE
1001 Bishop Street
ASB Tower, Suite 650
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E-mail: sysadmin@pbrhawaii.com

HILO OFFICE
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Hilo Lagoon Center, Suite 310
Hilo, Hawaii 96720-1262
Tel: (808) 961-3333
Fax: (808) 961-3959

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawaii 96793-1271
Tel: (808) 242-2878

Marissa Furfaro

From: Marissa Furfaro
Sent: Wednesday, January 31, 2007 11:10 AM
To: Marissa Furfaro
Subject: UHH Science Tech Building

-----Original Message-----

From: Chris Robinson [mailto:cjrob@mail.com]
Sent: Monday, November 06, 2006 6:26 AM
To: Marissa Furfaro
Subject: Re: UHH Science Tech Building

Dear Marissa,

Her is my note with my PS included. My apologies for the misspelling. -C.

Marissa Furfaro
PBR HAWAII
Hilo. Hi 96720.

10-30-06

Dear Marissa,

Thank you for informing me of the University's upcoming construction plans. I am pleased that the UH community is growing.

I hope that your plan calls for plantings in the 24' setback that would be in keeping with the neighborhood and which would provide visual and light protection for my home and others adjacent to the parking lot. I also hope that the lot will be secured at night and be equipped with discrete low impact lighting that is residential rather than industrial in design and size.

Is there a planned start and finish schedule for the first stage of the project?

Yours sincerely,

Chris Robinson
1308 Kumukoa St
Hilo. Hi 96720

PBR HAWAII
& ASSOCIATES, INC.

February 21, 2007

Mr. Chris Robinson
1308 Kumukoa Street
Hilo, HI 96720

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX
TMKS: (3) 2-4-57:25 (POR.) AND 26 (POR.)

Dear Mr. Robinson,

Thank you for your e-mail dated November 6, 2006, received upon request for pre-assessment comments. We appreciate your interest and participation in the pre-consultation process of preparing the revised Draft EA. We have revised the earlier published Draft EA to incorporate a proposed Lanikaula offsite parking lot and also to address your comments, as well as others. We plan to submit it to OEQC for publication in The Environmental Notice on March 8, 2007. A copy of the revised Draft EA will be sent to the address noted above for your review and comments.

Should you have any questions regarding this project, please do not hesitate to contact me at 961.3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs

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HONOLULU OFFICE
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ASB Tower, Suite 650
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Tel: (808) 521-5631
Fax: (808) 523-1167
E-mail: sysadmin@pbrhawaii.com

HILO OFFICE
101 Aupuni Street
Hilo Lagoon Center, Suite 310
Hilo, Hawai'i 96720-4262
Tel: (808) 961-3333
Fax: (808) 961-8993

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 1
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

APPENDIX E

FEBRUARY 2007 REVISED DRAFT EA PUBLIC REVIEW COMMENT LETTERS AND RESPONSES

The Revised Draft EA was published in the March 8, 2007 issue of the OEQC The Environmental Notice and sent to the parties listed in the following table. The 30-day public comment period ended on April 9, 2007. Agencies, organizations, or individual that submitted comments on the Revised Draft EA are listed in bold. Comments and response letters have been reproduced and follow the table below.

Revised Draft EA Comment Letters

	AGENCY	REVISED DRAFT EA MAIL DATE	DATE OF COMMENTS
State			
1	Department of Business, Economic Development and Tourism	02-26-2007	--
2	Department of Business, Economic Development and Tourism – Office of Planning	02-26-2007	--
3	**Department of Education**	02-26-2007	04-09-2007
4	**Department of Health – Environmental Planning Office**	02-26-2007	03-30-2007
5	**Department of Health – Office of Environmental Quality Control**	02-26-2007	03-19-2007
6	**Department of Land and Natural Resources**	02-26-2007	03-06-2007
7	Department of Land and Natural Resources – Historic Preservation Division	02-26-2007	--
8	Office of Hawaiian Affairs	02-26-2007	--
9	Hilo Public Library	02-26-2007	--
10	University of Hawai'i at Hilo – Edwin H. Mookini Library	02-26-2007	--
County of Hawai'i			
11	Department of Environmental Management	02-26-2007	--
12	Department of Parks and Recreation	02-26-2007	--
13	Department of Public Works	02-26-2007	--
14	Department of Research and Development	02-26-2007	--
15	**Department of Water Supply**	02-26-2007	04-09-2007
16	**Fire Department**	02-26-2007	04-04-2007
17	**Planning Department**	02-26-2007	04-04-2007, 04-12-2007
18	**Police Department**	02-26-2007	04-02-2007
Other Organizations/Individuals			
19	Church of the Holy Cross	02-26-2007	--
20	Hawaii Electric Light Company	02-26-2007	--
21	Hawaii Tribune Herald	02-26-2007	--
22	Honolulu Advertiser	02-26-2007	--
23	Honolulu Star Bulletin	02-26-2007	--
24	Mr. Chris Robinson	02-26-2007	--
25	Mr. Justin Avery	02-26-2007	--
26	West Hawaii Today	02-26-2007	--

LINDA LINGLE
GOVERNOR

PATRICIA HAMAMOTO
SUPERINTENDENT

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

OFFICE OF THE SUPERINTENDENT

April 9, 2007

Mr. Vincent Shigekuni
PBR HAWAII- Hilo Office
101 Aupuni Street, Suite 310
Hilo, Hawaii 96720

Dear Mr. Shigekuni:

Subject: University of Hawaii at Hilo Science Complex and Parking Lot
TMK: 2-4-057: por. 25 and por. 26

The Department of Education has reviewed the Draft Environmental Assessment for the science complex and off-site parking lot for the University of Hawaii at Hilo. We have no comment on the application but appreciate the opportunity to review the plans.

