

University of Hawai'i at Mānoa Final Environmental Assessment

SEPTEMBER 2008

Prepared for:



Prepared by:



UNIVERSITY OF HAWAI'I AT MĀNOA FINAL ENVIRONMENTAL ASSESSMENT

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LIST OF ACRONYMS

The following is a list of terms, abbreviations, and acronyms used in this document.

A		
	ADA	Americans with Disability Act
	ALISH	Agricultural Lands of Importance to the State of Hawai'i
	AM	Morning
	ATA	Austin, Tsutsumi & Associates, Inc.
В		
	BMPs	Best Management Practices
	BOR	Board of Regents, University of Hawai'i at Mānoa
	BWS	City and County of Honolulu, Board of Water Supply
C		
	CATV	Cable television
	CFC	Chlorofluorocarbons
	CIA	Cultural Impact Assessment
	CIP	Capital Improvement Project
	CZM	Coastal Zone Management
	CZMA	Coastal Zone Management Act
D		
	DAGS	State of Hawai'i, Department of Accounting and General
	11	Services
	dba	Doing business as
	DLNR	State of Hawai'i, Department of Land & Natural Resources
	DOD	State of Hawai'i, Department of Defense
	DOH	State of Hawai'i, Department of Health
	DP	Development Plan
	DPP	City and County of Honolulu, Department of Planning &
	DTC	Permitting City and Country of Handhulu Department of Transportation
	DTS	City and County of Honolulu, Department of Transportation Services
E		Services
Ľ	EA	Environmental Assessment
	EB	Eastbound
	EIS	Environmental Impact Statement
	EO	Executive Order
	EPA	Environmental Protection Agency
	ESA	Endangered Species Act
	ETS	Environmental Tobacco Smoke
F		
•	F	Fahrenheit

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FEMA Federal Emergency Management Agency FIRM Flood Insurance Rate Map FM Domestic/fire service (water meter) **FONSI** Finding of No Significant Impact UH Facilities Planning and Management Office **FPMO** Forest Stewardship Council **FSC FWCA** Fish and Wildlife Coordination Act G **GPD** Gallons per day **GPM** Gallons per minute Η H-POWER Honolulu Program of Waste Energy Recovery HAR Hawai'i Administrative Rules **HCM** Highway Capacity Manual **HECO** Hawaiian Electric Company **HFD** Honolulu Fire Department **HHCTCP** Honolulu High-Capacity Transit Corridor project **HPD** Honolulu Police Department HRS Hawai'i Revised Statutes **HVAC** Heating, ventilation and air conditioning Ι **IBC International Building Code** K kVA Kilovolt Amperes **KW Kilowatt KWhr** Kilowatt hour L LEED Leadership in Energy and Environmental Design LEED NC **LEED New Construction** LOS Level-of-service is a quantitative and qualitative assessment of traffic operations Long Range Development Plan **LRDP** LSB Land Study Bureau LT Left turn LUC State of Hawai'i, Land Use Commission LUO Land Use Ordinance M MIA Makiki Stony Clay Loam soil **MPH** Miles per hour MSL Mean sea level Manual on Uniform Traffic Control Devices MUTCD MVA Megavolt Amperes

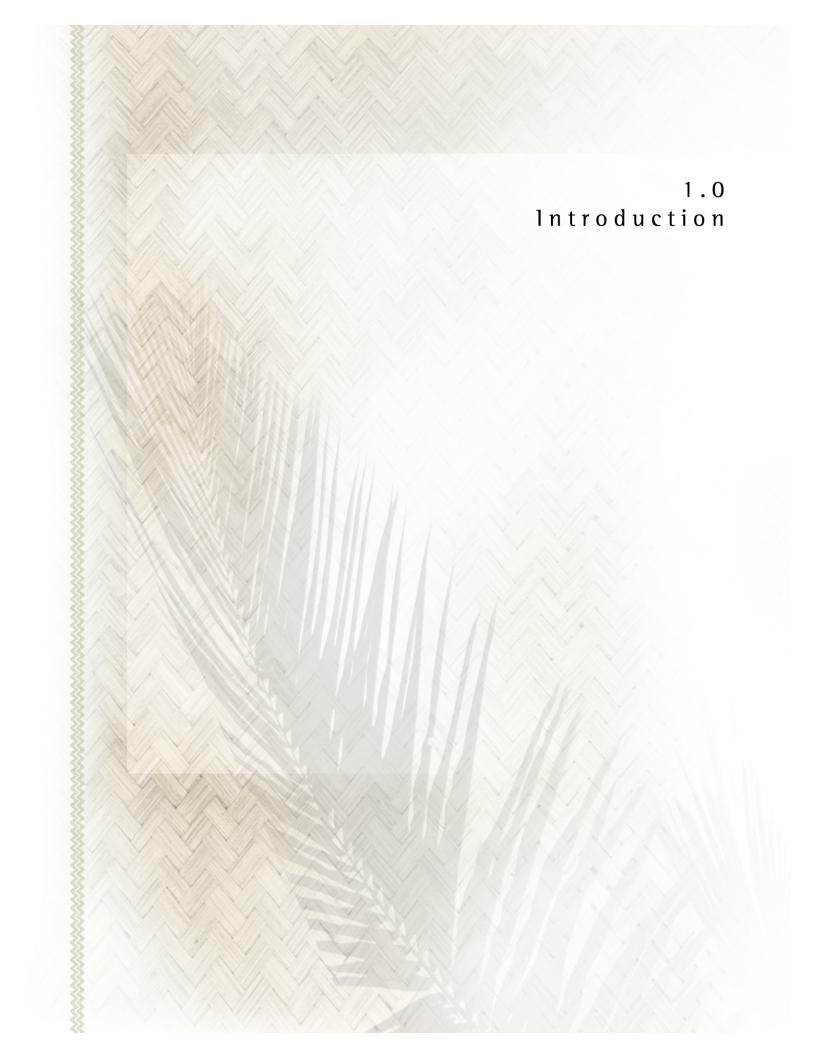
National Environmental Policy Act

N

NEPA

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	NFPA 10	National Fire Protection Association Standard for Portable Fire
		Extinguishers
	NHPA	National Historic Preservation Act
	NOAA	National Oceanic and Atmospheric Administration
	NPDES	National Pollutant Discharge Elimination System Permit
	NRCS	Natural Resources Conservation Service
	NWS	National Weather Service
_	INVVS	National Weather Service
O	0001	
	OCCL	Department of Land and Natural Resources, Office of
		Conservation and Coastal Lands
	OHA	Office of Hawaiian Affairs
	OSHA	Occupational Safety and Health Administration
	OTWC	Oceanic Time Warner Cable
P		
	PM	Afternoon
	PRU	Plan Review Use approval
	psi	Pounds per square inch
	PUC	Primary Urban Center
R		
	R-5	Residential Zoning District (City and County of Honolulu)
	ROH	Revised Ordinances of Honolulu
	RT	
c	KI	Right-turn
S	CE	Causana fact
	SF	Square feet
	SHPD	State Historic Preservation Division
	SMA	Special Management Area
	SMP	Special Management Area Use Permit
	SOI	Secretary of the Interior
T		
	TH	Through (traffic)
	TIAR	Traffic Impact Analysis Report
	TMK	Tax Map Key
U		
	UH	University of Hawai'i
	UHM	University of Hawai'i at Mānoa
	UHSM	University Health Services Mānoa
	UIC	Underground Injection Control Line
	USC	United States Code
	USGS	U.S. Geological Survey
\mathbf{v}	0000	o.o. Geological barvey
V	VOC	Volatile organic compound
W		Volatile organic compound
٧V		Westbound
	WB	
	WMP	Water Management Plan



UNIVERSITY OF HAWAI'I AT MĀNOA FINAL ENVIRONMENTAL ASSESSMENT

1.0 INTRODUCTION

This Final Environmental Assessment (EA) is prepared in accordance with Chapter 343, Hawai'i Revised Statutes (HRS) for the proposed renovation of Gartley Hall at the University of Hawai'i at Mānoa, hereinafter referred to as "Gartley Hall Renovation."

1.1 PROJECT SUMMARY

Project Name: Gartley Hall Renovation

Location: Honolulu, Oʻahu

Tax Map Key (TMK): (1) 2-8-23-03 (por.)

Applicant: University of Hawai'i at Mānoa

Landowner: State of Hawai'i - University of Hawai'i System (per

Executive Order (EO) 1807 to the Board of Regents

(BOR) of the University of Hawai'i)

Existing use: Existing classroom building

Proposed Action: Renovation

Project Area: Approximately 30,000 square feet

Land Use Designations: State Land Use: Urban

City and County of Honolulu

Primary Urban Center

Development Plan: Institutional **City and County of Honolulu Zoning:** Residential (R-5)

Special Management Area: The project is not in the Special Management Area

(SMA)

Permits/Approvals Requested: Approval of Project Construction Plans

Building and Grading Permits

Approving Agency: University of Hawai'i at Mānoa

Determination: Finding of No Significant Impact (FONSI)

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1.2 LOCATION

The proposed site for the Gartley Hall Renovation is located within the University of Hawai'i at Mānoa Central Campus, in urban Honolulu on the Island of O'ahu, State of Hawai'i (Figure 1). The Gartley Hall Renovation is located on the historic quadrangle where the campus originally started development. The historic quadrangle is delineated by George Hall, Crawford Hall, Hawai'i Hall, Dean Hall, Gartley Hall and the relatively new, School of Architecture. Gartley Hall is located near the west end of Campus Road.

1.3 LAND OWNERSHIP

The State of Hawai'i - University of Hawai'i System (per EO 1807 to the Board of Regents of the University of Hawai'i) holds title to the land under the location (Figure 2) of the proposed action. Utilizing the Tax Map Key system, the land under the project site is identified as TMK (1) 2-8-23:03 (por.)

Contact: Kathleen Cutshaw

Vice Chancellor for Finance, Administration and Operations

University of Hawai'i at Mānoa

2500 Campus Road, Hawai'i Hall 307D

Honolulu, Hawai'i 96822 Phone: (808) 956-9190 Fax: (808) 956-5136

1.4 IDENTIFICATION OF APPLICANT

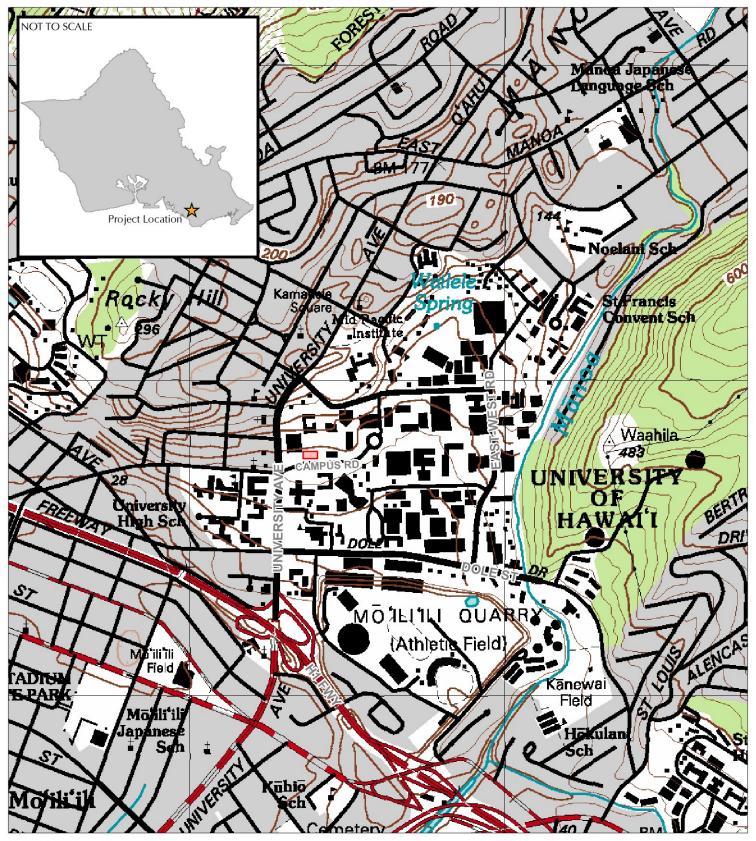
The University of Hawai'i at Mānoa is the project applicant.

Contact: Loren Lau, Project Manager and Registered Architect

Office of Capital Improvements University of Hawai'i at Mānoa

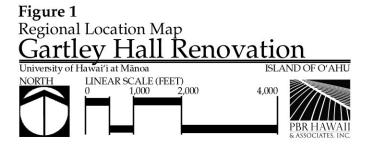
1960 East-West Road, Biomedical Services Building, B-102

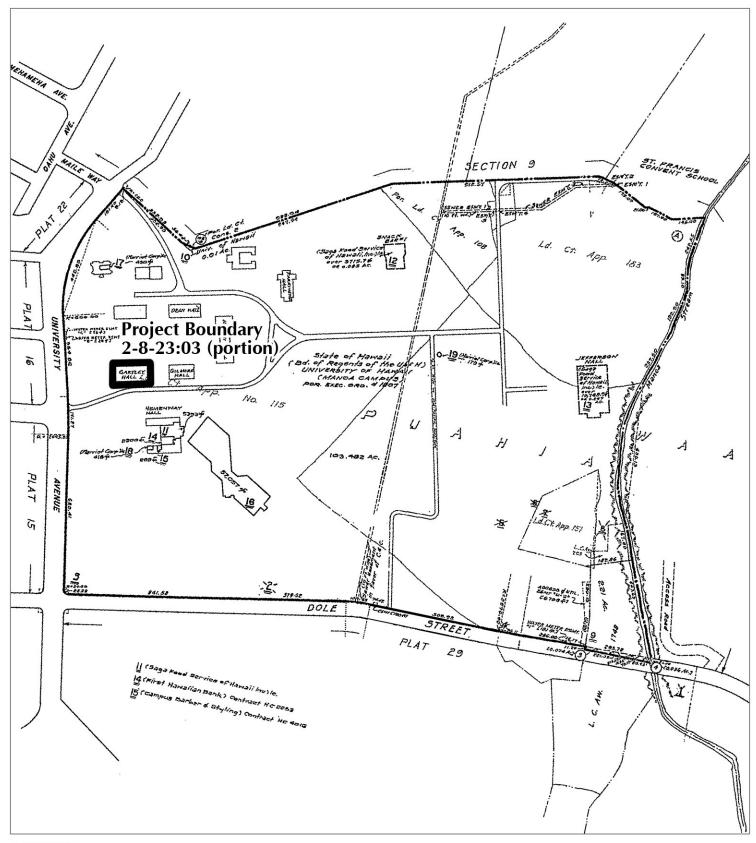
Honolulu, Hawai'i 96822 Phone: (808) 956-2739 Fax: (808) 956-3175



LEGEND

Project Area





LEGEND

Project Boundary

Figure 2
Tax Map Key2-8-23:03 (portion)

Gartley Hall Renovation

Jniversity of Hawaiʻi at Mānoa

ISLANDOFO



NOT TO SCALE

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1.5 IDENTIFICATION OF ENVIRONMENTAL CONSULTANT

The environmental consultant is PBR HAWAII & Associates, Inc. dba PBR HAWAII, a sub-consultant under contract with Fung Associates, Inc.

Contact: Vincent Shigekuni, Vice President

PBR HAWAII 1001 Bishop Street ASB Tower, Suite 650 Honolulu, Hawai'i 96813 Phone: (808) 521-5631 Fax: (808) 523-1402

1.6 IDENTIFICATION OF APPROVING AGENCY

The University of Hawai'i at Mānoa is the approving agency.

Contact: Kathleen Cutshaw

Vice Chancellor for Finance, Administration and Operations

University of Hawai'i at Mānoa

2500 Campus Road, Hawai'i Hall 307D

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1.7 COMPLIANCE WITH STATE OF HAWAI'I AND CITY AND COUNTY OF HONOLULU ENVIRONMENTAL LAWS

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

1.8 IDENTIFICATION OF AGENCIES CONSULTED

Various agencies (or agency documents) were consulted in preparation of this EA. Responses to the pre-consultation are attached in Appendix A. Responses to Draft EA comments are attached in Appendix B.

Federal

Army Corps of Engineers Department of the Interior, U.S. Fish and Wildlife Service

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State of Hawai'i

Office of Senator Brian Taniguchi

Office of Representative Kirk Caldwell

Department of Business, Economic Development and Tourism

Department of Land and Natural Resources

Department of Land and Natural Resources, State Historic Preservation Division

Office of Environmental Quality Control

Office of Hawaiian Affairs

University of Hawai'i at Mānoa

City and County of Honolulu

Councilmember Ann Kobayashi, Honolulu County Council

Board of Water Supply

Department of Community Services

Department of Design and Construction

Department of Environmental Services

Department of Facility Maintenance

Department of Transportation Services

Fire Department

Police Department

Private

Hawaiian Electric Company



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2.0 PROJECT DESCRIPTION

This section provides background information and a general description of the Gartley Hall Renovation project site.

2.1 LOCATION

The proposed site for the Gartley Hall Renovation is located within the University of Hawai'i at Mānoa Upper Campus in urban Honolulu on the Island of O'ahu, State of Hawai'i (Figure 1). Specifically, the project is located between the historical quadrangle and the western end of Campus Road and between the School of Architecture and Dean Hall. Photographs of the site are included as Figure 3.