If you have any questions, please call Heidi Meeker of the Facilities Development Branch at (808) 733-4862

Very truly yours,

Patricia Hamamoto
Superintendent

PH:jmb

c: Randolph Moore, Acting Assistant Superintendent, OBS
Duane Kashiwai, Public Works Administrator, FDB
Valerie Takata, CAS, Hilo/Laupahoehoe/Waiakea Complex Areas
Genevieve Salmonson, OEQC
Lo-li Chih, UH-Hilo

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

PBR HAWAII
& ASSOCIATES, INC.

May 10, 2007

Ms. Patricia Hamamoto, Superintendent
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, Hawai'i 96804
Attn: Ms. Heidi Meeker

SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)

Dear Ms. Hamamoto,

Thank you for your letter dated April 9, 2007. We acknowledge that the Department of Education has no comment to offer at this time.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

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HONOLULU OFFICE
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

HILO OFFICE
101 Aupuni Street
Hilo Lagoon Center, Suite 310
Hilo, Hawai'i 96720-4262
Tel: (808) 961-3333
Fax: (808) 961-4959

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 1
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

RECEIVED APR 0 4 2007

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-07-056

March 30, 2007

Mr. Vincent Shigekuni
PBR HAWAII - Hilo Office
101 Aupuni Street, Suite 310
Hilo, Hawaii 96720

Dear Mr. Shigekuni:

SUBJECT: Revised Draft Environmental Assessment for University of Hawaii at Hilo Science Complex and Lanikaula Off-site Parking Lot
TMK: (3) 2-4-057: 025 (portion) and 026 (portion)

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no comments at this time. We strongly recommend that you review all of the Standard Comments on our website: www.state.hi.us/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

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

Sincerely,

KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
EH-Hawaii
Mr. Lo-li Chih, University of Hawaii at Hilo

PBR HAWAII
& ASSOCIATES, INC.

May 10, 2007

Mr. Kelvin H. Sunada, Manager
Environmental Planning Office
State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, Hawai'i 96801-3378
Attn: Mr. Jiacai Liu

SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)

Dear Mr. Sunada,

Thank you for your letter dated March 30, 2007 (your reference number: EPO-07-056). We acknowledge that the Department of Health has no comments to offer at this time. As recommended, the Standard Comments on the Department of Health website (http://www.state.hi.us/health/environmental/env-planning/landuse/landuse.html) have been reviewed and will be adhered to as applicable.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

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Fax: (808) 961-1989

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

LINDA LINGLE
GOVERNOR OF HAWAI'I

GENEVIEVE SALMONSON
DIRECTOR

235 S BERETANIA ST. SUITE 702
HONOLULU, HAWAI'I 96813

STATE OF HAWAI'I
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Telephone (808) 586-4185
Facsimile (808) 586-4186
Email: oeqc@doh.hawaii.gov

March 19, 2007

Bill Chen
UHH Administrative Affairs
200 West Kawili Street
Hilo. HI 96720

Attn: Lo-li Chih

Dear Mr. Chen:

Subject: Revised Draft environmental assessment (EA), **UHH Science Complex**

We have the following comments:

Landscaping: Your landscaping plan may include invasive plant species. Before finalizing your plan consult the Division of Forestry & Wildlife of DLNR at 587-0166 or go to the Hawaii Ecosystems at Risk (HEAR) website at www.hear.org to eliminate those species that may pose a threat to the environment.

Paving: Hawaii Revised Statutes 103D-407 requires the use of recycled glass in paving materials whenever possible. In the final EA indicate if you will follow this requirement.

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

c: Vincent Shigekuni

PBR HAWAII
& ASSOCIATES, INC.

HONOLULU OFFICE
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawai'i 96813-3384
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

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Hilo, Hawai'i 96720-4262
Tel: (808) 961-3333
Fax: (808) 961-4959

WAILUKU OFFICE
1787 Wili Pa Loop, Suite 4
Wailuku, Hawai'i 96793-1271
Tel: (808) 242-2878

May 10, 2007

Ms. Genevieve Salmonson, Director
State of Hawai'i
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawai'i 96813

SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)

Dear Ms. Salmonson,

Thank you for your letter dated March 19, 2007 commenting on the subject Revised Draft Environmental Assessment (EA). We offer the following responses in the respective order of your comments:

1. Landscaping: As suggested, we tried to contact the State Division of Forestry and Wildlife (DOFAW), but our calls have not been returned. We also visited the HEAR website and acknowledge many of the plants we have specified may be considered as "invasive." UH Hilo has had the landscape plan reviewed by its resident professor of botany, and the landscape plan will be modified to reduce the amount of invasive species.

2. Paving: The Final EA will state that construction specifications will include the use of recycled glass in paving materials, where feasible.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 6, 2007

PBR Hawaii – Hilo Office
101 Aupuni Street Suite 310
Hilo, Hawaii 96720

Attention: Vincent Shigekuni

Gentlemen:

Subject: Revised Draft Environmental Assessment for University of Hawaii at Hilo Science Complex and Lanikaula Off-site Parking Lot, Hilo, Hawaii, Tax Map Key: (3) 2-4-57:portion of 25 and 26

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources has no comment to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

PBR HAWAII
& ASSOCIATES, INC.

May 10, 2007

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

**SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND
LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I,
TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)**

Dear Mr. Tsuji,

Thank you for your letter dated March 6, 2007. We acknowledge that the Department of Land and Natural Resources has no comment to offer on the subject matter.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

O:\Job22\2257.03 UHH Science Tech Bldg-EA\Revised Draft EA\Public Review Comment Letters & Responses\BL-01 DLNR Response.doc

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DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

April 9, 2007

Mr. Vincent Shigekuni
PBR Hawaii – Hilo Office
101 Aupuni Street, Suite 310
Hilo, HI 96720

**REVISED DRAFT ENVIRONMENTAL ASSESSMENT
UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND OFFSITE PARKING LOT
TAX MAP KEY 2-4-001:007 (PORTION), 2-4-057:025 AND 026 (PORTIONS)**

We have reviewed the subject Revised Draft Environmental Assessment and have the following comments.

Water can be made available from an existing 8-inch waterline with Lanikaula Street, fronting the subject parcels. Prior to issuing a water commitment for the proposed project, the Department would request estimated maximum daily water usage calculations prepared by a professional engineer licensed in the State of Hawai'i for review. After review of the calculations, the Department will determine the water commitment amount, facilities charges due, and other conditions for final approval.

Please be informed that the existing 8-inch waterline within Lanikaula Street is inadequate to provide the required 2,000 gallons per minute (GPM) fire-flow required for school facilities. The applicant will be required to submit plans showing the water system improvements necessary to provide the required fire-flow.

Please also be informed that any meter(s) serving the proposed project will require the installation of a reduced principle type backflow prevention assembly within five feet of the meter on private property, if one does not already exist. The Department must inspect and approve the installation prior to commencement of water service.

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

Sincerely yours,

Milton D. Pavao, P.E.
Manager

FM:dfg

copy – State of Hawai'i, Office of Environmental Quality Control
University of Hawai'i at Hilo

... Water brings progress...

PBR HAWAII
& ASSOCIATES, INC.

May 10, 2007

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Mr. Milton D. Pavao, P.E., Manager
Department of Water Supply
County of Hawai'i
345 Kekūanaō'a Street, Suite 20
Hilo, Hawai'i 96720
Attn: Mr. Finn McCall

SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)

Dear Mr. Pavao:

Thank you for your letter dated April 9, 2007. We offer the following responses in the respective order of your comments:

1. The Environmental Assessment will be revised to read that UH Hilo will not be connecting to the existing 8-inch waterline within Lanikaula Street, but rather, the 12-inch waterline along Nowelo Street and the Campus Service Road. This 12-inch line will be able to provide fire protection service to the proposed Sciences and Technology Buildings.

2. A calculated maximum daily water usage for the project will be submitted to DWS for its review prior to the issuance of a water commitment for the proposed project. Water usage calculations will be prepared and submitted by a professional engineer licensed within the State of Hawai'i.

3. We acknowledge that any meter(s) serving the proposed project will require the installation of a reduced principle type backflow prevention assembly within five feet of the meter on private property, if one does not already exist. As such, it is further acknowledged that DWS must inspect and approve the installation prior to the commencement of water service.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

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Harry Kim
Mayor

Darryl J. Oliveira
Fire Chief

Glen P.I. Honda
Deputy Fire Chief

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

April 4, 2007

PBR Hawaii –Hilo Office
101 Aupuni Street, Suite 310
Hilo, Hawaii 96720

SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT
PROJECT: UNIVERSITY OF HAWAII AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT
TAX MAP KEY: (3) 2-4-57:25 (POR.) AND 26 (POR.)

In regards to the above-mentioned Revised 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.

DARRYL OLIVEIRA
Fire Chief

PBE:lpc

CC: Office of Environmental Quality Control
University of Hawaii at Hilo

PBR HAWAII
& ASSOCIATES, INC.

May 10, 2007

Mr. Darryl Oliveira, Fire Chief
County of Hawai'i
Hawai'i Fire Department
25 Aupuni Street, Suite 103
Hilo, Hawai'i 96720

SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)

Dear Mr. Oliveira:

Thank you for your letter dated April 4, 2007. We offer the following responses in the respective order of your comments:

1. It is not believed that a fire apparatus access road is required because as stated in the Revised Draft EA: "... a new fire hydrant has been installed along Lanikaula Street (within 60 feet of the proposed building)..."