2.2 DESCRIPTION OF THE GARTLEY HALL RENOVATION

General Background - Gartley Hall was one of the first buildings constructed on the University of Hawai'i's Mānoa Campus. Built in 1921, the structure is listed on the Hawai'i Register of Historic Places and as such its renovation will need to conform to the Secretary of the Interiors' Standards for Rehabilitation. The Psychology Department is located within Gartley Hall, and the Psychology Department's anticipated growth in personnel, changes in its organizational structure, and impact of new technology will affect the programmatic requirements of the renovated structure.

The Department of Psychology at the University of Hawai'i (UH) covers the general spectrum that involves teaching, basic and applied research and training in the delivery of clinical services. It also includes a nationally accredited Clinical Studies Program that trains eligible clinicians who are also excellent scientists. The Clinical Studies Program is also associated with two clinics for treating eating disorders and child anxiety disorders. The Department of Psychology has the largest number of majors (estimated at 785 in 2006) on the UH Mānoa campus and services thousands of undergraduates annually. The department offers undergraduate courses in statistics, research methods, social psychology, abnormal psychology, health psychology, psychobiology, child psychology, cognitive and many specialized seminars. In 2006, the department had close to a hundred graduate students in graduate and doctoral programs. Its faculty members are active in research, publishing over 200 articles and seven books, as well as giving hundreds of presentations at scientific conventions. In 2006 when the interviews with the Department representatives were conducted, there were 26 faculty members who brought in millions of dollars in research funds to the UH, and whose professional work has brought international attention to the university.

The Department of Psychology created a Building Renovation Committee to address the functional program requirements of the Gartley Hall renovation. As such, the Gartley Hall renovation is proposed to accommodate the anticipated future growth at the Department of Psychology. The Gartley Hall renovation will upgrade the building

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to current building code including a new elevator for ADA accessibility and will attempt to achieve Leadership in Energy and Environmental Design (LEED) certification at the Silver level. The renovation also includes historic preservation criteria and the architects are working closely with the State Historic Preservation Division (SHPD) and campus planners to minimize impact to the historic features of the building particularly from the view of the historic Quadrangle.

Project construction is expected to occur in one phase. The basement level is anticipated to house the Center for Cognitive Behavioral Therapy and research spaces. The first level is expected to provide accommodation for administrative office spaces and instructional rooms. The second level would contain areas for faculty offices, graduate student workstations and instructional spaces. The main design issue still under consideration at the time of this writing is the location of the new elevator lobby. The options are presented in Figures 4A and 4B.

Existing Building Conditions - Gartley Hall is one of several historic buildings located at the Old Quadrangle. Access to the building is from the Old Quadrangle—either from the existing "main entry" or on both "short" sides of the building. There is no entry possible from the side parallel to Campus Road, although existing drawings show location of a short staircase and doorway to the main level. Recent retrofit elements to allow the building to respond to new accessibility and fire code requirements include the addition of a ramp on the Old Quadrangle elevation and fire stairs on the short sides of the building. Through the years, a series of renovations and rearrangement of interior walls have drastically altered the original floor plans of the building, including the addition of window air-conditioning units and other elements that are now rudimentary to all modern buildings.

Existing Space Use and Circulation Patterns - Built in 1921, Gartley Hall consists of three levels: a basement that is partly below grade, a first floor that is raised approximately four feet from the grade level; and a second floor. A small utility room sits on the roof level, which is also used to accommodate air-conditioning equipment. However, the basic internal circulation patterns envisioned by the 1920's architect still remain. A central staircase located at the mid-point of the structure links all three levels. Except for the basement, a central hallway ten feet wide cuts the functional spaces into two along the longitudinal section of the building. On the first and second floors, the effective depth of the usable space is approximately 26 feet. At the basement level, the interior walls create a maze of smaller rooms accessible from a public hallway that wraps around the exterior walls of the building—which is significantly different from the original plan.

Building Structure and Materials - The structure is made of reinforced concrete and masonry with concrete tile partitions. Through the years, other materials were used for retrofitting, particularly in the interior partitions. The structural issues that are critical to the renovation include the feasibility of reconstructing the basement's slab-on-grade



1. Campus Road Side of Gartley Hall



2. East Entrance of Gartley Hall



3. Gartley Hall & Old Quadrangle



4. Old Quadrangle side of Gartley Hall



5. Old Quadrangle



6. West Entrance of Gartley Hall & School of Architecture





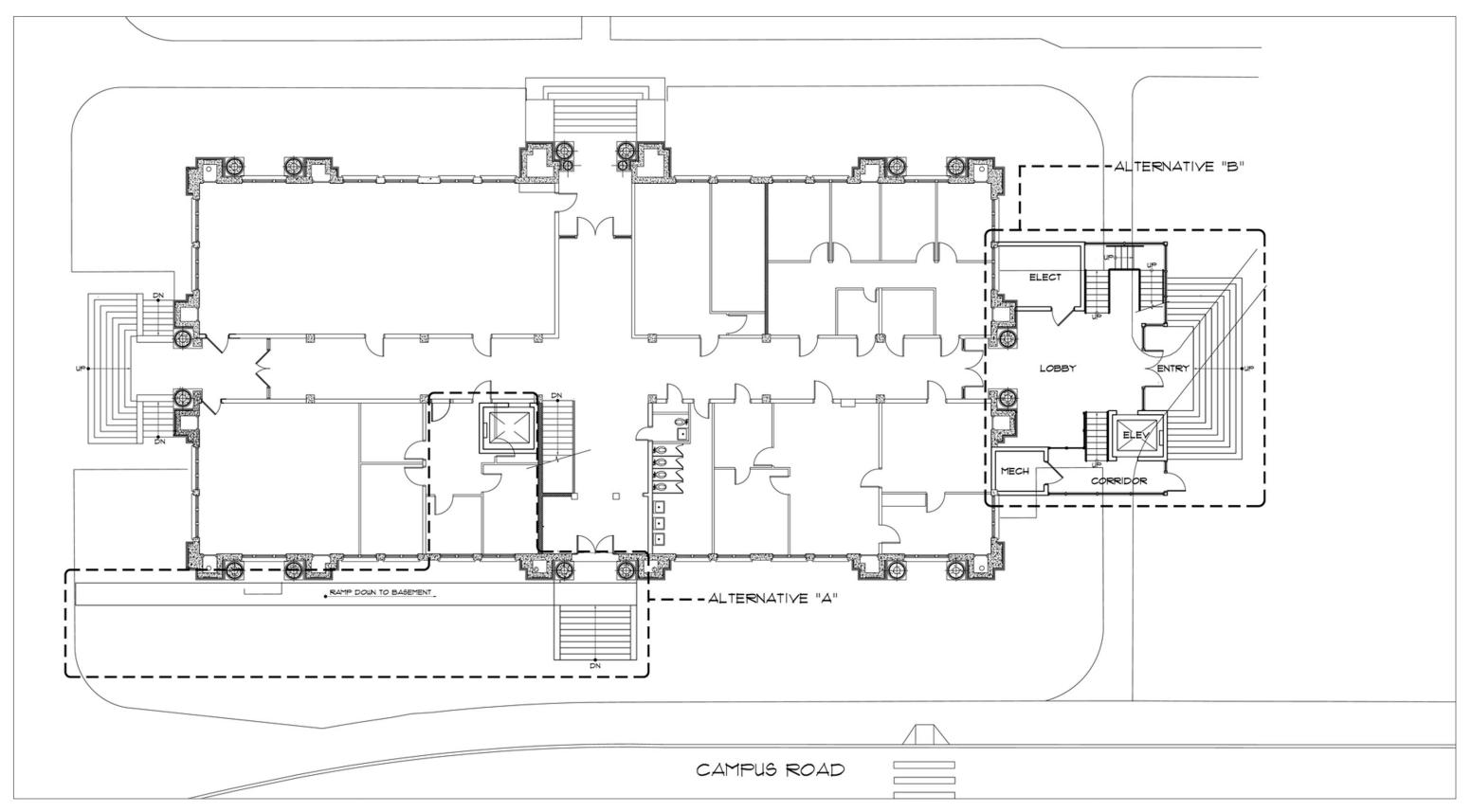


Figure 4A
Site Plan Tower Options Alternatives A & B

Gartley Hall Renovation
University of Hawai'i at Mānoa ISLAND OF O'AHU

NORTH LINEAR SCALE (FEET)

O 30

PBR HAWAII
PBR HAWAII

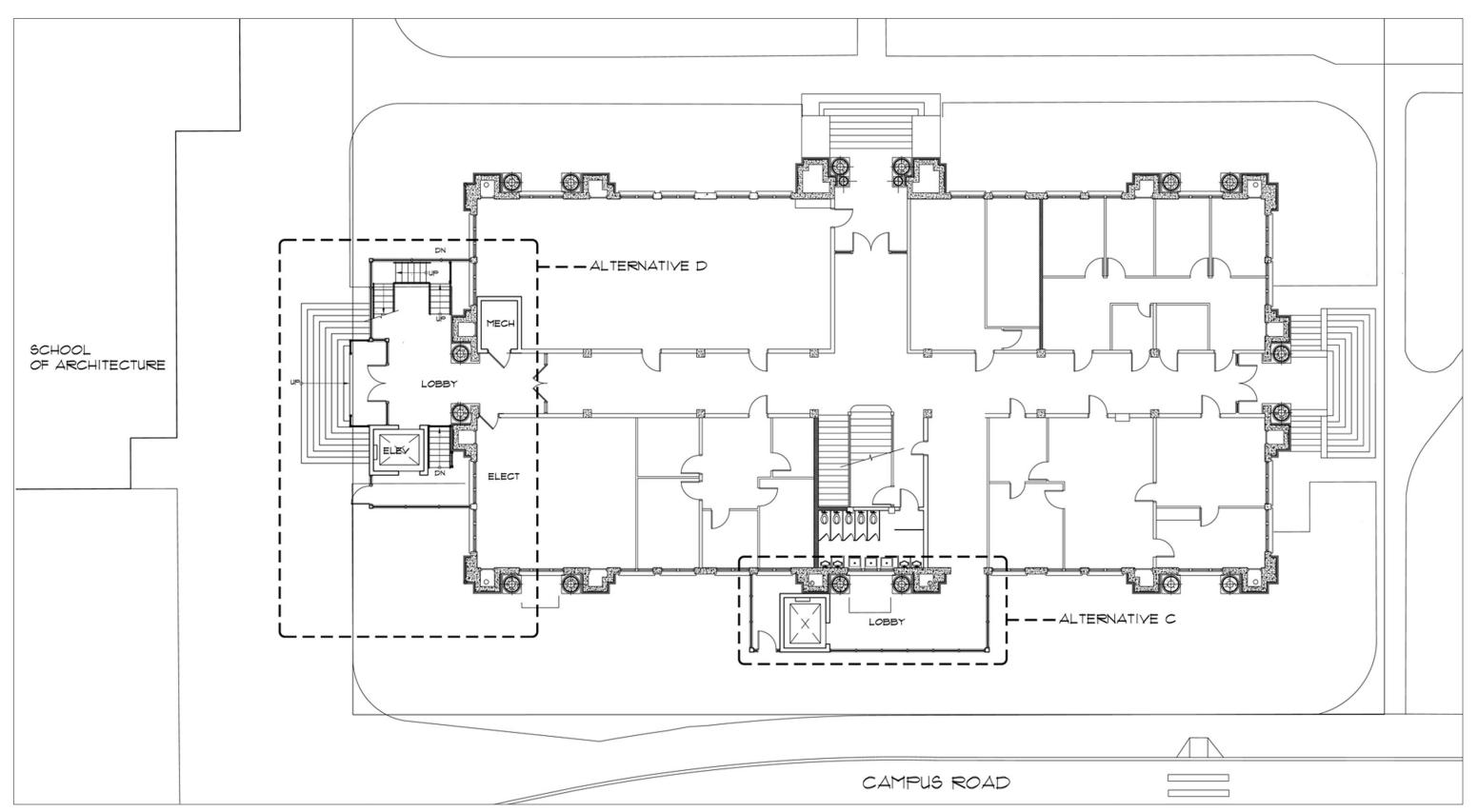


Figure 4B
Site Plan Tower Options Alternatives C & D

Gartley Hall Renovation
University of Hawai'i at Mānoa ISLAND OF O'AHU

NORTH LINEAR SCALE (FEET)

0 30 60

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to resolve the heaving of the slab (particularly near the west entrance) due to expansive soil underneath the slabs. The structural engineer prefers the option of removing the existing slab and excavating out the existing expansive material. The excavated material needs to be replaced with a non-expansive fill and capped with a new reinforced concrete, on-grade slab.

Summary of Problems and Deficiencies - Gartley Hall is an 87 year old building that was renovated only once before, more than 40 years ago. Since then, the building has been plagued by various problems. A summary of the health and safety issues of the building can be summarized as follows:

- Aside from the heaving of the entire basement slab, the Ewa-side basement entrance has been closed due to worsening conditions of the concrete slab. Consequently there is no viable fire escape access for this side of the basement.
- Lobbies and main access points have cracked flooring which could pose health hazards.
- The tacked on metal fire escapes are rusted and may not be consistent with current building code.
- The electrical wiring required replacement and has resulted in constant power surges.
- During heavy rains, the basement and some faculty offices get flooded resulting in mold and air quality concerns.
- Pieces of cement have been observed at some faculty offices and are assumed to have fallen from the ceiling. Some surfaces have developed cracks but it is not clear whether these are due to structural failure.

The structure is clearly in need of a major renovation. Not only does the building offer inadequate space for research and for psychological services that serves both the community and university clients, it also does not provide adequate space for Psychology's administrative needs, considering that the department has the largest number of majors in the university system.

The building has been described as "inhospitable place for students and faculty." Termite damage, water damage, soil subsidence, poorly conceived modifications and the constant wear and tear at the exterior makes it necessary to start its renovation soon.

Historic Preservation Considerations - Because Gartley Hall is considered a historic building, modifications to the structure, particularly its exterior, are subject to the approval of the State Historic Preservation Division (SHPD). Accordingly, the renovation will be cognizant of its historic designation.

Other Issues - The renovation will need to respond to the current building and accessibility codes. SHPD has the authority to review and concur with proposed

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renovations to historic buildings. An option is to remove existing slabs to construct new fire stairs, on the premise that this will be a structurally viable option. There is also a need to create a new elevator lobby. The architects will be working with UH on choosing an appropriate location for the new elevator lobby. The options being reviewed are shown in Figures 4A and 4B. This will have a major impact, not only on all building systems and on the circulation patterns of the building, but must also be weighed against the external pedestrian flow as envisioned in the *Long Range Development Plan*, *University of Hawai'i*, *Mānoa Campus 2007 Update* (LRDP), such as the creation of the East-West Mall).

According to the LRDP, existing conditions indicate that students traveling between the Campus Center, Hemenway Hall, Sinclair Library, University Avenue and Metcalf Street walk along Campus Road. Campus Road is used for parking and as a service road to Hemenway Hall, Student Services Center, and Gartley Hall. The LRDP recommends that vehicular traffic be eliminated from the heart of the Central Campus by closing and converting the portion of Campus Road fronting Gartley and Dean Halls into a secondary path for access for emergency, maintenance and service vehicles. The LRDP further recommends that this mall (referred to as "East-West Mall" should be developed as a walk through a botanical garden, with a number of informal sitting areas and a few well-defined activity areas. A garden café is proposed near Hemenway Hall that is diagonally across the proposed "East-West Mall" from Gartley Hall. An outdoor sidewalk café covered by an awning or trellis is envisioned for the mauka side of Hemenway Hall along the proposed East-West Mall facing Gartley and Dean Halls.

Also of consideration in the planning of the Gartley Hall Renovation is the LRDP's proposal of University Avenue Gateway to the campus, which also serves as the terminus of the western end of the East-West Mall.

One of the four major themes in the University's LRDP is "UHM – Leader in Environmental Sustainability." To that end, the University is attempting to achieve LEED certification at the Silver level. LEED, or Leadership in Energy and Environmental Design is a nationally-recognized program for certifying the design, construction and operation of high performance green buildings.

3.0 Description of the Natural Environment, Potential Impacts, and Mitigative Measures

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3.0 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

This section describes the existing conditions of the physical or natural environment, potential impacts of the Gartley Hall Renovation to the environment, and mitigation measures to minimize impacts.

3.1 CLIMATE

O'ahu's geological features heavily influence its climate. The Ko'olau Mountain Range dominates ground-based atmospheric influences within Mānoa Valley. Trade winds are typical of the Hawaiian Islands, blowing predominantly from a northeast direction, and averaging approximately seven (7) miles per hour (mph) (NOAA, no date). These trade winds typically bunch moisture collected over the ocean along the mountain range creating optimal conditions for precipitation. National Weather Service rain gauges sited at Lyon Arboretum in the back of the valley have recorded an average annual rainfall of approximately 160 inches per year. Gauges at the Kapi'olani Community College record rainfall of approximately 25 inches per year (NWS Website). Rainfall at the project site lies between these two extremes.

Regional temperatures within the city of Honolulu range from 62 degrees Fahrenheit at an extreme low, to 89 degrees Fahrenheit at an extreme high.

Potential Impacts and Mitigation Measures

Renovation of Gartley Hall is not anticipated to have any impact on climatic conditions and no mitigative measures are planned.