2. Water infrastructure will be designed and installed in accordance with the Uniform Fire Code, Section 10.301(c), as amended.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

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Harry Kim
Mayor

County of Hawaii
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Christopher J. Yuen
Director

Brad Kurokawa, ASLA
LEED® AP
Deputy Director

April 4, 2007

Mr. Vince Shigekuni
PRB Hawaii – Hilo Office
101 Aupuni Street, Suite 310
Hilo, HI 96720

Dear Mr. Shigekuni:

Revised Draft Environmental Assessment for the University of Hawaii at Hilo
Subject: Science Complex
Tax Map Key: 2-4-1:Portion of 167
Lanikaula Off-site Parking Lot
Tax Map Key: 2-4-1:Portion of 7

In response to the above referenced document submitted for our review, we have the following to offer:

1. **Tax Map Key Number:**

   The tax map key number for the proposed Science Complex should be corrected to TMK: 2-4-1:Portion of 167. By Consolidation No. 363 approved on March 13, 1979, TMK: 2-4-57:25 and 26 and TMK: 2-4-1:por. 07, 162 and 163 were consolidated into a 115.164 acre lot. The tax map key number for the proposed Science Complex was redesignated from TMK: 2-4-57: por. of 25 and por. of 26 to TMK: 2-4-1:167.

2. **Land Use Conformance:**

   We concur with the State Land Use designation, County zoning and SMA determination for both parcels. However, although we agree that the General Plan Land Use Pattern Allocation Guide (LUPAG) Map's determination for the

Science Complex is University Use; the off-site parking lot also appears to be entirely University Use.

1. **Lanikaula Off-Site Parking Lot:**

   a. There should be a continuous pedestrian sidewalk connecting the proposed parking lot to the campus.
   a. The existing and proposed bicycle facilities in the project vicinity should be discussed in greater detail. A map of the existing and proposed bicycle lane(s) should be provided.
   b. If the dense hedge of variegated Hau (between 6 and 8 feet in height) is found to be inadequate, a minimum 6-foot high privacy wall or alternate landscaping buffer should be installed along the subject property's common boundary with the adjoining single- family residential parcel along Kumukoa Street for the purpose of mitigating potential adverse noise and visual impacts. It should be provided to the extent that a continuous, unbroken, heavy planting screen, no less than 6 feet in height, or the minimum 6-foot high privacy wall be established prior to the issuance of a certificate of occupancy for the parking lot.
   c. The University Heights Residential Subdivision, 2nd Increment lot owners' concern about the effect of the parking lot lighting on their homes should be addressed; in particular, the effect on the adjacent and nearby Kumukoa Street residential lot owners.

4. **Science Complex:**

   a. It states that the water system will be in compliance with the Department of Water Supply standards and the Subdivision Control Code requirements.
   b. The height limit of all structures is not consistent throughout the document. It states that the Science and Technology Building will be approximately 67'4" and require a height variance. It is also states that all facilities will remain within the 35-foot height restriction.
   c. Approvals and Permits Required:
      1. Subdivision approval is required if the parking lot is to be a separate, legal lot of record.
      2. A Variance from the height limit will be required if any structure exceeds 35 feet in height.

5. **Alternatives to the Proposed Action:**

   Site 2, UHH Expansion area should be reconsidered for the Science Complex. It is closer to the science-related activities in the University Park than the proposed site. The related parking would be accommodated on the same site. Demolition of the existing facilities on Site 1 will disrupt class scheduling as well as remove existing parking. Finally, the existing structures on Site 1 could be retrofitted to accommodate expanding or new programs.

We appreciate the opportunity to review the revised draft environmental assessment.

If you have questions, please feel free to contact Esther Imamura of our Department at 961-8288, extension 257.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

ETI:pak
P:\wpwin60\ETI\EAdraft\Pre-consul\Shigekuni PBR UH Science Complex & Parking Lot.rtf

xc: Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu HI 96813

PBR HAWAII
& ASSOCIATES, INC.

May 10, 2007

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Mr. Christopher J. Yuen, Planning Director
County of Hawai'i
Planning Department
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720-3043
Attn: Ms. Esther Imamura

SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)

Dear Mr. Yuen:

Thank you for your letter dated April 4, 2007. We offer the following responses in the respective order of your comments:

1. Thank you for providing information confirming that Consolidation No. 363 approved on March 13, 1979, Tax Map Key (TMK):2-4-57:25 and 26 and TMK:2-4-1:por. 07, 162 and 163 were consolidated into a 115.164 acre lot. As such, the TMK number for the proposed project will be corrected to TMK:2-4-1:167 (por).

2. We concur with the Planning Department's interpretation of the Land Use Pattern Allocation Guide (LUPAG) Map for the Science Complex and Lanikaula Off-Site Parking Lot as University Use.

3. We offer the following responses to your comments regarding the Lanikaula Off-Site Parking Lot:

   a. Currently, there is a wide shoulder along Lanikaula Street that connects the proposed parking lot to the campus. UH Hilo is willing to construct a sidewalk connecting the Lanikaula Off-Site Parking Lot to the campus when funds become available. The sidewalk will be designed to be as accessible as possible, given the limitations of the existing grade of West Lanikaula Street and the constriction of the existing bridge and power poles.

   b. UH-Hilo is preparing a transportation master plan for the UH-Hilo Student Life and Events Complex, to achieve LEED gold standard, and as such, preferential carpool parking and bicycle facilities for the UH-Hilo campus will be identified in this transportation master plan. As suggested, a map of the existing and proposed bicycle lane(s) is included as Figure 16 in the Final EA.

c. As recommended, should the dense hedge of variegated Hau be found to be inadequate, a minimum 6-foot high privacy wall or alternate landscaping buffer will be installed when funds become available.

d. We acknowledge your concerns regarding the effect of the parking lot lighting on surrounding residences. UH Hilo feels that safety for students, faculty, and staff within the parking lot is also of concern, and therefore, landscaping will be installed along the perimeter of the parking lot which should reduce the amount of light spilling into adjacent residences.

4. We offer the following responses to your comments regarding the UH-Hilo Science Complex:

a. The water system will be in compliance with the Department of Water Supply standards and the Subdivision Control Code requirements.

b. We apologize about the inconsistencies in the Revised Draft EA regarding the height limit of the proposed structures. The Science and Technology Building will be approximately 67'4", and as such, a height variance will be required. All other proposed structures will remain within the 35-foot height limit.

c. UH-Hilo does not expect to subdivide the project parcel, and as such, subdivision approval will not be required for the project. In addition, we acknowledge that a height variance will be required for any structure exceeding the 35-foot height limit.

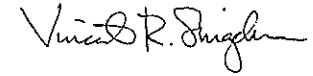
5. We acknowledge your concern regarding alternative sites to the proposed project. Although Site 2 in the *UH-Hilo Science Complex: Site Selection Analysis (November 2004)* is closer to the science-related activities in the University Park than the proposed site, it would not be able to accommodate all of the parking required for the facilities (386 stalls). Regrettably, while the demolition of the existing facilities will temporarily disrupt class scheduling as well as remove existing parking, the new facilities will significantly increase the floor area of the proposed project site over the existing conditions, enabling more efficient use of the site. In addition, the proposed project is consistent with the LRDP, which planned for the removal of the Beaumont Agricultural Research Center, College Hall C, and Portable Buildings 13 and 14.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Mr. Christopher J. Yuen
SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)
May 10, 2007

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,



Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

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Harry Kim
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Christopher J. Yuen
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To PBR Vince Shigekuni	From Esther Imamura
Co./Dept.	Co. HI County Planning
Phone #	Phone # 961-8288 ext 257
Fax # 961-4989	Fax #

April 12, 2007

Mr. Vince Shigekuni
PBR Hawaii – Hilo Office
101 Aupuni Street, Suite 310
Hilo, HI 96720

Dear Mr. Shigekuni:

Revised Draft Environmental Assessment for the University of Hawaii at Hilo
Subject: Science Complex
Tax Map Key: 2-4-1:Portion of 167
Lanikaula Off-site Parking Lot
Tax Map Key: 2-4-1:Portion of 7

Thank you for allowing us to submit further comments on the proposed project.

We would like to include the following:

1. **Lanikaula Off-Site Parking Lot:**

   a. Pedestrian connection not only from the campus to the off-site parking but also in the design of the parking lot, i.e. sidewalk connections within the parking lot and to the sidewalk along Lanikaula/Kumukoa. The walkways should have pedestrian lighting for security and should be pedestrian scaled with cut off to prevent light pollution.
   b. Consider reducing impervious paving at parking lot by using porous paving. With the high perc soils, this makes sense from a runoff volume and water quality perspective instead of concentrating into dry wells which end up in the adjacent stream.

2. **Science Complex:**

   a. More bicycle parking for the proposed facilities. There were provisions for only 7-9 bike stalls. All new facilities on UHH should be generously exceeding code requirements. We should also consider recommending UHH to consider bicycling/carpool incentives as part of a transportation management plan to reduce commuting.
   b. Construction and debris recycling as part of the demolition of existing buildings.

We appreciate the opportunity to supplement our earlier comments.

If you have questions, please feel free to contact Esther Imamura of our Department at 961-8288, extension 257.

Sincerely,

CHRISTOPHER J. YUEN
Planning Director

BK/ETI:eti

P:\wpwin60\ETI\EAdraftPre-consul\Shigekuni PBR UH Science Complex & Parking Lot 2.rtf

xc: Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu HI 96813

PBR HAWAII
& ASSOCIATES, INC.

May 10, 2007

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Mr. Christopher J. Yuen, Planning Director
County of Hawai'i
Planning Department
101 Pauahi Street, Suite 3
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Attn: Ms. Esther Imamura

SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMK: (3) 2-4-1: 07 (POR.) AND 167 (POR.)

Dear Mr. Yuen:

Thank you for your letter dated April 12, 2007. We offer the following responses in the respective order of your comments:

1. We offer the following responses to your comments regarding the Lanikaula Off-Site Parking Lot:

   a. Currently, a wide shoulder of 9 feet along West Lanikaula Street, except near the bridge where the shoulder is reduced to 5 feet, connects the proposed parking lot to the main campus. The bridge has a sidewalk with non-ADA compliant ramps at each end. UH-Hilo is willing to construct a sidewalk connecting the Lanikaula Off-Site Parking Lot to the campus when funds become available. The sidewalk will be designed to be as accessible as possible, given the limitations of the existing grade of West Lanikaula Street and the constriction of the existing bridge and power poles.

   b. Although no significant impacts on existing drainage conditions are anticipated, UH-Hilo will consider the installation of porous paving surfaces for the Lanikaula Off-Site Parking Lot to assist in the management of storm water runoff while improving infiltration of rain water into the water table.