3.2 GEOLOGY AND TOPOGRAPHY

Geology

The project site sits at the foot of the Koʻolau Mountain Range – the eroded remnant of the Koʻolau Shield Volcano. The geology under the University of Hawaiʻi at Mānoa is highly influenced by three post-erosional volcanic vents associated with the larger Honolulu Volcanic Series: Puʻu Ualakaʻa (Round Top), Puʻu Kakea (Sugarloaf), and Puʻu ʻOhia (Tantalus). Honolulu Series eruptions did not occur rapidly and at one instance. Rather, they were scattered over a period of hundreds of thousands of years. All three vents are cinder cones derived from Strombolian-type eruptions. The approximately 67,000-year old flow from Puʻu Kakea spread out along Mānoa's valley floor creating a broad and nearly flat surface upon which the University of Hawaiʻi was constructed (Macdonald, 1983).

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The Honolulu plain is underlain by a broad elevated coral reef partially covered by alluvium, evidence of higher sea level (approximately 7.5 meters) during an earlier interglacial stage.

Topography

The regional topography of the University of Hawai'i at Mānoa campus gently slopes at less than five (5) degrees in a southwesterly direction toward the ocean. The immediate site is partially influenced by its location at the foot of Mānoa Valley's eastern wall, creating the slight slope toward the west at the project site.

Also, because of the large amount of human development on the University campus, the areas around the existing Gartley Hall have experienced profuse grading activity, as evidenced by the relatively level nature of the building site where the proposed renovation will occur.

Potential Impacts and Mitigation Measures

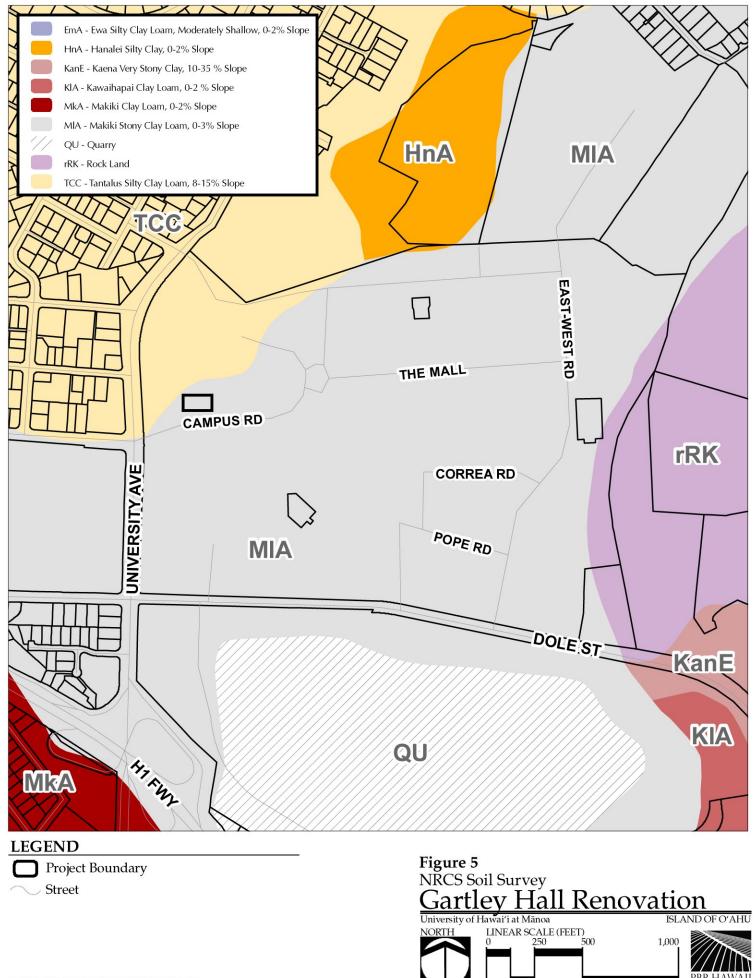
Due to the level conditions of the property, relatively minimal grading of the site will occur prior to renovation. The grading will not change the topographic nature of the Gartley Hall relative to the surrounding lands.

3.3 SOILS

Three soil suitability studies prepared for lands in Hawai'i principally focus on the relative agricultural productivity of different land types. These studies are: 1) the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) Soil Survey; 2) the University of Hawai'i Land Study Bureau Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH).

3.3.1 Natural Resources Conservation Service (NRCS)

The Natural Resource Conservation Service, Soil Survey for the Island of O'ahu, classifies the soil of the Gartley Hall Renovation project site as: Makiki Stony Clay Loam, 0-3% Slope (Figure 5). The Makiki series of soils are generally described as consisting of well-drained soils on alluvial fans and terraces. These soils formed in alluvium mixed with volcanic ash and cinders. They are nearly level. Makiki Stony Clay Loam is a neutral to slightly acid soil described as being similar to Makiki Clay Loam, except containing enough stones to hinder cultivation. Makiki Clay Loam is described as having a surface layer is dark brown clay loam about 20 inches thick. The subsoil, about 10 inches thick, is dark-brown clay loam that has subangular blocky structure. It contains cinders and rock fragments. The subsoil is underlain by similar material, about 24 inches thick, that is massive. Below this are volcanic cinders. Makiki Stony Clay Loam is almost entirely in urban use.



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3.3.2 Land Study Bureau Detailed Land Classification

The University of Hawai'i Land Study Bureau document, *Detailed Land Classification*, *Island of O'ahu*, classifies soils based on a productivity rating. Letters indicate class of productivity with A representing the highest class and E the lowest. The soils of the Gartley Hall Renovation project site are listed as Unclassified (Figure 6).

3.3.3 Agricultural Lands of Importance to the State of Hawai'i (ALISH)

The Agricultural Lands of Importance to the State of Hawai'i (ALISH) system classify important agricultural lands as Prime, Unique, or Other Agricultural Land. The Gartley Hall Renovation project site lands are not classified (Figure 7).

3.3.4 Soils Study

Two exploratory test borings were conducted immediately outside Gartley Hall on July 31, 2000, and one boring inside the building. The drillings outside the building extended to depths of 19 and 20.5 feet. The boring drilled inside the building extended to a depth of about four feet. All borings indicate that the underlying silty clay has a moderate to high expansion potential.

Potential Impacts and Mitigation Measures

Renovation of Gartley Hall will not have a deleterious effect on the soil in the project site. Because soils at the project site are not well suited for crop cultivation, and the site's development history, the proposed development should not impact the availability of agricultural land for cultivation.

To address the findings that the underlying soils has a moderate to high expansion potential, the soils engineer recommends that if the reconstruction of the concrete slab at the basement is considered, new slabs be underlain by at least two (2) feet of imported, non-expansive granular fill. However, should the renovation of Gartley Hall require the removal of the subgrade soil, the consultants recommend that the materials be re-interred within the boundaries of the Mānoa campus, within the work area that has been designated to address the needs of the various renovations within the campus. The soils engineers also indicate that spread footings or mat type foundations may be used to support the proposed elevator and stairs. However, the engineers recommend that the expansive clay be removed to a depth of two (2) feet below the bottom of foundations and replaced with imported granular structural fill.

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3.4 FLORA AND FAUNA

The University of Hawai'i at Mānoa has been subject to intense human utilization over the past century. Within the immediate proximity of the project site, there are no known habitats for rare, threatened, or endangered flora or faunal species. The current site consists of a grassed lawn on all four sides of Gartley Hall and associated ornamental landscaping, including Pink Tecoma (<u>Tabebuia pentaphylla</u>), Royal Palms (<u>Roystonia regia</u>), and Spider Lilies.

Potential Impacts and Mitigation Measures

The location of the Gartley Hall Renovation is not anticipated to have any significant impact on endangered flora or faunal species. No mitigation measures are planned.

3.5 NATURAL HAZARDS

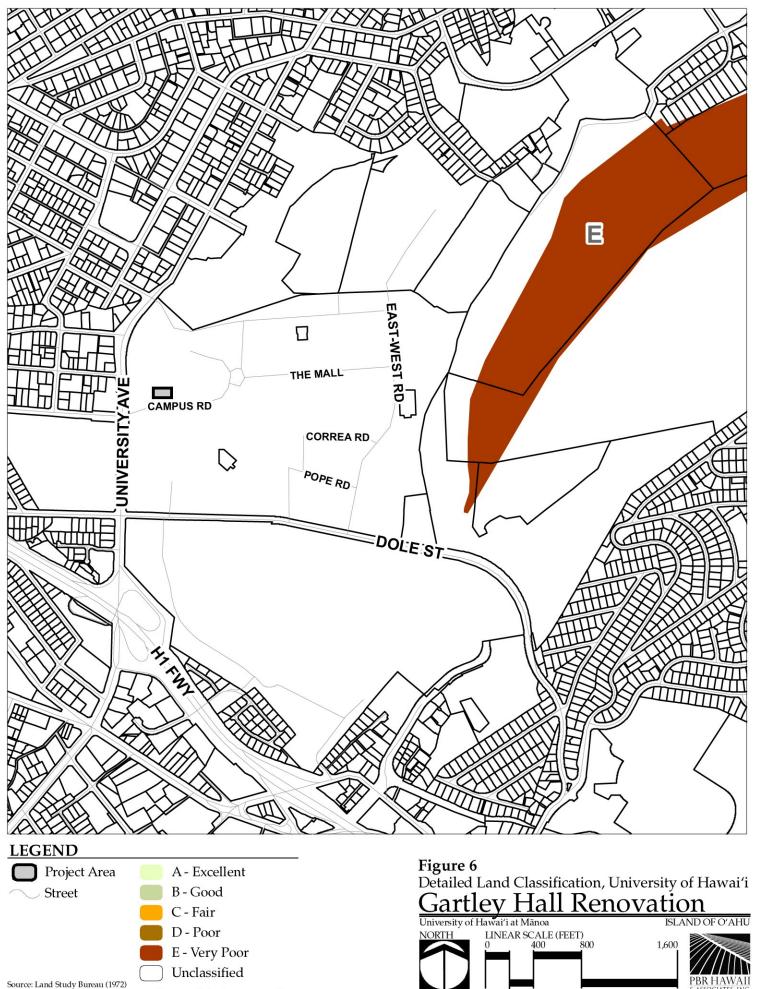
Natural hazards like flooding, tsunami inundation, hurricanes, earthquakes, and volcanic eruptions have historically impacted Hawai'i Island.

Flooding

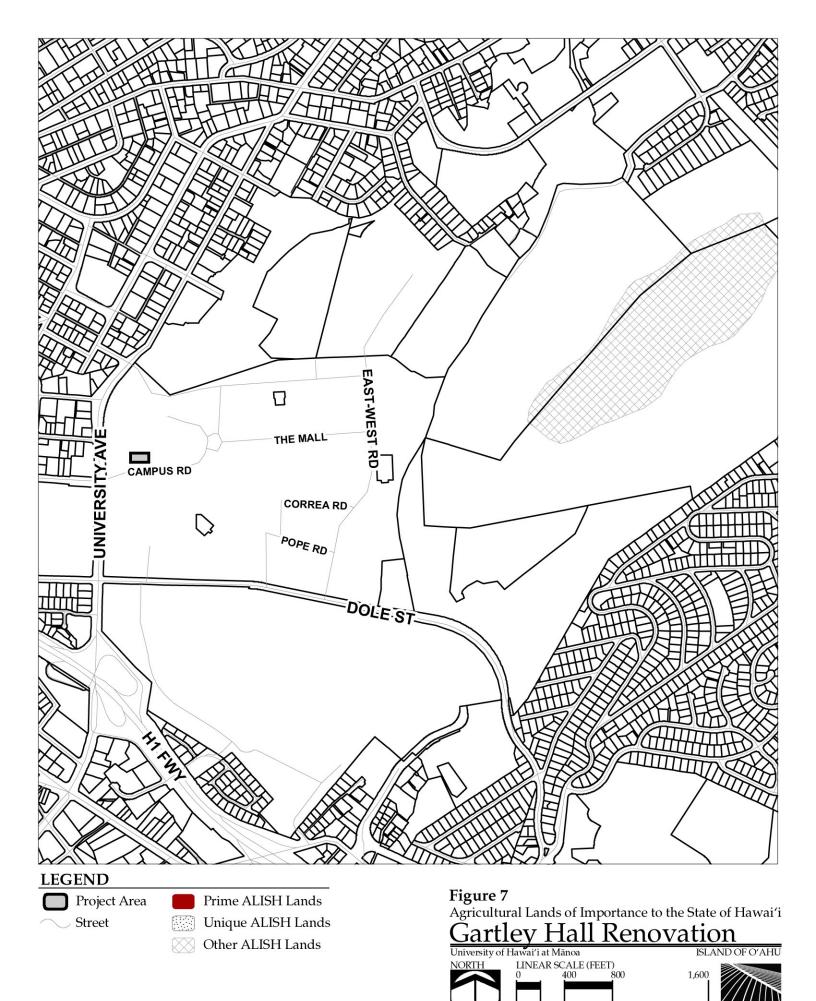
According to the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program, the project site is located in "Zone X", out of the 500-year flood plain (Figure 8). This was confirmed during the pre-consultation process, as the State Department of Land and Natural Resources, Engineering Division commented that the National Flood Insurance Program does not have any regulations for development within Zone X.

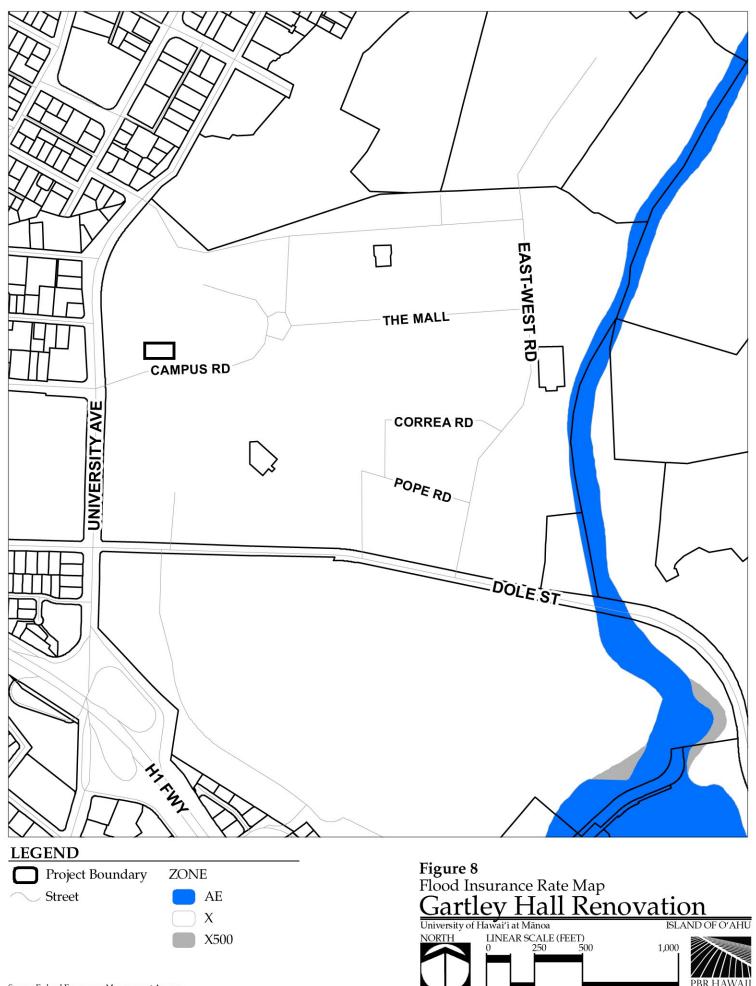
The site sits in a dry and arid environment where the risks of flooding are low due to a combination of factors, including low rainfall, thin soil layer, slope, and the porosity of the bedrock. During periods of heavy rainfall, localized ponding and some scouring by flowing surface water may occur. However, those conditions typically dissipate as the water rapidly percolates through the substrate.

Although the proposed project site lies outside the denoted flood zone, the Mānoa campus experienced a catastrophic flood event on October 30, 2004 that caused an estimated \$80 million in damage to the University of Hawai'i, as well \$5 million worth of damage to residences upstream of the campus. The U.S. Army Corps of Engineers (Corps) conducted a post-flood, rainfall-runoff and stream hydraulic computer modeling of Mānoa Stream. The model results indicated that Mānoa Stream between Woodlawn and Kahaloa Drives had insufficient channel capacity to contain the flood waters caused by the October 30, 2004 storm event. Flood damage was further aggravated by debris clogged at the East Mānoa Road and Woodlawn Drive bridges over Mānoa Stream. Alternatives evaluated by the Corps included floodwalls or levees along selected portions of Mānoa Stream channel between the East Mānoa Road and



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





Source: Federal Emergency Management Agency Disclaimer: This graphic has been prepared for general planning purposes only.

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Woodlawn Drive bridges, and creating an artificial channel between East Mānoa Road and Woodlawn Drive.

In October 2007, Austin Tsutsumi & Associates, Inc. (ATA) prepared a report entitled: *Utility Systems Report, University of Hawaii at Manoa, Long Range Development Plan 2007 Update, (Category I), Manoa, Honolulu, Hawaii.* ATA reported that: "The U.S. Department of Agriculture Natural Resources Conservation Services is currently investigating the flood mitigation and restoration of Mānoa Stream in the Mānoa Watershed Project. The project is a partnership between city, state and federal agencies as well as a consultant team led by Oceanit, Inc. They expect to have a final Environmental Impact Statement and implementation plan by the end of 2008 with design and implementation to follow thereafter. Through this project, the flood mitigation measures such as the measures suggested in the U.S. Army Corps' report (e.g., adding a flood wall or levee at the Woodlawn Drive Bridge) will be implemented. It is recommended that the University be represented at the Mānoa Watershed Project meetings to review their recommendations and monitor the Project's implementation of the recommendations in order to coordinate improvements affecting the University's property."

After the flood event, the debris at Woodlawn Drive (including cars) were removed. Malama O Mānoa has "adopted" the reach of Mānoa Stream between East Mānoa Road and Woodlawn Drive and conduct stream clean-ups quarterly.

Tsunami

Since the early 1800s, approximately 50 tsunamis have inundated Hawai'i's shores. Seven historical events have caused major damage. Two tsunamis were generated locally. The proposed Gartley Hall Renovation is located well outside the defined tsunami inundation area.

Hurricanes

Since 1980, two hurricanes have had a devastating effect on Hawai'i: Hurricane 'Iwa in 1982 and Hurricane 'Iniki in 1992. Long-term prediction of future hurricanes is virtually impossible. However, one should reasonably anticipate the prospect of another hurricane impacting the islands.

Earthquake & Volcanic Hazards

In Hawai'i, volcanic activity produces most earthquakes in contrast to other areas sitting on tectonic plate margins. Thousands of earthquakes occur in Hawai'i each year. However, the vast majority of them are undetectable through normal human senses. A few historical earthquakes have reached moderate and even disastrous magnitudes.

The last earthquakes felt statewide were magnitudes of 6.7 and 6.0. These earthquakes occurred at Kīholo Bay along Hawai'i Island's Kona Coast on October 15, 2006. These earthquakes resulted in more than \$100 million in damages to the northwest area of Hawai'i Island and minimal damage on O'ahu. From that same event, O'ahu was also

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subject to an earthquake induced electrical blackout that paralyzed the City of Honolulu and shut down the Honolulu International Airport for nearly a day.

Potential Impacts and Mitigation Measures

The Gartley Hall Renovation should not have any impact or any deleterious effects on natural hazard conditions and no unique mitigation measures are planned, other than observing the International Building Code in the design of the renovation (to address the potential impacts from hurricanes and earthquakes).

3.6 HAZARDOUS MATERIALS

An environmental on-site survey indicated that the sub-grade soil is contaminated with various pesticides and that these pesticide residues could cause a hazard to workers and the public if disturbed without adequate control. It was also pointed out that the pesticide residues could be present in interior surfaces of underground electrical structures including manholes, hand-holes and ducts.

Aside from the analysis of the subsurface materials, the building was assessed for environmental and worker hazards that may occur during the renovation period. An asbestos survey was conducted on all visible and accessible building materials. Painted surfaces were analyzed for the existence of lead based paint. The environmental report indicates that some areas of the vinyl floor tile, floor tile mastic, joint compound on gypsum board, interior cementitious panels and roofing vent sealants contain asbestos in concentrations exceeding one (1) percent. The results of the study also indicate that lead-containing paint is present in many interior and exterior surfaces throughout the building.

Potential Impacts and Mitigation Measures

The environmental engineers recommend that the disturbance of the sub-grade soil should be minimized. However, should the renovation of Gartley Hall require the removal of the contaminated sub-grade soil, the environmental engineers recommended that the materials be re-interred within the boundaries of the Mānoa campus, within the work area that has been designated to address the needs of the various renovations within the campus.

A plan for the safe removal of hazardous materials in the building will be developed prior to the demolition of the existing building materials.

Since 2002, the guiding principle of the University of Hawai'i is sustainability – living in ways that meet the campus' present needs without limiting the potential of future generations to meet their needs. The UH LRDP 2007 update has instituted a framework of sustainability guidelines as the basis to develop, evaluate and

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communicate the integration of sustainability in the development and operation of the UH Mānoa Campus. The Sustainability Guidelines from the LRDP state:

INDOOR ENVIRONMENTAL QUALITY

All development should encourage a healthy living environment both indoors and outside. EPA reports that the air in new buildings can be ten times more polluted than outdoor air. Poor indoor air quality is caused partly by the off-gassing of chemicals found in many synthetic building materials. It is also caused by mold and mildew that build up in poorly designed and maintained heating and cooling systems. This problem is minimized with natural ventilation.

Examples of LEED Criteria and Strategies:

- Design ventilations systems to meet or exceed the minimum outdoor air ventilation rates as described by Ventilation for Acceptable Indoor Air Quality standards.
- Minimize exposure of building occupants, indoor surfaces and ventilation air distribution systems to Environmental Tobacco Smoke (ETS) by prohibiting smoking in buildings and locating any exterior designated smoking areas at least 25 feet away from entries, outdoor air intakes and operable windows.
- Provide capacity for ventilation system monitoring to help sustain occupant comfort and well-being.
- *Use paints, adhesives and carpets that have low volatile organic compounds (VOCs).*
- *Use no-added formaldehyde insulation.*
- Design the building to maximize interior daylighting and view opportunities. Strategies include...lower partition heights,...interior permanent shading devices, high performance glazing and automatic photocell based controls.

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4.0
Description of the Human
Environment, Potential Impacts,
and Mitigative Measures

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4.0 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

This section describes the existing conditions of the human environment, potential impacts of the Gartley Hall Renovation, and mitigation measures to minimize any impacts.

4.1 HISTORIC, ARCHAEOLOGICAL AND CULTURAL RESOURCES

4.1.1 Historic Resources

Existing Conditions

The State Historic Preservation Division (SHPD) lists Gartley Hall, and the open expanse of lawn mauka (and north of) referred to as the Old Quadrangle, on the Hawai'i Register of Historic Places.

Potential Impacts and Mitigation Measures

Since Gartley Hall is considered historic, the visual aspects of the open space and the external design of the historic buildings around the Quadrangle are to be preserved to maintain the overall historic ambience. SHPD recommends restoring the external features of the Gartley Hall structure to its original design intent, including:

- The building's fenestration should be replaced with historically accurate replicas.
- The historic renovation should include the removal of recently added elements such as fire escapes, ramps, exhaust pipes, trash enclosures and light fixtures.
- The design of any addition or renovation should follow the Secretary of the Interior's (SOI) Standards for Rehabilitation.

The addition of new elements (which is necessary to upgrade the structure to current building codes and can follow the SOI Standards for Rehabilitation) is deemed acceptable by SHPD provided that the design shows some sensitivity and respect to the historic nature of the building and the ambience that is desired.

Among of the most visible features of the building are its columns, fenestration pattern and open staircases. SHPD expressed preference to have the "open" staircase at either end of the structure to be retained, and that the architectural features of the two end elevations be retained. It is also SHPD's preference to retain the existing "grand"

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staircase that links the main level with the second level, as well as keep the corridor walls and to retain the existing width, or at least to keep one side of the original walls in place. Also SHPD recommended that compatible substitute materials that are important in defining the overall historic character of the building be used. While the staircase are important architectural features of Gartley Hall, the building is not ADA accessible and requires the installation of an elevator to ensure greater accessibility.

The new elevator lobby could also be located within the structure, but that would mean the degradation of the interior architectural features and the loss of usable space. Due to the lack of as-built structural data, there is also concern that the building's overall structural integrity may be compromised. Meetings with the SHPD's staff indicate that they would prefer to have the addition not to look like the original building. The addition has to look like it was definitely built after the original structure was completed. The "additions" to historic structures should be obvious to the untrained eye so that the viewing public can see that the historic building has been modified.

Since the start of the project, several alternatives were explored and tested for feasibility and are compiled below. The evaluation of alternatives took into consideration the most feasible location of the elevator lobby taking into account the impact to the historic aspects of the structure and the accessibility and circulation of the renovated building. The building has several potential locations outside of the structure for a new elevator lobby. These alternatives are described in greater detail below:

Alternative A. In this alternative, a ramp facing the south side would provide the required ADA access to the building. An interior elevator would connect all the floors of the building. Both the proposed elevator and fire stairs are within the existing building envelope. The gross area is estimated at 26,880 square feet (SF) with the mechanical equipment located in the basement. This alternative is not deemed desirable because it will lose much of the usable space and may compromise the structural integrity of the building by removing interior floor slabs.

Alternative B. The new addition would be located on the east side of Gartley Hall facing Dean Hall. Both the proposed elevator and one of the fire stairs would be located in this new addition, and will allow the open stairway on the School of Architecture side of the building to remain without being enclosed. This alternative would allow for a possible future connection with Dean Hall, however it would be a complicated connection and may not happen for many years. Also it is a more visible side of Gartley Hall. The estimated gross area is 30,000 SF.

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Alternative C. In Alternative C, the elevator lobby would be a new addition located at the rear of Gartley Hall adjacent to the existing Campus Road. The ADA entry is from the rear. The gross area in this alternative is estimated at 28,200 SF, excluding the penthouse where the mechanical spaces will be located. This alternative conflicts with the existing sewer main located parallel to Campus Road and therefore deemed undesirable.

Alternative D. This alternative locates the elevator lobby and second fire stairs on the west side of Gartley Hall facing the School of Architecture Building. The estimated gross area is also 30,000 SF and follows the precedent set in Hawai'i Hall for attaching the addition at the more discreet longitudinal end of a historic structure. In meetings with SHPD since the publication of the Draft EA, Alternatives A or D are preferable to Alternatives B and C.

4.1.2 Archaeological Resources

During the pre-consultation process, the SHPD wrote that its Chapter 6E-8 HRS determination is pending ongoing design development. SHPD staff will be participating in a design charrette scheduled for August 6, 2008. The University of Hawai'i will continue to coordinate with SHPD in the proposed renovation of this historic building.

The University does not anticipate any adverse impact to archeological resources as a result of construction. The construction of the basement of Gartley Hall has extensively disturbed the project area, making the possibility of encountering any remaining surface, or sub-surface features unlikely. Based on the extensive landscaping modifications, grubbing and grading activities, construction of the Gartley Hall basement, and the lack of any archaeological evidence in the vicinity, it is unlikely that the proposed renovation of Gartley Hall would have an adverse impact on any significant archaeological features. However, should the inadvertent discovery of significant cultural materials and/or burials occur during construction, all work in the immediate area of the find must cease and the SHPD be notified. During the Draft EA public review period, SHPD commented that "should the location for the chosen option be outside of the basement's area, we request a program of precautionary monitoring." As such, a program of precautionary monitoring will be provided to SHPD should project construction be located outside of the basement area's original footprint.

4.1.3 Cultural Resources

The project site consists mostly of an existing building, and does not appear to provide any resources of use or interest to native Hawaiian cultural practitioners, such as food gathering, shelter, tool or weapon making, kapa-making, traditional medicines, lei making, etc.

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Potential Impacts and Mitigation Measures

In accordance with Section 6E-46.6, HRS, and Chapter 13-300, Hawai'i Administrative Rules, should any significant cultural deposits or human skeletal remains be encountered during project construction, work shall stop in the immediate vicinity, and the State Historic Preservation Division shall be contacted.

Based on historical research, it is reasonable to conclude that, pursuant to Act 50, the exercise of Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities within the project parcels will not be affected and there will be no direct adverse effect upon cultural practices or beliefs.

4.2 ROADWAYS AND TRAFFIC

As part of the University of Hawai'i at Mānoa Long Range Development Plan 2007 Update (LRDP Update) process, Austin, Tsutsumi & Associates, Inc. (ATA) completed a Traffic Impact Analysis report (TIAR) in October 2007. Also in conjunction with the LRDP update, a consultant, Parking Planners, conducted a Parking Supply/Demand Study and Site Alternatives Evaluation. As part of the overall LRDP Update document, both reports were accepted by the University of Hawai'i Board of Regents in November 2007. The TIAR included an assessment of traffic from the proposed parking structure at Kennedy Theater. Relative to the TIAR, the proposed parking structures (another proposed is referred to as "Parking Structure IIB/Bookstore [900 parking stalls]) were deemed the only part of the LRDP that will significantly alter traffic operations along the roadways within the area. This was attributed to the fact that traffic projections for universities are generally based upon student enrollment, which is not projected to increase.

Streets Surrounding the Manoa Campus

The roadway network in the vicinity of the campus includes:

University Avenue is a six-lane, north-south major collector roadway in the vicinity of UHM. North of Maile Way, the roadway narrows to two lanes. South of the H-1 Freeway, the roadway narrows to four lanes with channelization. In addition to UHM, this roadway serves as one of two primary access roads into Mānoa Valley, which is comprised primarily of residential land uses. South of UHM, on-ramps and off-ramps to the eastbound/westbound H-1 Freeway are provided. University Avenue ultimately terminates at Ala Wai School.

East-West Road is a two-lane UHM campus road that provides access from Dole Street into the UHM's Central Campus.

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Lower Campus Road is a three-lane UHM campus road that provides access from Dole Street into the UHM's Lower Campus (and athletic complex) and connects Lower Campus Road, the H-1 Freeway off-ramp, Varsity Place and Old Wai'alae Road.

Dole Street is a four-lane, two-way east-west collector road between University Avenue and East-West Road, where it is otherwise a two-lane collector road.

Metcalf Street is a two-lane, two-way east-west collector road that begins at its intersection with Alexander Street (near H-1 Freeway westbound on-ramp) to the west and terminates at University Avenue, where it continues eastward as Campus Road, which is (blocked off with bollards) inaccessible to vehicles from University Avenue.

Maile Way is a two-lane, two-way east-west minor collector road that begins at its intersection with O'ahu Avenue and provides vehicular access along the mauka side of the campus from University Avenue through UHM's Central Campus and terminates at its intersection with East-West Road.

TheBus

TheBus, which is the public transportation service provided by the City and County of Honolulu, provides various bus routes to and from the Mānoa Campus. These routes include:

Route A – Express bus service connecting the campus with Waipahu, and several points in-between, including Pearl City, Aloha Stadium, Kalihi Transit Center, Liliha, Downtown, and Ala Moana Shopping Center.

Route F2 – Express bus service connecting the campus with Aloha Tower, allowing riders to utilize TheBoat, a ferry service connecting Aloha Tower with Kapolei (Kalaeloa Barbers Point Harbor).

Route 4 – A bus service that connects Nu'uanu Valley, Downtown, Punchbowl, Makiki, the Mānoa Campus, Kapahulu, Waikīkī and the Honolulu Zoo.

Route 6 – A bus service that connects Nu'uanu Valley, Downtown, Ward Center, Ala Moana Shopping Center, Mō'ili'ili, the Mānoa Campus, and Mānoa.

Route 18 – A bus service that connects the Ala Moana, Makiki, the Mānoa Campus, and Kaimukī.

Route 85A – Express bus service connecting the campus with Kāne'ohe, and several points in-between, including Makiki, Downtown, and Kamehameha Shopping Center.

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While a one-way fare is \$2.00, monthly adult passes offering unlimited rides are available for \$40 a month. TheBus offers a reduced fare called the U-Pass for \$100 per semester.

Effective July 1, 2007, as the result of legislative action, the University has implemented a Pre-Tax Bus Pass option for University employees. This program is authorized under Section 132(f) of the Internal Revenue Code, known as the Transportation Equity Act for the 21st Century. Eligible University employees living and working on the island of O'ahu will be given the opportunity to purchase monthly bus passes through payroll deduction, on a pre-tax basis, thereby saving on FICA, Federal and State income taxes.

Honolulu High-Capacity Transit Corridor Project

The City and County of Honolulu is planning for a high-capacity transit corridor project between Kapolei and the University of Hawai'i at Mānoa. The Honolulu High-Capacity Transit Corridor Project (HHCTCP) has evaluated transit alternatives for the 23-mile long corridor between Kapolei and UH Mānoa. On December 22, 2006, the City Council adopted Bill 79 (2006), CD2, FD2 (Ordinance 07-001) which selected the fixed guideway alternative as the Locally Preferred Alternative (LPA). The LPA route travels between Kapolei and the University of Hawai'i at Mānoa, starting at or near the intersection of Kapolei Parkway and Kalaeloa Boulevard, down Saratoga Avenue to North-South Road (green route) or along Kamokila Boulevard (yellow route), as determined by the City and County of Honolulu administration before or during preliminary engineering. The route then continues to Farrington Highway across Ft. Weaver Road, to Kamehameha Highway to Salt Lake Boulevard and Aolele Street, as determined by the City administration before or during preliminary engineering to downtown Honolulu via Dillingham Boulevard. After leaving Dillingham Boulevard, the alignment would continue along Nimitz Highway, Halekauwila Street and Kapi'olani Boulevard to UH Mānoa with a branch to Waikīkī. The City and County of Honolulu is undertaking preliminary engineering and is in the process of preparing the environmental impact statement for the LPA. As the first project, the City Council selected a minimum operable segment (MOS) that will begin near the Kroc Center on North-South Road to Farrington Highway, through Waipahu, Pearl City, 'Aiea, and via Salt Lake Boulevard through downtown Honolulu to Ala Moana Center.

According to the HHCTCP website (http://www.honolulutransit.org/overview), the City and County of Honolulu Department of Transportation Services (DTS) is studying how to improve the ability of people to move in the highly congested east-west corridor between Kapolei and the University of Hawai'i at Mānoa. According to DTS, over sixty percent of O'ahu's population currently lives within the area served by this corridor, and this area is projected to continue to grow faster than the rest of O'ahu.