2. We offer the following responses to your comments regarding the UH-Hilo Science Complex:

   a. UH-Hilo is preparing a transportation master plan for the UH-Hilo Student Life and Events Complex, to achieve LEED NC gold standard, and as such, preferential carpool parking and bicycle facilities for the UH-Hilo campus will be identified in this transportation master plan.

   b. A construction waste recycling plan will be prepared prior to the start of construction, and as such, construction and debris recycling will be part of the demolition of the existing buildings.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

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Harry Kim
Mayor

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Lawrence K. Mahuna
Police Chief

Harry S. Kubojiri
Deputy Police Chief

County of Hawaii
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April 2, 2007

Mr. Vincent Shigekuni
PBR – Hilo Office
101 Aupuni St., Suite 310
Hilo, Hawaii, 96720

Dear Mr. Shigekuni:

Re: University of Hawaii at Hilo Science Complex

Staff, upon reviewing the provided documents and visiting the proposed site, does not anticipate any significant impact to traffic and/or public safety concerns.

Thank you for allowing us the opportunity to comment.

Sincerely,

SAMUEL K. THOMAS, JR.
ACTING ASSISTANT CHIEF
AREA I OPERATIONS

KV:lli

"Hawai'i County is an Equal Opportunity Provider and Employer"

PBR HAWAII
& ASSOCIATES, INC.

May 10, 2007

Mr. Samuel K. Thomas, Jr., Acting Assistant Chief
Area I Operations
County of Hawai'i
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349 Kapiolani Street
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SUBJECT: REVISED DRAFT ENVIRONMENTAL ASSESSMENT UNIVERSITY OF HAWAI'I AT HILO SCIENCE COMPLEX AND LANIKAULA OFF-SITE PARKING LOT, HILO, HAWAI'I, TMKS: (3) 2-4-1:07 (POR.) AND 167 (POR.)

Dear Mr. Thomas,

Thank you for your letter dated April 2, 2007. We acknowledge that the Police Department does not anticipate any significant impact to traffic and/or public safety concerns.

Thank you again for your participation in the Environmental Assessment process for this project. Your letter will be included in the Final EA.

Should you have any questions regarding this project, please do not hesitate to contact me at 961-3333.

Sincerely,

Vincent R. Shigekuni
Vice President

cc: Mr. Lo-Li Chih, UHH Office of Facilities Planning
Mr. Bill Chen, UHH Administrative Affairs
Mr. Mike Godfrey, Godfrey Engineering, LLC
Mr. Dean Kawakami, KYA Design Group

O:\Job22\2257.03 UHH Science Tech Bldg-EA\Revised Draft EA\Public Review Comment Letters & Responses\BL-04 Police Response.doc

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APPENDIX F

ARCHAEOLOGICAL ASSESSMENT, LANIKAULA OFF-SITE PARKING LOT

Report 508-032607

ARCHAEOLOGICAL ASSESSMENT

LANIKAULA OFFSITE PARKING LOT

LAND OF WAIAKEA, SOUTH HILO DISTRICT

ISLAND OF HAWAI'I

(TMK: [3] 2-4-01:POR. 7)

By:

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April 2007

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INTRODUCTION

At the request of Kajioka Yamachi Architects, Inc., Haun & Associates conducted an archaeological survey of the planned Lanikaula Offsite Parking Lot, a 1.39-acre parcel located in the Land of Waiakea, South Hilo District, Island of Hawaii (TMK: [3] 2-4-01: Por.7; *Figures 1* and *2*). The objective of the survey was to satisfy historic preservation regulatory review requirements of the Department of Land and Natural Resources-Historic Preservation Division (DLNR-SHPD), as contained within Hawaii Administrative Rules, Title 13, DLNR, Subtitle 13, State Historic Preservation Rules (2003) and requirements of a letter dated January 18, 2007 from SHPD (Log No: 2007.0043; Doc No: 0701MK19).

No archaeological sites or features were identified during the survey, therefore the project is documented as an archaeological assessment pursuant to Chapter 13-284-5(5A). As required, this report contains a description of the project area, field methods, background and findings.

Project Area Description

The project area is comprised of a rectangular-shaped 1.39-acre parcel situated at 151 ft to 183 ft elevation. The parcel is bordered by Lanikaula Street to the north, by Waiakea Stream to the east, by a small seasonal drainage to the south and by the University Heights Subdivision and undeveloped land to the west. The vegetation within the parcel is dominated by strawberry guava (*Psidium cattleianum* Sabine), with scattered pandanus (*Pandanus odoratissimus* L. f.), *ilima* (*Sida fallax*), ohia (*Metrodsideros collina* [Forst.] Gray), *ti* (*Cordyline fruticosa* [L.] A. Chev.) and grasses, ferns and vines present.

Large portions of the project area have been impacted by modern bulldozer activity. This disturbance is evidenced by a series of bulldozer swaths that average 8.0 m in width (*Figures 3, 4* and *5*). Two of the swaths extend through the project area in a roughly east-west direction, with a third extending diagonally through the parcel. Young strawberry guava and grasses and ferns are growing within the swaths, suggesting that they were recently created.