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On-Campus Shuttle

UHM Parking Operations provides a free on-campus shuttle bus service for faculty, staff, students and visitors. The Rainbow shuttle bus system consists of various shuttle routes which provide a mode of transportation throughout the campus during the fall and spring semesters, with various routes offered during the day and evening hours. The daylight hour routes are extensive and some routes extend into Mānoa Valley, providing service to the faculty housing in the Valley and Upper Campus, Wa'ahila Faculty Housing and into Mō'ili'ili. The route that includes Mō'ili'ili serves to supplement TheBus routes that do not quite reach the Mānoa Campus.

The evening hour service serves the student housing overlooking the Makai Campus and is especially important for the security of female students, faculty and staff. Modified routes and schedules operate during semester breaks.

Carpooling

While carpooling has long been in an option for commuters, regardless of the destination, the State also offers an organized carpooling program, call Vanpool Hawaii for \$55 a month. A vanpool is a group of 7 to 15 people who share the commute to and from work in a Vanpool Hawaii van. The most successful vanpool programs are ones that have commuters who live and work (or study) in the same geographical area and, or course, have similar work/school schedules. Vanpool riders also have the additional benefit of using HOV and Zipper Lanes (rules recently revised to require three or more passengers per vehicle to utilize Zipper Lanes).

Existing Traffic

The hourly turning movement data utilized in TIAR was collected by ATA between Tuesday, April 20 and Thursday, April 22, 2004. Traffic counts were redone at the University Avenue/Dole Street intersection on September 13, 2007. The counts showed a slight decrease in volume during the PM peak hour of traffic, and a negligible increase during the AM peak hour of traffic. Based on traffic count data, ATA determined that the peak hours of traffic were from 6:45 AM to 7:45 AM and 4:30 PM to 5:30 PM on weekdays.

Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. The Highway Capacity Manual – Special Report 209 (HCM), dated 2000, methods for calculating volume to capacity ratios, delays and corresponding Levels of Service were utilized in the TIAR.

According to the TIAR, the Manual on Uniform Traffic Control Devices, 2003 edition (MUTCD) recommends that successive intersections along a major arterial and within

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proximity of less than a half of a mile of each have their timing optimized and coordinated in order to facilitate optimal vehicular flow along the arterial. Currently, most of the signalized intersections along the following arterials meet this criterion:

- South King Street;
- Beretania Street; and
- University Avenue (only between Varsity Place and King Street).

The University Avenue/Dole Street and Dole Street/Lower Campus Road intersections are not currently coordinated. Coordination is accomplished by ensuring that each intersection within the coordinated region is bound by the same cycle length (or multiples thereof), and that the through traffic on the major arterial in the peak direction is allowed to flow at carefully planned offsets through consecutive intersections. This reduces the "stop and go" effect that drivers experience on uncoordinated systems, where red lights sometimes appear at each successive intersection, thus increasing motorist frustration and delay.

As a consequence of coordination and fixed-cycle lengths in general, vehicles traversing the minor approaches and those making the left-turn movement off of the main road often must wait at the intersection, despite the absence of vehicles traversing the main road.

Analysis of Intersections

ATA analyzed several intersections, including, but not limited to the following:

University Avenue/Dole Street - Due to the fact that this intersection serves as a junction point between Mānoa Valley residents accessing the H-1 Freeway and cars accessing the Quarry Parking Lot and Central Campus, congestion occurs at this intersection. One problem observed during the AM peak hour of traffic is that vehicles traveling in the northbound direction queue back beyond the H-1 Freeway off-ramps (approximately 1,000 feet) due to:

- Prohibition of right-turn-on-red in the northbound direction, although an extraordinarily high number of right turns occur (648) during the AM peak hour of traffic;
- Weaving pattern vehicles exiting the H-1 Freeway off-ramps in the northbound direction along University Avenue do not always make the right-turn. In fact, their destinations may include Saint Francis School, the Mid-Pacific Institute, the University Laboratory School, Mānoa Valley, Maile Way, Mō'ili'ili, and u-turns towards the south. As these vehicles exit the H-1 Freeway off-ramp, they attempt to move towards the center and left lanes while the prevailing queue hinders this movement. Furthermore, especially during the AM peak hour of traffic, after exiting the H-1 Freeway eastbound

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- and westbound off-ramps, vehicles immediately move towards the left lane in order to make u-turns; and
- Current information indicates that the University Avenue/Dole Street and the Dole Street/Lower Campus Road intersections are not coordinated. This could be a contributing factor to problems at these intersections. The result of this is a vehicular queue that causes queues to extend through the H-1 Freeway off-ramps and onto the Freeway. During the PM peak hour, congestion in the westbound direction queues back beyond the Dole Street/Lower Campus Road intersection and near the Law School Library. This often reduces the ability of vehicles to make the northbound left-turn out of Lower Campus Road onto Dole Street.

University Avenue/Metcalf Street - Vehicles generally flow smoothly through this intersection.

University Avenue/Maile Way - Although analysis indicates that this intersection operates at LOS B_during the AM and PM peak hours of traffic, vehicular flow in the northbound is_often impeded by:

- Narrowing of University Avenue to two (2) lanes immediately north of the University Avenue/Maile Way intersection;
- Occasional school bus stoppages (near the Mid-Pacific Institute) during the AM peak hour of traffic; and
- Operations at signalized intersection of University Avenue and Ka'ala Street, which incidentally provides access to the Mid-Pacific Institute. No chanellized lanes are currently provided at this intersection.

Dole Street/Lower Campus Road - This intersection serves as the highest volume access road into the Makai Campus. Currently, 3,509 parking stalls exist within the Makai Campus. These stalls, in combination with drop-off/pick-up turn around's at the Music Building and Law School Parking Lot, contribute to the high turning movement volume into and out of this intersection.

During the AM peak hour of traffic, 490 vehicles make the eastbound right-turn into Lower Campus Road. Some of the congestion along University Avenue can be attributed to this.

During the PM peak hour of traffic, approximately 271 vehicles make the northbound left-turn out of Lower Campus Road and westbound onto Dole Street, whereupon they immediately meet the westbound queue generated by the University Avenue/Dole Street intersection.

Dole Street/East-West Road – This intersection operates relatively smoothly during both the AM and PM peak hours of traffic.

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Existing Level of Service (LOS) at Representative Intersections

Table 4-1 provides a summary of the existing level of service of the above intersections as observed in the TIAR.

Table 4-1
Existing Traffic Level of Service (LOS) at Representative Intersections

Intersection	LOS-AM	LOS - PM
University Avenue/Dole Street	Е	F
University Avenue/Maile Way	В	В
University Avenue/Metcalf Street	A	A
Dole Street/Lower Campus Road	A	F
Dole Street/East-West Road	В	В

The TIAR also notes that currently observed heavy regional traffic at the intersections of South King Street/Beretania Street and University Avenue, Wilder Avenue and Dole Street, Wai'alae Avenue and St. Louis Heights Drive, and University Avenue and Varsity Place. At the intersection of Dole Street and Lower Campus Road, heavy traffic occurs during the PM Peak hour, with lighter traffic during the AM Peak Hour. Also, the TIAR found the intersections of University Avenue and Maile Way, and Dole Street and East-West Road to operate at acceptable levels.

Potential Impacts and Mitigation Measures

The analysis of traffic impacts must take into account the underlying traffic that would occur in the projected year, without the proposed project. The Year 2017 was selected as the Base Year to reflect the time table for Category 1 of the LRDP (5-10 Years). Base Year 2017 projections were formulated by applying a defacto growth rate to existing hourly vehicular traffic volumes.

Traffic Projections without the Proposed Project

The State Department of Transportation (SDOT) performs 24-hour traffic counts annually at various locations on O'ahu. Based on this data, it was possible to estimate the prevailing regional growth along King Street and Wai'alae Avenue, which is predicted to be approximately 1 percent, annually. By the year 2017, this equates to a 10.5 percent increase over existing conditions. No growth was projected near the University, since the LRDP projects that UHM's student enrollment will remain stable, and that not much more residential or commercial development will occur within the area. Not factored into the projections were the possible impacts that rising fuel prices

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and the implementation of the Honolulu High-Capacity Transit Corridor (HHCTC) (rail transit) may have on reducing vehicle trips.

Projected LOS Without the Proposed Project

Table 4-2 provides a summary of the projected traffic level of service in the Year 2017 at representative intersections.

Table 4-2 Comparison of Existing and Base Year 2017 LOS at Representative Intersections

	EXISTING LOS –	EXISTING LOS -	YEAR 2017 LOS –	YEAR 2017 LOS -
Intersection	AM	PM	AM	PM
University Avenue/Dole Street	Е	F	Е	F
University Avenue/Maile Way	В	В	В	В
University Avenue/Metcalf Street	A	A	A	A
Dole Street/Lower Campus Road	A	F	A	F
Dole Street/East-West Road	В	В	В	В

Regional Future Traffic and Intersections Requiring Mitigation Measures.

Based on the defacto growth rate, regional traffic will increase along King Street, Wai'alae Avenue, and Beretania Street. However, most of the study intersections will experience a relatively stable demand, due to the fact that development and student base within the area is projected to remain constant for all intents and purposes. LOS F conditions will continue to occur at the following intersections:

- South King Street/Beretania Street/University Avenue*
- University Avenue/Varsity Place*
- University Avenue/Dole Street*
- University Avenue/Sinclair Parking Lot*
- Dole Street/Wilder Avenue (Mitigation would result in the reduction of traffic flowing from the H-1 Freeway on-ramp, which is not recommended. Furthermore, the Dole Street traffic that experiences LOS F exhibits a relatively low demand due to further downstream obstructions and better alternative routes. Therefore, mitigation is not recommended.)
- Dole Street/Lower Campus Road*
- Dole Street/Saint Louis Heights Drive (While the southeast-bound left-turn currently experiences and will continue to experience LOS F during the AM

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and PM peak hours of traffic, the demand for this movement is relatively low, and would not warrant a Traffic Signal. Mitigation is not recommended.)

• Wai'alae Avenue/Saint Louis Heights Drive - Due to limited right-of-way, no geometric improvements can be made at this intersection.

While mitigation is proposed to address the above intersections with asterisks after them, the remaining intersections will be discussed below.

Dole Street/Wilder Avenue - The northbound approach to this intersection is a busy freeway off-ramp, whose vehicular flow should not be impeded to accommodate minor street traffic.

Wilder Avenue, in general, is congested downstream in the westbound direction during the AM and PM peak hours of traffic due heavy school traffic caused by Punahou and Maryknoll schools. Therefore, no mitigation is recommended for this intersection.

Dole Street/Saint Louis Heights Drive - While turning movement analysis indicates that the eastbound left-turn movement at this intersection will continue to operate at LOS F during the PM peak hour of traffic, this intersection was not observed to be problematic during the AM or PM peak hours of traffic. Furthermore, with only 25(45) vehicles making this turn during the AM(PM) peak hours of traffic, a traffic signal will not be warranted. No mitigation is recommended for this intersection.

Wai'alae Avenue/Saint Louis Heights Drive - This intersection currently operates at an observed LOS F during the AM and PM peak hours of traffic. However, due to limited right-of-way, no geometric improvements can be made at this intersection.

Specific Mitigation Measures for Future Traffic

As shown in Table 4-2, there is very little difference between existing LOS and the projected LOS. However, ATA recommends a number of mitigation measures (in two phases), as described below.

Phase I - Reconfigure the westbound approach to the University Avenue/Dole Street intersection to incorporate an exclusive left-turn lane, a shared left-turn/through lane, and an exclusive right-turn lane, with lane storage extending approximately 100 feet east of the University Avenue/Lower Campus Road intersection. This mitigation measure may necessitate the relocation of the historic Gateway structures located along University Avenue. The effect of Phase I would be to eliminate over-capacity conditions. However, the southbound left-turn movement would still experience LOS F during the PM peak hour of traffic.

^{*} Indicates that mitigation is proposed.

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Phase II - Reconfigure the northbound approach to the University Avenue/Dole Street intersection to incorporate three (3) exclusive through lanes and two exclusive right-turn lanes, the rightmost of which would directly connect with the H-1 Freeway westbound off-ramp. In conjunction with this, modify the Dole Street/Lower Campus Road intersection to incorporate one (1) eastbound through lane, an eastbound shared through/right-turn lane, and an exclusive right-turn lane. Note that these modifications could potentially necessitate the relocation of the existing monkeypod trees along University Avenue, and reduce the available parking within the Music Building Complex. Phase II, when implemented without Phase I, would produce a similar result as Phase I, in that over-capacity conditions would be eliminated, and that the southbound left-turn movement would continue to experience LOS F, while the eastbound and westbound approaches would experience LOS E during the PM peak hour of traffic.

Phase I & II - Analysis indicates that the effect of implementing Phases I and II in combination would improve the overall delay of the intersection from 73.1 (56.6) seconds during the AM (PM) peak hours of traffic to 38.8 (39.9) seconds, with all movements at the intersection operating at LOS E or better during both hour periods. It should be noted that at the Dole Street/Lower Campus Road intersection, the lane modification will reduce the number of lanes that drivers need to cross to enter the Lower Campus Road, thereby reducing capacity reductions caused by weaving movements.

ATA recommends that Phases I and II be implemented as a mitigation measure, while recognizing that the intent of this geometric augmentation would be to improve conditions for vehicles traveling northbound along University Avenue. Although vehicular flow will also improve in the westbound direction during the PM peak hour of traffic, such benefits would generally be realized locally, given that existing bottlenecks occur downstream at the following locations:

- University Avenue/H-1 Freeway eastbound on-ramp
- University Avenue/H-1 Freeway westbound on-ramp
- South King Street/Beretania Street/University Avenue
- Dole Street/Wilder Street
- University Avenue, south of Maile Way

Mitigation of these problems would require costly modifications, including improving congestion along the entire corridor. The H-1 Freeway, Beretania Street, and South King Street would all have to be widened to accomplish this. However, the implementation of the proposed rail transit system will ultimately reduce future vehicular traffic demand.

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Turning Movement Restriction - During field observations, it was noted that along South King Street, east of University Avenue, and University Avenue in the Varsity Area, vehicular flow was hampered by the allowing of left-turns into driveways and small side streets.

Varsity Area - Vehicles turning left from the southbound direction cause other vehicles to switch lanes to maneuver around them. Due to the lack of an acceptable gap in northbound traffic, these vehicles often cause those behind them to arrive at the South King Street/Beretania Street/University Avenue intersection after the signal indication has turned red. The resulting flow interruptions have major implications along University Avenue in this area, due to the fact that the current cycle length at that intersection is 170 seconds. Effectively, all of the vehicles impacted by this problem will be delayed by an additional two minutes, fifty seconds as the traffic signal cycles through all of its phases again. Operations at the University Avenue/Varsity Place intersection are also affected by this problem.

Similarly, in the northbound direction left-turns impede the flow of the approximately 1,000 vehicles (for both AM and PM peak hours of traffic) traveling in the northbound direction, sometimes reducing the upstream capacity of the South King Street/Beretania Street/University Avenue intersection.

South King Street – University Avenue to Humane Society - South King Street, east of University Avenue has become a bottleneck for eastbound traffic during the PM peak hour of traffic. It has been observed that vehicles traveling eastbound along South King Street are affected by vehicles making left-turns into driveways, and at the signalized intersection near the Seven Eleven/Aloha Gas station.

Based on the conditions described above, ATA recommends that a dialogue be initiated between community members and the City to assess the potential for left-turn prohibitions during the PM peak hour of traffic for:

- Northbound and southbound University Avenue traffic, south of Varsity Place, and north of King Street
- Eastbound South King Street traffic, east of University Avenue and west of the Humane Society.

It is recognized that the merit of this mitigation measure will have to be balanced with the needs of the local community and businesses.

It should be noted that should these prohibitions be implemented, they would not eliminate LOS F at the South King Street/Beretania Street/University Avenue intersection. However, they would improve the efficiency of the intersection and the capacity of University Avenue and South King Street in the area.

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University Avenue/Sinclair Library Driveway - While this intersection experiences a relatively low turning movement volume and operates at LOS B, the bus traffic that passes through the turnaround often have difficulty making the westbound left-turn out of the driveway. Therefore, ATA recommends that a traffic signal be installed to facilitate this movement. In conjunction with this, ATA recommends that the bus stop located along University Avenue, just north of Dole Street be relocated to the existing bus turnaround at this intersection.

University Avenue/Maile Way - Although analysis indicates that this intersection operates at LOS C (B) during the AM (PM) peak hours of traffic, existing operations have been observed to be worse, especially during the AM peak hour of traffic, where vehicles destined towards the Mid-Pacific Institute and St. Francis cause the downstream intersection (Ka'ala Street) to be overburdened. Currently, this intersection only provides a single lane at each approach, with no channelization (turning lanes). ATA recommends that a dialogue be initiated between community members and the City to assess the feasibility for widening the segment of University Avenue between Ka'ala Street and Maile Way to incorporate a second northbound lane. This lane would terminate at Ka'ala Street as an exclusive right-turn lane.

Traffic Signal Coordination along University Avenue and Dole Street/Lower Campus Road - All of the signalized intersections along University Avenue between Dole Street and Maile Way, and the Dole Street/Lower Campus Road intersection are within approximately 1,000 feet or less of each other. Therefore, in order to facilitate flow between these intersections, ATA recommends that the following intersections be coordinated:

- University Avenue/Maile Way
- University Avenue/Metcalf Street
- University Avenue/Sinclair Library Parking Lot (New Signal)
- University Avenue/Dole Street
- Dole Street/Lower Campus Road

Projected LOS With Mitigation Measures

Table 4-3 provides a summary of the projected traffic level of service after proposed mitigation measures in the Year 2017 at representative intersections.