The terrain within the project area slopes gently to moderately to the east and northeast. The soil within the project area is comprised of Keaukaha extremely rocky muck on 6-20% slopes (Sato et al. 1973: Sheet Number 74). According to Sato et al., this soil occurs near the city of Hilo and is comprised of a thin surface layer of very dark brown muck over pahoehoe lava bedrock (1973:57). Bedrock outcrops occupy 25% of the surface within this soil area. This soil evidences a rapid permeability, a medium runoff and a slight erosional hazard. Sato et al. (1973:27) indicates that much of this soil type is in native forest with some areas having been cleared for pasture and sugarcane. Wolfe and Morris (2001) indicate that the lava flows within the project area originated from Mauna Loa Volcano deposited 750 to 1,500 years ago. The rainfall in the vicinity of the project area ranges from 150 to 155 inches per year (Juvik and Juvik 1998:57).

Field Methods

The field work portion of the project was conducted on March 16, 2007 under the direction of Alan Haun, Ph.D. The field work portion of the project required 1 labor day to complete. The project area was subjected to 100% surface examination with the surveyors spaced at 10.0 m intervals. The transected were oriented in a north-northeast by south-southwest direction, perpendicular to Lanikaulua Street. No archaeological sites or features were identified.

Background Research

The project area is situated in the *ahupua'a* of Waiakea in South Hilo District. The *ahupua'a* is one of the largest in the district covering over 95,000 acres. The *ahupua'a* extends along the coast from the west side of Hilo Bay to the Puna District boundary and inland to approximately 6,000 ft elevation. Much of the following is summarized from *Hilo Bay: A Chronological History* (Kelly et al. 1981), an extensive and thorough compendium of historical information about Hilo including Waiakea.

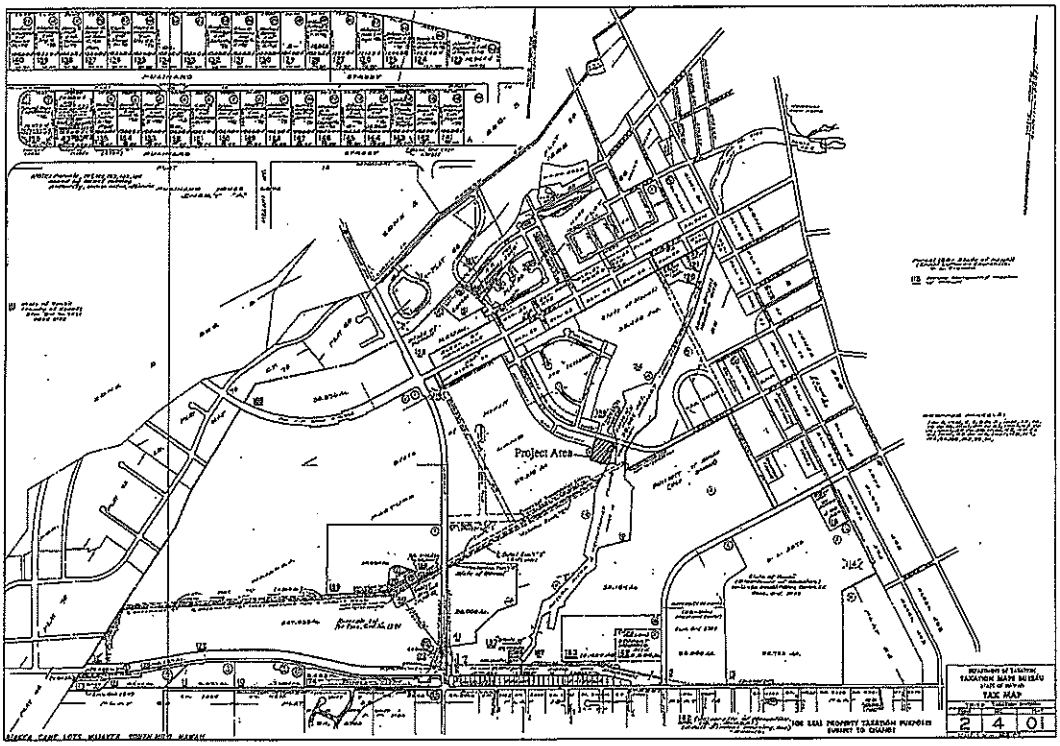

Figure 2. TMK:2-4-01 showing Project Area

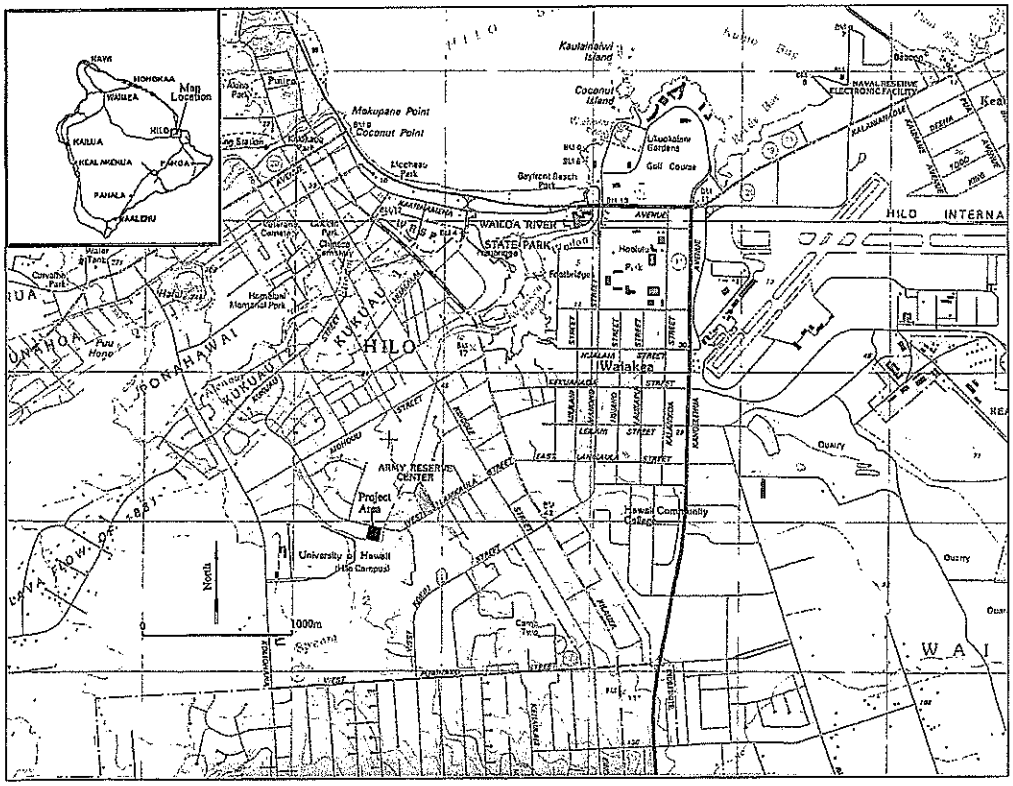

Figure 1. Portion of Hilo Quadrangle showing Project Area

Hawaiian traditional and legendary accounts attest to the longstanding importance of Waiakea. The chief of the Hilo region, Kulukulu'a, who resided in Waiakea, was the first conquest of 'Umi-a-Liloa in his campaign to unify the districts of Hawaii Island. Hilo with its large bay, fishponds, wet taro fields, and abundant freshwater was a population center for commoners and royalty. Kamehameha I and his court resided in Hilo in the 1890s. In preparation for his planned invasion of Kauai in 1802, Kamehameha built a canoe fleet at Hilo, reportedly consisting of 800 vessels.

In 1824, a missionary station was established in Waiakea. Soon after, churches and schools were established. Whalers began stopping at Hilo in the mid-1820s. In the 1830s, a sawmill was built, and two stores were opened. By the end of the decade, a sugar cane plantation and mill were established on Ponahawai lands. By 1857, there were three sugar cane mills in the Hilo area. Large tracts of land were put in cane cultivation and sugar cane was also grown by individuals around their houses. A sugar mill was established in Waiakea at the inland end of Waiakea Fishpond in the late 1870s. By 1880, 1,400 acres of sugar cane were in cultivation and by the end of the decade over 5,600 acres were cultivated. In the 1900s, the population of Hilo grew dramatically with the expansion of sugar cane cultivation, pineapple production, the timber industry, and other commercial developments.

McEldowney (1979) used limited site inventory and historic documentary evidence to develop a traditional Hawaiian land use and settlement pattern model for the Hilo area. The model consists of five elevation-defined zones: Coastal Settlement, Upland Agricultural, Lower Forest, Rainforest, and Sub-Alpine or Montane. The Coastal Settlement Zone extended approximately 0.5 miles inland from the shoreline between sea level and 50 ft elevation. The zone was the most densely populated with both permanent and temporary habitations, high status chiefly residences, and *heiau*. Settlements were concentrated at Hilo Bay and sheltered bays and coves.

The Upland Agricultural Zone was situated between approximately 50 ft and 1,500 ft elevation. Settlement in the zone consisted of scattered residences among economically beneficial trees and agricultural plots of dryland taro and bananas. Lava tubes were utilized for shelter. A pattern of shifting cultivation is believed to have converted the original forest cover to parkland of grass and scattered groves of trees. Wetland cultivation of taro occurred along streams.

The Lower Forest Zone ranged from 1,500 ft to 2,500 ft elevation. Timber and other forest resources such as medicinal plants, *olona*, and birds were gathered from the zone. Site types consisted of temporary habitations, trials, shrines, and minor agricultural features in forest clearings and along streams. Sites in the Rainforest Zone (2,500-5,000 ft elevation) and Sub-alpine or Montane Zone (5,000-9,000 ft) were limited to trails and associated temporary habitations. These zones were used for intra-island travel and gathering of valued resources including hardwoods, birds, and stone for tool making.

The project area is situated within the lower portion of McEldowney's Upland Agricultural Zone where scattered residences and agricultural plots were situated in prehistoric to early historic times. Historic site types in the project area vicinity likely included plantation agriculture-related features and residences.

FINDINGS

No archaeological sites or features were identified during the survey. As stated, the project area vegetation is dominated by secondary growth strawberry guava, indicating that the parcel was previously cleared of its native plant species. This clearing may have occurred in conjunction with the extensive sugarcane cultivation that occurred throughout much of the Hilo area, including Waiakea. The project area has been further impacted by recent bulldozer activity. No further archaeological work is recommended based on the negative survey results.