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Table 4-3 Comparison of Existing and Year 2017 LOS (With and Without Mitigation Measures) at Representative Intersections

	Existing	Existing	YEAR 2017 W/O	YEAR 2017 W/O	YEAR 2017 W/ MITIGATION	YEAR 2017 W/ MITIGATION
	LOS -	LOS -	MITIGATION	MITIGATION	LOS – AM	LOS - PM
_					LOS – AIVI	LOS-PM
Intersection	AM	PM	LOS – AM	LOS - PM		
University	E	F	E	F	D	D
Avenue/						
Dole Street						
University	В	В	В	В	С	A
Avenue/						
Maile Way						
University	A	A	A	A	A	В
Avenue/						
Metcalf Street						
Dole	A	F	A	F	A	В
Street/Lower						
Campus Road						
Dole	В	В	В	В	В	В
Street/East-						
West Road						

<u>Traffic Impacts Associated with Implementation of the Proposed Project and the Rest of the Updated LRDP</u>

While the LRDP includes new parking structures, the number of students is not projected to increase as a result of these additions. Ultimately, as based on standard methods for generating trips for universities, this would mean that the number of vehicular trips generated by the implementation of the updated LRDP, including the proposed project, will remain the same. However, a redistribution of the existing trips will occur, in this case more heavily concentrating traffic at the University Avenue/Dole Street, Dole Street/Lower Campus Road, and Dole Street/East-West Road intersections. However, given the improvements recommended in Base Year 2017 Mitigation Measures, these intersections will continue to operate at LOS E or better and under capacity. As stated earlier, one caveat to this statement is that downstream conditions along University Avenue and subsequently the H-1 Freeway, Beretania Street, and South King Street will continue to experience congestion, and may therefore limit the incoming/outgoing capacity in the area. No improvements beyond those recommended in Base Year 2017 Mitigative Measures are recommended. Improvements at the Old Wai'alae Road Entrance/Exit and at the Varsity Place were investigated, and are generally not recommended.

No additional onsite parking for Gartley Hall will be included as part of the renovation project, parking associated with the project is accommodated within the overall campus parking system. Currently, loading facilities for Gartley Hall are located at the School

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of Architecture Building. The University intends to maintain usage of the School of Architecture's loading facilities to service Gartley Hall.

4.3 NOISE

Existing noise levels at and immediately adjacent to the proposed site mimic those typical of a campus with relatively longer periods of quiet, with periods of noise when students are changing classes. The nearest public elementary school is the University Laboratory School (approximately 1,500 feet away from the Gartley Hall).

Potential Impacts and Mitigation Measures

Construction activities for the renovation of the Gartley Hall will inevitably create temporary noise impacts. The building contractor may employ mitigation measures to minimize those temporary noise impacts including the use of mufflers and implementing construction curfew periods. Pursuant to Chapter 11-46, Hawai'i Administrative Rules, all project activities must comply with all community noise controls. The Mānoa Campus was not constructed all at once and has gradually developed. As each building was constructed, classes in the surrounding buildings presumably experienced the temporary inconvenience of louder construction noise during some classes. It is assumed that most students and instructors adapted to these temporary inconveniences. The closest elementary school is the University Laboratory School but buildings of the UH School of Education effectively attenuate noise from Gartley Hall. Probably more distracting noise sources for the University Laboratory School elementary school students are other students within the School as well as traffic along Metcalf Street and University Avenue.

Once in operation, the Gartley Hall will generate noise consistent with current operations. No mitigation measures are proposed as the noise generated as a result of the renovation represents no substantial change from current noise occurrences and will not impact the University Laboratory School.

4.4 AIR QUALITY

The State's good air quality is largely a function of the predominant tradewinds blowing from the northeast. The typical tradewind pattern blows man-made and volcanic pollutants out from metro Honolulu toward the ocean. However, during non-tradewind periods, man-made and volcanic pollutants tend to accumulate on island impacting visibility.

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Potential Impacts and Mitigation Measures

The University recognizes the potential for impacts to air quality during construction. This could occur from additional traffic generated by construction vehicles, machinery, and dust generated during construction.

An effective dust control plan will be implemented as necessary. All construction activities will comply with the provisions of Title 11, Chapter 59, HAR related to Ambient Air Quality Standards and Section 11-60.1-33, HAR related to Fugitive Dust. Measures to control dust during various phases of construction include:

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

As previously noted, the UH LRDP 2007 update has instituted a framework of sustainability guidelines as the basis to develop, evaluate and communicate the integration of sustainability in the development and operation of the UH Mānoa Campus. The Sustainability Guidelines from the LRDP address indoor environmental quality which address many indoor air quality issues. These were reproduced in Section 3.6 of this Environmental Assessment.

4.5 VISUAL RESOURCES

The proposed building renovation is located in the middle of the University campus surrounded by buildings similar in height and mass. The City and County of Honolulu's Primary Urban Center Development Plan does not recognize any view planes encompassing the construction site that requires consideration and accommodation.

Potential Impacts and Mitigation Measures

The dense nature of the University campus, and the proposal for a relatively modest addition is expected to be compatible with mass and height of surrounding buildings will not induce adverse impacts to any recognized view planes. From University

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Avenue (west of the site), the renovated Gartley Hall will likely to remain mostly obscured from view because of existing trees at the western end of Campus Road as well as by the existing School of Architecture building. Any improvements to the exterior of building along the southern or eastern sides will be highly visible from Campus Road or Dean Hall. From within the historic Old Quadrangle, the eastern end of Gartley Hall is obscured from view by existing Pink Tecoma (<u>Tabebuia pentaphylla</u>) trees. In addition, SHPD's review of the proposed plans for renovations and the University's own design review process will help ensure that the proposed renovation is architecturally compatible with surrounding structures. Because no visually adverse impacts are expected, no additional mitigation measures are proposed.

4.6 SOCIAL & ECONOMIC CHARACTERISTICS

According to the 2000 Census, the population of City and County of Honolulu numbered 876,156 individuals. The most recent American Community Survey conducted for City and County in 2006 by the Census Bureau accounted for 909,863 residents, representing a 4% increase in population. Approximately 19% of the City and County residents have obtained a bachelor's degree or higher. The City and County has 64.7% of its residents actively participating in the workforce, with the median household income reported to be \$51,914 per year.

The most densely populated urban area on Oʻahu and statewide, Honolulu is the State's center of commerce and industry. According to the American Community Survey of 2006, City and County of Honolulu residents are slightly older, more likely to have a college degree and a higher per capita income than residents of Hawaiʻi's other Counties. The proposed project site is located within the County Administrative District V which includes Kapahulu, Kaimukī, Pālolo Valley, St. Louis Heights, Mānoa, Mōʻiliʻili, McCully, Kakaʻako, Ala Moana and Makiki neighborhoods. These neighborhoods are largely residential with housing types ranging from single family dwellings, to low, mid- and high-rise multi-family dwellings. Institutional uses are scattered throughout these neighborhoods, with the University of Hawaiʻi, being the most dominant institutional use in the vicinity. Small commercial nodes service the neighborhoods, predominantly along arterial and collector streets.

Potential Impacts and Mitigation Measures

The proposed project will enhance the capacity for arts education and entertainment at the University of Hawai'i. Renovation and modernization of Gartley Hall will help to ensure that UH maintains a robust educational program, and continues to attract students from Hawai'i and mainland United States as well as international students. The University serves as an important economic driver for the local neighborhoods where students, faculty and administration staff utilize retail and commercial services. However, as the renovated Gartley Hall will supplement an existing facility, it is not

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expected to increase the number of O'ahu's residents. The scope of the construction project will contribute positively to the construction industry and the expanded facilities, including retail shops, may contribute more jobs for UH students and/or O'ahu residents.

4.7 INFRASTRUCTURE AND UTILITIES

4.7.1 Water System

The existing Mānoa Campus is served by the City's Board of Water Supply (BWS) system. In October 2007, Austin Tsutsumi & Associates, Inc. (ATA) prepared a report entitled: <u>Utility Systems Report, University of Hawaii at Manoa, Long Range Development Plan 2007 Update, (Category I), Manoa, Honolulu, Hawaii.</u> ATA reported that there are several water meters on campus that connect to the BWS system. The two main meters on the central campus are located near Burns Hall on Dole Street and just north of Kennedy Theatre on East-West Road. ATA reported that since the last LRDP, some of the water lines that were inadequate for fire flow have been improved. These areas include the Teachers College/Lab School and Hemenway Hall. In addition, there were a few fire hydrants added to the Central Campus. Water for Gartley Hall is being provided from the Board of Water Supply's (BWS) six-inch "high service" line that traverses the campus.

Potential Impacts and Mitigation Measures

Water for the proposed project will come from the existing water lines serving the Gartley Hall. The prevailing water pressure of 135 psi (pounds per square inch) is too high and needs to be reduced to 80 psi. The service line size needs to be evaluated for adequacy once the functions of the renovated structure are confirmed. During the preconsultation process, the City and County of Honolulu Board of Water Supply (BWS) commented that based on current data, the existing water system is adequate to accommodate the proposed development. BWS also commented that it reserves the right to change its assessment and the final decision on the availability of water will be confirmed when the building permit application is submitted for BWS' approval. In response to BWS' comments, the University will be required to pay the BWS Water System Facilities Charges for resource development, transmission and daily storage. Also, the University acknowledges that on-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department. Finally, the University acknowledge that BWS' Cross-Connection Control and Backflow Prevention requirements will be fulfilled prior to the issuance of the building permit.

ATA notes that although the additional buildings proposed in the LRDP will be increasing the water demand for UHM, UHM-proposed water conservation efforts should actually decrease the total water demand for UHM. Since 2002, the guiding

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principle of the University of Hawai'i is sustainability – living in ways that meet the campus' present needs without limiting the potential of future generations to meet their needs. ATA reported that as part of this philosophy, the University of Hawai'i and the Honolulu Board of Water Supply signed a memorandum of understanding in 2003 to establish a program for reducing water and wastewater use at the Mānoa Campus. The goal of the program is reportedly to reduce water consumption by 10 percent annually. According to ATA, a Water Management Plan (WMP) is planned to be developed and adopted by the Facilities Planning and Management Office (FPMO) to help incorporate and evaluate UHM's water conservation efforts. ATA reported that the WMP will consist of the following:

Analysis of the existing water system on campus

- Sub-meters There are a minimal number of water meters on the Mānoa Campus. According to FPMO, the master water meter near East-West Road serves over half of the campus. This makes it difficult to determine the optimal locations for improvements since there is no way of determining individual water uses. Sub-meters throughout campus could be installed to better monitor the water usage on campus.
- Determine the amount of fixture units and the daily demands for each building.
- Run a hydraulic model of the water system to check for adequate water supply and pressures.

Mitigation Measures

- Landscape and Irrigation The water from the Quarry as discussed above could provide a large part of the irrigation water for the Mānoa Campus. In addition to using this resource, the landscaping on campus should use native or adapted plants to reduce or eliminate irrigation requirements. The irrigation controllers should also be high-efficiency equipment and/or climate-based controllers as discussed in the Sustainability Guidelines.
- Low-flow plumbing fixtures The Mānoa Campus is currently renovating their campus buildings to use low-flow fixtures. This should continue through the 5-10 year period, if not already completed. In addition, all new buildings should be constructed with low-flow fixtures.
- Education Research, curriculum and community service projects for water conservation are currently taking place at the University and should continue through this LRDP.

Monitoring

• The water usage should be monitored on a regular basis to determine if the mitigation measures are working. This can also help determine trouble spots in the buildings or water system.

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4.7.2 Wastewater System

Gartley Hall's sanitary system is connected to the municipal system near University Avenue and Metcalf Street.

Potential Impacts and Mitigation Measures

The sewer system appears to be adequate to accommodate the needs of the renovated building. A sewer connection application is required with the Department of Planning and Permitting, Wastewater Branch, to determine adequacy of existing sewer lines.

4.7.3 Drainage System

The majority of the development site is impervious surface associated with the Gartley Hall building rooftop, sidewalks and stairways. During the site work conducted in December 2000, no serious drainage problem was observed around the vicinity of Gartley Hall. However, since the occurrence of the major flooding (October 30, 2004) that affected the Mānoa campus several years ago, the surrounding areas have encountered more drainage problems. It was observed that below-grade water drainage may be responsible for the sinking of certain parts of the basement and exacerbated the underlying expansive soils.

Potential Impacts and Mitigation Measures

A small portion of the existing lawn and landscaping around Gartley Hall will be replaced by the proposed renovation and addition of an exterior elevator structure, representing a nominal loss in pervious surfaces that likely infiltrated a very small volume of storm water. The small increase in impervious surface area over existing conditions will generate a nominal increase in storm water runoff. Gartley Hall will be tied into the University's existing storm water management system which can accommodate the additional impervious surfaces. The result is no additional storm water runoff as a result of the proposed project from the campus onto off-campus properties. Site erosion control measures and Best Management Practices will be utilized to reduce pollution from construction activities prior to entering the City and County's drainage system. Other permanent mitigation measures such as porous paving and storm water separators with media filters may be used to reduce the amount of runoff and improve storm water quality, as discussed in the LRDP's Sustainability Guidelines.

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4.7.4 Electrical and Communications Systems

Existing underground electrical lines serve the Gartley Hall via the University's primary electrical distribution system. Telecommunication services are provided from the University's fiber network and telephone switch.

Potential Impacts and Mitigation Measures

Existing underground electrical lines serving the Gartley Hall will be extended into the renovated building. Similarly, telecommunication services will be provided from the University's fiber network and telephone switch.

During the pre-consultation process, HECO reported that it has no existing facilities within the subject property. The University's civil and electrical engineering consultants will continue to coordinate with HECO's Engineering Department as plans progress. As requested by HECO, development plans will show all affected HECO facilities, and address any conflicts between the proposed plans and HECO's existing facilities. Pre-final development plans will be forwarded to HECO for review. Should the relocation of or additional facilities be required, a formal request will be submitted and coordinated through the appropriate HECO department(s).

The proposed project will not have any significant adverse impact on existing electrical and communication systems. As previously noted, since 2002, the guiding principle of the University of Hawai'i is sustainability – living in ways that meet the campus' present needs without limiting the potential of future generations to meet their needs. The UH LRDP 2007 update has instituted a framework of sustainability guidelines as the basis to develop, evaluate and communicate the integration of sustainability in the development and operation of the UH Mānoa Campus. The Sustainability Guidelines from the LRDP state:

ENERGY EFFICIENCY

Energy efficiency is a cornerstone of any sustainable building project. Power generation and use of energy are major contributors to air pollution and utility costs. According to the School of Architecture, UHM consumes approximately 120 million KWhr/year, which equals to about 6,000 KWhr/Student/Year. Improving energy efficiency and using renewable energy sources are effective ways to reduce environmental and economic impacts associated with excessive energy use and fossil fuel energy use. Reduction of energy use also has the benefits of lowering utility expenses.

Examples of LEED Criteria and Strategies:

• Design the building envelope, HVAC, lighting and other systems to maximize energy performance. Establish the minimum level of energy efficiency for the proposed building and systems.

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- Use a computer simulation model to assess energy performance and identify the most cost-effective energy efficiency measures.
- Specify new HVAC equipment that uses no CFC refrigerants and conduct an inventory to identify equipment that uses CFC refrigerants and provide a replacement schedule for these refrigerants to reduce ozone depletion.
- Assess the project for non-polluting and renewable energy potential including solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies.
- Verify that the building's energy related systems are installed, calibrated and perform according to the project requirements, basis of design and construction documents. Develop a Measurement & Verification Plan to evaluate building and/or energy system performance, such as metering equipment, tracking of performance and monitoring.
- Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.
- Minimize use of air-conditioning with natural ventilation design...

4.7.5 Solid Waste

The renovated Gartley Hall will likely generate solid waste volumes similar to that of the current facility.

Potential Impacts and Mitigation Measures

The proposed project will generate solid waste during construction. The contractor will be required to dispose of all waste in compliance with Department of Environmental Management requirements.

The University will incorporate provisions for the expanded facility into the existing solid waste management plan. As previously noted, since 2002, the guiding principle of the University of Hawai'i is sustainability – living in ways that meet the campus' present needs without limiting the potential of future generations to meet their needs. The UH LRDP 2007 update has instituted a framework of sustainability guidelines as the basis to develop, evaluate and communicate the integration of sustainability in the development and operation of the UH Mānoa Campus. The Sustainability Guidelines from the LRDP state:

MATERIALS AND RESOURCES

Facilitate the reduction of waste that is hauled to and disposed of in landfills by making it convenient to recycle. Reduce construction waste by extending the life cycle of existing building stock, which reduces environmental impacts of new buildings as they relate to materials manufacturing and transport. Divert construction, demolition and land-clearing debris from disposal in landfills by redirecting recyclable resources back to the manufacturing process. Responsible construction waste management can lower costs

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through material efficiencies in design and disposal fees. Use environmentally appropriate materials in design and construction of infrastructure and buildings, and increase demand for building materials and products that are sustainably extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

Examples of LEED Criteria and Strategies:

- Provide convenient facilities for recycling collection. Proper design of collection areas is critical to making recycling easy, sanitary and useful.
- Consider reuse of existing, previously occupied buildings, including structure, envelope and interior non-structure elements.
- Adopt a construction waste management plan and recycle and/or salvage at least 50-75% of non-hazardous construction and demolition debris.
- Use building materials or products that have been sustainably extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site.
- Use rapidly renewable building materials and products (made from plants that are typically harvested within a ten-year cycle or shorter, such as bamboo, wool or cotton).
- Use a minimum of 50% of wood-based materials and products, which are certified in accordance with the Forest Stewardship Council's(FSC) Principles and Criteria, for wood building components

Solid waste disposal will be in accordance with the guidelines set forth by the county's Department of Environmental Services.

4.8 PUBLIC SERVICES AND FACILITIES

Police Protection

The site is located within Honolulu Police Department District 7.

Fire Protection

The Mānoa Fire Station and McCully Fire Stations are each within a mile of the University of Hawai'i Campus. An existing municipal fire hydrant along University Avenue and another on Campus Road are the closest ones to Gartley Hall. The BWS standards established the required fire flow of 2,000 gallons per minute with 20 psi residual pressure.

Health Care Services

On campus, near the guard station on East-West Road is the University Health Services Mānoa (UHSM). UHSM is a unit within the Office of Student Affairs under the Vice Chancellor for Students. It was established in 1932 and has been at its present location, near project site, since 1964. The UHSM is staffed by physicians, nurse clinicians, nurses, and other support staff. A wide range of medical services and programs are offered. These include the General Medical Clinic, the Women's Health Clinic, Sports

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Medicine, dermatology, pharmacy, clinical laboratory, student training, employment and volunteer opportunities.

Although its primary service population are the students of UH Mānoa, many services are also available to faculty and staff members, and students from other campuses. Its hours are limited to normal business hours. Kapi'olani Medical Center, which includes emergency services, is located at 1319 Punahou Street, is less than a mile from the University of Hawai'i campus.

Recreational Facilities

Recreational facilities near the Gartley Hall include on-campus recreational opportunities as well as City facilities such as Kānewai Community Park, Mō'ili'ili Park, and Old Stadium Park.

Schools

A number of public and private elementary, middle and high schools are located in the vicinity of the UHM campus including University Laboratory School, Our Redeemer Elementary School, Lutheran High School, Mid-Pacific Institute, Hōkūlani Elementary School and Noelani Elementary School.

Potential Impacts and Mitigation Measures

The University does not anticipate the proposed project will generate an increased demand on existing public services as the proposed project just involves the renovation of an existing building. Comments received during the pre-consultation and Draft EA public review period from the Police Department indicate that the Department does not anticipate the renovation of Gartley Hall to have any significant impact on police operations (Appendix A and B).

Civil and appropriate construction plans will be provided to Honolulu Fire Department for review to ensure that all fire, life and safety requirements are satisfied. A new fire hydrant near the center of Gartley Hall should be added on Campus Road (which will be converted into a secondary pathway parallel to the proposed East-West Mall, serving only service and maintenance vehicles per recommendations in the LRDP). The fire hydrant placement and the Fire Department access road requirements should meet the requirements of the Honolulu Fire Department as well as the 2003 International Building Code (IBC) that was adopted by the City and County of Honolulu in 2007. During the Draft EA public review period, the Honolulu Fire Department wrote that it "has no objections to the proposed project."

There is a need to replace and upgrade the fire alarm systems within Gartley Hall to meet new code requirements. This may consist of manual pull stations, horns, flashing lights in all common use areas and the monitoring of duct smoke detectors. As a minimum, provide portable fire extinguishers in accordance with the National

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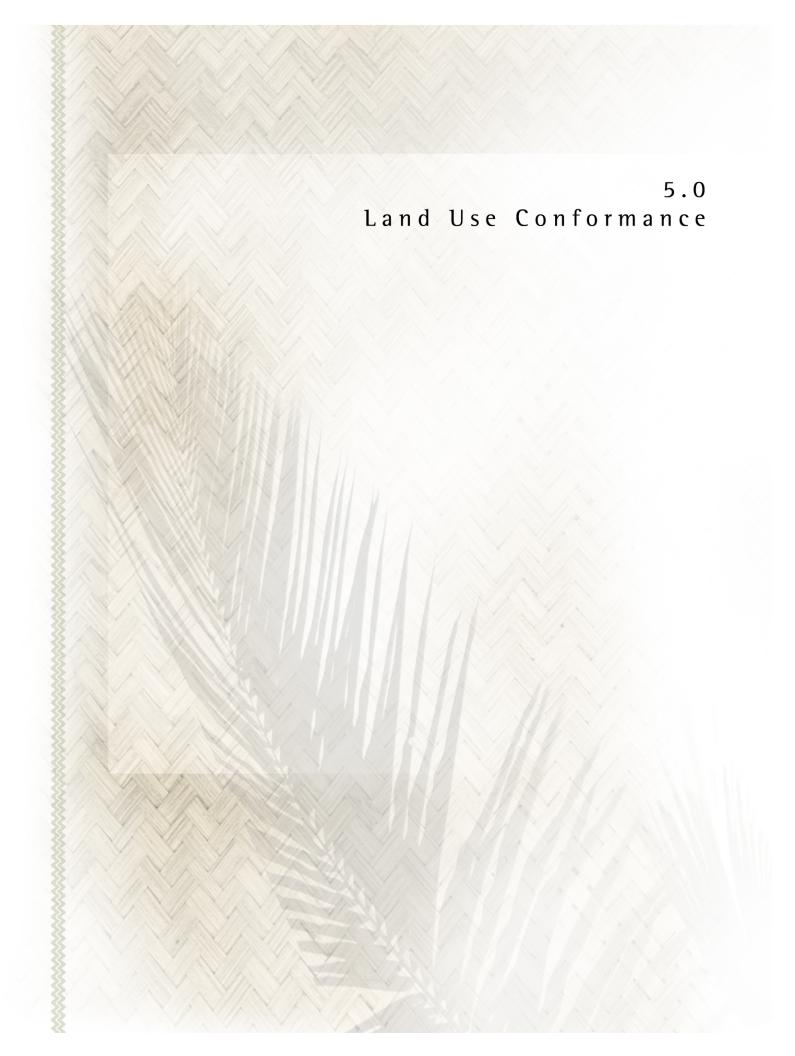
Association Fire Protection Association standards for portable fire extinguishers (NFPA 10).

At the present time, Gartley Hall has no automatic fire sprinkler system. A standpipe system was also not observed. A wet pipe fire sprinkler system is recommended to take advantage of lower insurance rates for buildings with automatic fire sprinkler systems. The sprinkler system could be designed for light hazard rating for typical office buildings.

The proposed use is not anticipated to create any additional demand on health care facilities, recreational facilities or schools.

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5.0 LAND USE CONFORMANCE

State and City and County of Honolulu land use plans and policies and required permits and approvals relevant to the Gartley Hall Renovation are described below.

5.1 STATE OF HAWAI'I

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

The State Land Use Law (Chapter 205, HRS), establishes the State Land Use Commission (LUC) and authorizes this body to designate all lands in the State into one of four districts: Urban, Rural, Agricultural, or Conservation. These districts are defined and mapped by the State Land Use Commission in order to ensure compatibility with neighboring land uses and protection of public health.

The Gartley Hall Renovation is located within the State Urban District (Figure 9).

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

The Coastal Zone Management Area, as defined in Chapter 205A, HRS, includes all the lands of the State. Therefore, the proposed Gartley Hall Renovation lies within the Coastal Zone Management Area.

The Coastal Zone Management (CZM) Program aims to provide recreational opportunities, protect historic resources, protect scenic and open space resources, protect coastal ecosystems, provide facilities for economic development, reduce hazards, and manage development. Program objectives and applicability to the proposed Gartley Hall Renovation are discussed below:

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

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

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

- (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
- (ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds,

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- and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;
- (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
- (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
- (v) Ensuring public recreational uses of County, State, and Federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;
- (vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
- (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and
- (viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and County authorities; and crediting such dedication against the requirements of section 46-6.

Discussion: The proposed Gartley Hall Renovation will be located inland, away from the shoreline (approximately 1.7 miles from the nearest coastline); therefore, it is anticipated that there will be no effect on existing coastal or inland recreational resources.

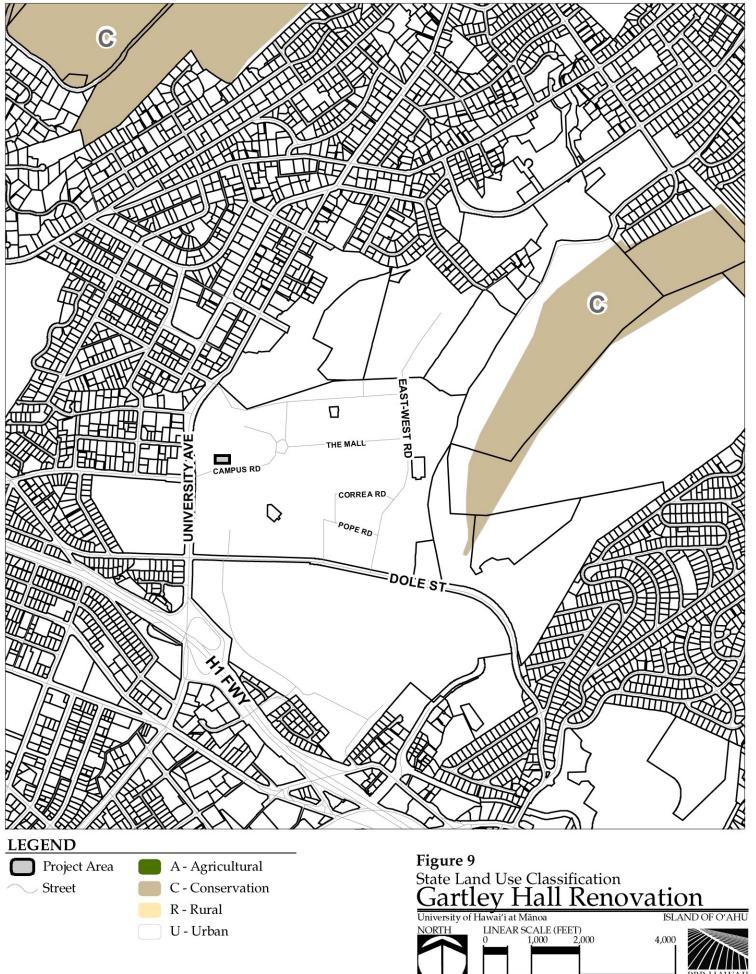
HISTORIC RESOURCES

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

Policy A: Identify and analyze significant archaeological resources;

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

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



Source: State Land Use Commission Disclaimer: This graphic has been prepared for general planning purposes only.

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Discussion: Due to the extensive disturbance this site has experienced for development and subsequent redevelopment, it is unlikely that subsurface archaeological or cultural resources are present. Should any archaeological or cultural remains be encountered during construction, all work in the immediate vicinity of the find will cease and the State Historic Preservation Division will be contacted for establishment of appropriate mitigation in accordance with Chapter 6E, Hawai'i Revised Statutes.

The State Historic Preservation Division (SHPD) lists Gartley Hall, and the open expanse of lawn mauka (and north of) referred to as the Old Quadrangle, on the Hawai'i Register of Historic Places. Since Gartley Hall is considered historic, the visual aspects of the open space and the external design of the historic buildings around the Quadrangle are to be preserved to maintain the overall historic ambience.

SCENIC AND OPEN SPACE RESOURCES

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

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

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

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

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

Discussion: The proposed Gartley Hall Renovation will be located inland, away from the shoreline; therefore, it is anticipated that there will be no effect on the quality of the coastal scenic resources.

COASTAL ECOSYSTEMS

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

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

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

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

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

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

Discussion: Best Management Practices (BMPs) will be employed during construction to reduce erosion of soils and fugitive dust during construction. Controlling runoff particularly will ensure that the construction will not increase inputs of sediment into Mānoa Stream. Since the Gartley Hall is located nearly two miles from the ocean; it is anticipated that over the long term there will be no effect on the quality of the coastal ecosystems.

ECONOMIC USES

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

Policy A: Concentrate coastal dependent development in appropriate areas;

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

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

- (i) Use of presently designated locations is not feasible;
- (ii) Adverse environmental effects are minimized; and
- (iii) The development is important to the State's economy.

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Discussion: The Gartley Hall Renovation contributes to Hawai'i's economy through the improvement of a public higher educational facility. The proposed renovation project is not dependant on coastal resources and therefore is located away from the shoreline on the University campus.

COASTAL HAZARDS

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

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

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

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

Policy D: Prevent coastal flooding from inland projects.

Discussion: The proposed Gartley Hall Renovation location nearly two miles inland from the coastline virtually negates any potential detriment to the quality of coastal ecosystems as a result of construction.

MANAGING DEVELOPMENT

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

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

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

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

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Discussion: Due to the Gartley Hall's inland location from the shoreline, it should not be considered a "significant coastal development." Its benign location relative to the coastline should not require an involved public participation process concerning coastal effects, although this EA provides an opportunity for input.

PUBLIC PARTICIPATION

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

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

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

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

Discussion: The project's mauka location, and distance from the shoreline provides a difficult segue toward relevant discussions on coastal zone management. This Environmental Assessment provides a means for public input.

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

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

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

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

Discussion: The proposed Gartley Hall Renovation will be located nearly two miles from the ocean. Due to the project site's relatively far distance from the shoreline, no adverse impact to area beaches is anticipated.

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MARINE RESOURCES

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

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

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

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

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

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

Discussion: The proposed Gartley Hall Renovation will be located nearly two miles from the ocean. Due to the project site's relatively far distance from the shoreline, no adverse impact to area marine resources is anticipated.

5.1.3 Hawai'i State Planning Act, Chapter 226, Hawai'i Revised Statutes

The Hawai'i State Plan, Chapter 226 HRS (2007) provides guidelines for the future growth of the State of Hawai'i. The Hawai'i State Plan identifies goals, objectives, policies, and priorities for allocating the State's resources, including public funds, services, human resources, land, energy, and water. The plan was enacted to achieve "a desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people." Chapter 226 HRS (2007).

Discussion: Planning objectives outlined in Chapter 226 support the renovation of the Gartley Hall. Section 226-21 relating to education identifies supporting personal development of all groups in a broad range of pursuits. The renovation of the University of Hawai'i's Gartley Hall is consistent with the State's goals by directly providing education and training to future psychologists, and indirectly, by the counseling and treatment the psychologists will give to others in the community.

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5.2 CITY AND COUNTY OF HONOLULU PLANS

5.2.1 O'ahu General Plan

The O'ahu General Plan is the policy document for the long-range development of the Island of O'ahu. The O'ahu General Plan is a statement of general conditions to be sought in the 20 year planning horizon and policies to help direct attainment of the plan's objectives.

Specific General Plan goals and policies applicable to the proposed Gartley Hall Renovation project are discussed below.

Health and Education

Objective C – To make Honolulu the center of higher education in the Pacific. *Policies*

- (1) Encourage continuing improvement in the quality of higher education in Hawaii.
- (2) Encourage the development of diverse opportunities in higher education.

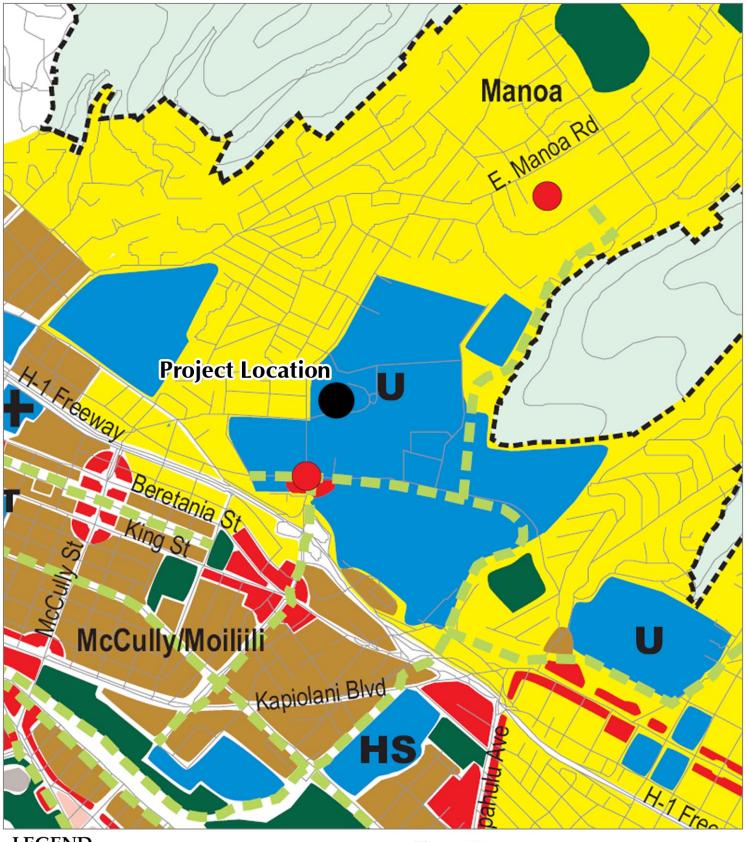
Discussion: The Gartley Hall Renovation supports these policies by renovating and enlarging an established facility for higher education.

5.2.2 Primary Urban Center Development Plan

The City and County of Honolulu has adopted the Primary Urban Center Development Plan as one of eight community-oriented plans to guide public policy, investment and decision making through the 2025 planning horizon. The document contains policies specific to Honolulu's primary urban center. These policies are then implemented through ordinances such as the Land Use Ordinance (zoning code).

The Primary Urban Center Development Plan includes a policy to, "support the development of a high quality educational system of schools and post-secondary institutions that increase the attractiveness of the Primary Urban Center as a place to live and work..."

Discussion: Renovation and modernization of the Gartley Hall at the University of Hawai'i's main campus at Mānoa contributes to the continuation of a vibrant, campus community in the heart of the city (Figure 10).



LEGEND



College/University
Hospital/Medical Center
Intermediate School (State)
High School (State)
Small Boat Marina
Harbor

Airport

Figure 10
City and County of Honolulu
Primary Urban Center Development Plan
Gartley Hall Renovation



NOT TO SCALE



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5.2.3 Land Use Ordinance

The Land Use Ordinance implements the goals and objectives of the Oʻahu General Plan and the Primary Urban Center Development Plan. All lands within the City and County of Honolulu are zoned into specific districts. According to the Department of Planning and Permitting, the project site is zoned Residential (R-5). According to Sec. 21-3.70 of the Land Use Ordinance (LUO):

The purpose of the residential district is to allow for a range of residential densities. The primary use shall be detached residences. Other types of dwellings may also be allowed, including zero lot line, cluster and common wall housing arrangements. Nondwelling uses which support and complement residential neighborhood activities shall also be permitted.

According to the LUO Master Use Table (Table 21-3), universities and colleges are permitted in all zoning districts regulated by the City and County of Honolulu with Plan Review Use (PRU) approval.

Discussion: The Gartley Hall Renovation is consistent with the purposes of the R-5 land use district in that it is part of a long-established university campus (Figure 11). During the Draft EA public review period, the Department of Planning and Permitting wrote that "The University is currently operating under PRU No. 88/PRU-3 (Resolution No. 89-411, CD-2), which was approved on December 13, 1989, for the Five-Year Master Plan for the expansion of the University of Hawaii Manoa campus." The *Long Range Development Plan, University of Hawaii, Manoa Campus 1987* (LRDP), which was included as part of Resolution No. 89-411, CD-2, shows Gartley Hall as an existing building. In addition, the Department of Planning and Permitting wrote that "the proposed project involves the renovation of an existing building and could be allowed under the existing PRU permit." The campus gives the Mānoa and Mō'ili'ili neighborhoods their identity and the proposed renovation of a historic building will serve to contribute to the vitality of these communities.

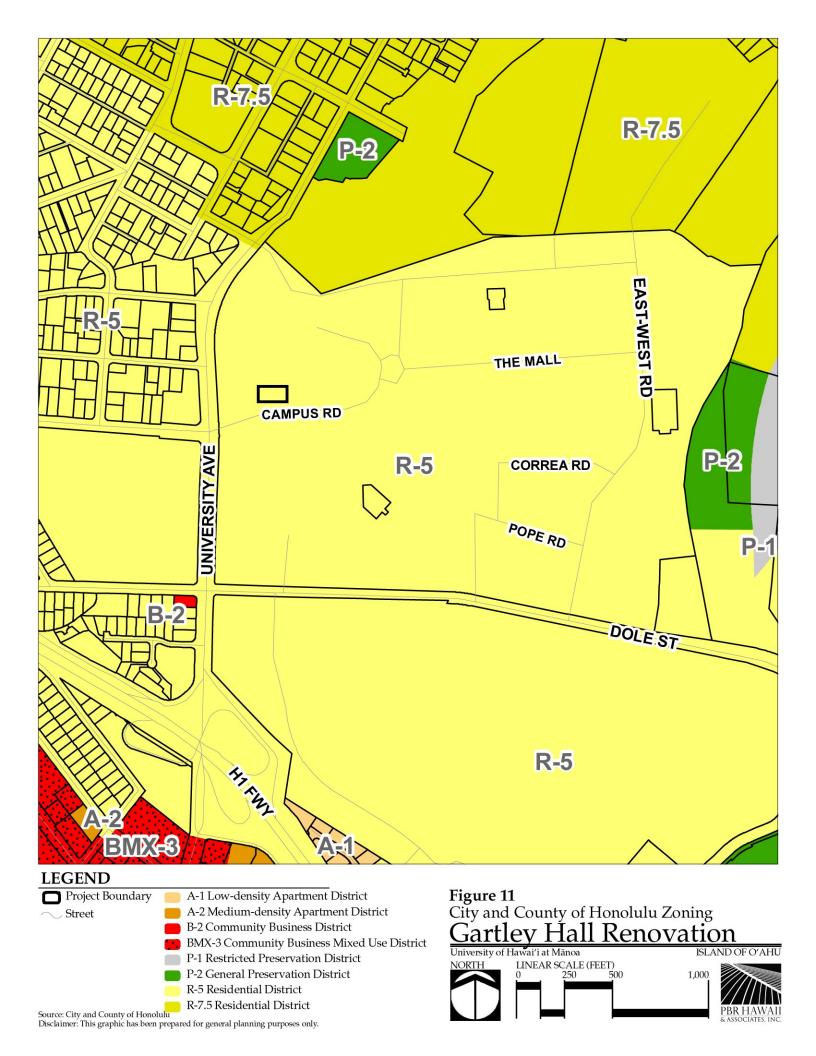
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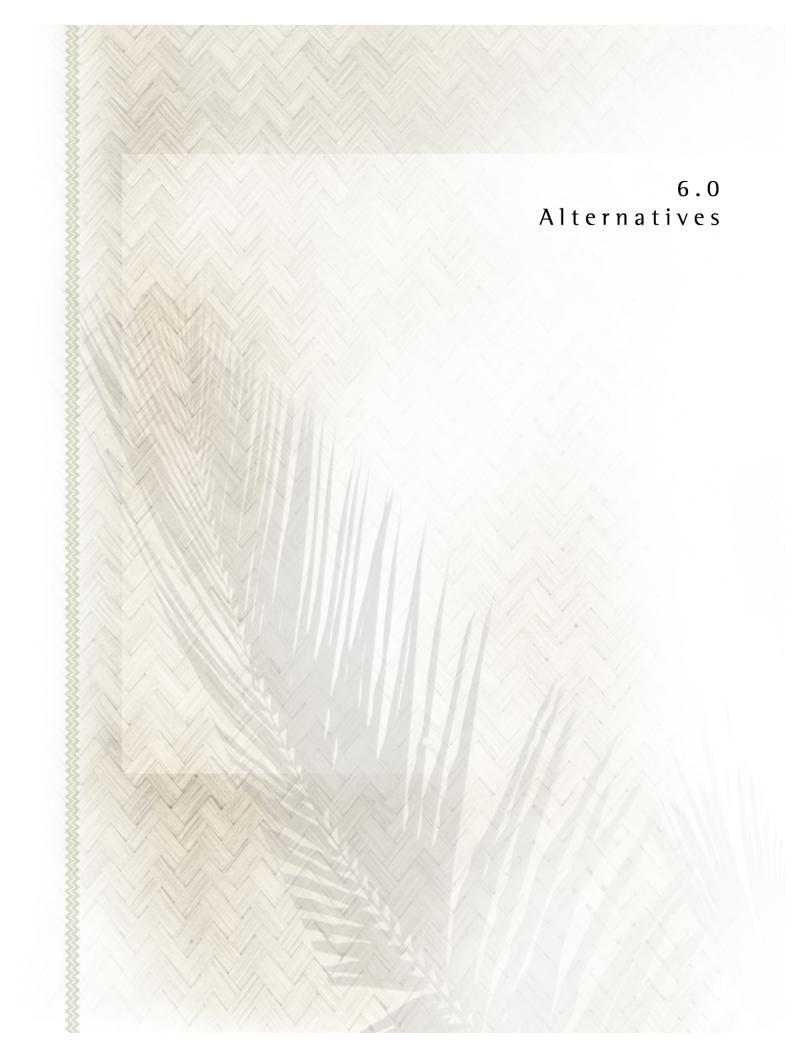
5.3 LIST OF REQUIRED PERMITS AND APPROVALS

Required permits and approvals are outlined in Table 5-1, below.

Table 5-1 Required Permits and Approvals

AGENCY	PERMIT/APPROVAL	
STATE OF HAWAI'I		
Department of Health	• NPDES	
Department of Land and Natural	Section 6E, Hawai'i Revised	
Resources, Historic Preservation Division	Statutes (HRS) Review	
CITY AND COUNTY OF HONOLULU		
Department of Planning and Permitting	Building Permit	





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6.0 ALTERNATIVES

In compliance with the provisions of Section 11-200-17(f), HAR relating to Environmental Impact Statements, an environmental assessment must discuss potential alternatives to the proposed action.

The alternatives considered include:

6.1 NO ACTION

The no-action alternative is no change to the existing building. Under this alternative Gartley Hall Renovation would not be renovated. Gartley Hall is a historic building which is in need of: environmental remediation, structural modifications, improvements for greater accessibility, as well as greater sustainability features/measures.

6.2 ALTERNATIVES

As noted in Section 4.1.1 of this Environmental Assessment, while much of the proposed renovation will occur in the interior of the building, to address the shortfall of access to the second floor of the building, an elevator lobby is required. The new elevator lobby could be located within the structure, but that would mean the degradation of the interior architectural features and the loss of usable space. Due to the lack of as-built structural data, there is also concern that the building's overall structural integrity may be compromised.

Since the start of the project, several alternatives were explored and tested for feasibility and are compiled below. The evaluation of alternatives took into consideration the most feasible location of the elevator lobby taking into account the impact to the historic aspects of the structure and the accessibility and circulation of the renovated building. The building has several potential locations outside of the structure for a new elevator lobby. These alternatives are described in greater detail below:

Alternative A. In this alternative, a ramp facing the south side would provide the required ADA access to the building. An interior elevator would connect all the floors of the building. Both the proposed elevator and fire stairs are within the existing building envelope. The gross area is estimated at 26,880 square feet (SF) with the mechanical equipment located in the basement. This alternative is not deemed desirable because it will lose much of the usable space and may compromise the structural integrity of the building by removing interior floor slabs.

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Alternative B. The new addition would be located on the east side of Gartley Hall facing Dean Hall. Both the proposed elevator and one of the fire stairs would be located in this new addition, and will allow the open stairway on the School of Architecture side of the building to remain without being enclosed. This alternative would allow for a possible future connection with Dean Hall, however it would be a complicated connection and may not happen for many years. Also it is a more visible side of Gartley Hall. The estimated gross area is 30,000 SF.

Alternative C. In Alternative C, the elevator lobby would be a new addition located at the rear of Gartley Hall adjacent to the existing Campus Road. The ADA entry is from the rear. The gross area in this alternative is estimated at 28,200 SF, excluding the penthouse where the mechanical spaces will be located. This alternative conflicts with the existing sewer main located parallel to Campus Road and therefore deemed undesirable.

Alternative D. This alternative locates the elevator lobby and second fire stairs on the west side of Gartley Hall facing the School of Architecture Building. The estimated gross area is also 30,000 SF and follows the precedent set in Hawai'i Hall for attaching the addition at the more discreet longitudinal end of a historic structure. In meetings with SHPD since the publication of the Draft EA, Alternatives A or D are preferable to Alternatives B and C.

7.0 Findings, Supporting Reasons, and Anticipated Determination

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7.0 FINDINGS, SUPPORTING REASONS, AND ANTICIPATED DETERMINATION

To determine whether the Gartley Hall Renovation may have a significant impact on the physical and human environment, all phases and expected consequences of the proposed project have been evaluated, including potential primary, secondary, short-range, long-range, and cumulative impacts. Based on this evaluation, the Approving Agency (University of Hawai'i at Mānoa) has issued a Finding of No Significant Impact (FONSI) for the Gartley Hall Renovation. The supporting rationale for this anticipated finding is presented in this chapter.

7.1 PROBABLE IMPACT, INCLUDING CUMULATIVE IMPACTS

Cumulative impacts are impacts on the environment that result from the action when added to other past, present, and foreseeable future actions by other agencies or persons. As discussed throughout this document, the University has prepared an update of the Long Range Development Plan (LRDP) to guide campus development in the next five to ten years. Assumed cumulative impacts could be those related to increased traffic and greater demand on water, sanitary sewer and storm drainage capacity. However, the projects outlined in the LRDP are based on current space and activity needs on campus. They are not based on any anticipated increase in enrollment during the five to ten year planning horizon.

One of the major themes in the current LRDP is Environmental Sustainability. The LRDP Design Guidelines emphasize that structures further resource conservation through energy efficiency, water conservation, recycling and other environmentally sensible practices. Ostensibly, the design guidelines' environmental sustainability theme will result in renovations that make buildings more efficient, improve storm water conveyance practices and encourage alternative transportation. In addition, all new buildings will be subject to an Environmental Assessment and the development of the projects will include appropriate mitigation measures to address any impacts.

Based on the fact that the University's LRDP looks to replace and renovate existing structures using environmentally sensible design and construction, it is assumed that the cumulative impacts will be minimal.

Social-economic impacts resulting from the proposed projects are anticipated to be beneficial. Construction generates employment and economic opportunities. Renovation of the Gartley Hall will allow the University of Hawai'i to continue to provide quality education. Overall, the net cumulative impact is expected to have a positive effect on the campus, the Mānoa neighborhood and greater Honolulu.

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Also currently proposed is the Performing Arts Facility, located mauka of Correa Road between the existing Kennedy Theatre, Keller Hall and Physical Science Building. Since as far back as 1987, the University has contemplated a parking structure behind Kennedy Theatre and an "addition" to the Kennedy Theatre (University of Hawai'i Mānoa Long Range Development Plan (December 1987). In 2007, The University of Hawai'i Mānoa Long Range Development Plan (LRDP) was updated to reflect current and upcoming educational priorities. Future buildings and projects are projected into the plan as well as several new "major themes" through a process of consultation with campus administration, students, faculty and community members. The LRDP utilizes the University's Capitol Improvement Program to project upcoming development projects.

The Performing Arts Facility site is approximately 1.6-acres immediately behind the existing Kennedy Theatre and currently used as a visitor parking area. The proposed expansion includes additional studio, rehearsal, classroom, shops, performance and theatre spaces. The addition will also partially wrap around the existing theatre. Preliminary plans call for a six-story structure with a basement including approximately 60,000 square feet of net program area, and approximately 480 parking stalls. As envisioned in the University's Long Range Development Plan, the new parking structure will be integrated with the expanded theatre facilities. The result will be a larger performing arts center and over three times the current on-site parking capacity.

7.2 SIGNIFICANCE CRITERIA

Based upon the previous information presented in this document the proposed permitting and construction of the Gartley Hall Renovation will likely have no significant environmental impacts. This determination is based upon the Significance Criteria outlined in Chapter 343, HRS, as amended and Title 11 Chapter 200 HAR 1996, discussed below.

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

The site's status as an existing building, plus prior land disturbance suggests that the site is absent any resources potentially subject to irrevocable loss as a result of construction.

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

The Gartley Hall Renovation will not curtail the range of beneficial uses of the environment as the site is currently developed.

UNIVERSITY OF HAWAI'I AT MĀNOA FINAL ENVIRONMENTAL ASSESSMENT

(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 Environmental Policies enumerated in Chapter 344, HRS, and NEPA promote conservation of natural resources, and an enhanced quality of life for all citizens. The proposed Gartley Hall Renovation will not significantly impact natural resources due to the fact that the site is already developed with a building that is proposed to be renovated.

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

The Gartley Hall Renovation will positively influence social welfare by enhancing higher education opportunities in the arts.

(5) Substantially affects public health;

The potential impacts related to noise, air or water quality during construction will be addressed through construction management practices in compliance with Federal, State and County requirements. The University's self-imposed mandate in the LRDP to build sustainably will help to ensure that the renovated building will not negatively affect public health during its operation.

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

The University anticipates no increase in student population as a result of the Gartley Hall renovation. The renovation is proposed to address needs at the current and planned enrollment levels.

(7) Involves a substantial degradation of environmental quality;

No substantial environmental degradation is anticipated. The University has committed itself to a development theme of environmental sustainability, adopted into the LRDP design standards. The project will need to meet minimum applicable statutes and regulations as well as the more stringent self imposed sustainability requirements.

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

The proposed action will not have any substantial negative secondary impacts on the environment. Renovation of Gartley Hall is consistent with the University's Long Range Development Plan, a public document developed with input by University stakeholders, including the community. Renovation of Gartley Hall will not commit

UNIVERSITY OF HAWAI'I AT MĀNOA FINAL ENVIRONMENTAL ASSESSMENT

the University or the City and County of Honolulu public facilities to any other larger actions, and will not generate any additional actions having a cumulative effect on the environment.

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

The renovation of Gartley Hall will occupy a site that is already committed to a structure. The site contains no habitat for rare, threatened or endangered plant or animal species.

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

<u>Air Quality:</u> No State or Federal air quality standards will be violated during or after the renovation of Gartley Hall.

<u>Water Quality:</u> No State or Federal water quality standards will be violated during or after the renovation of Gartley Hall.

<u>Ambient Noise Levels:</u> Construction activities for the development of the property will inevitably create temporary noise impacts. The developer may employ mitigation measures to minimize those temporary noise impacts including the use of mufflers and implementing construction curfew periods. Pursuant to Chapter 11-46, Hawai'i Administrative Rules, the project activities will comply with all community noise controls.

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

The project site does not lie in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, estuary, freshwater or coastal waters. Likewise, the Gartley Hall Renovation is not anticipated to have any impact on any natural hazard conditions and no mitigation measures are planned.

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

The impact to mauka views are not anticipated to be substantial due to the fact that the project involves the renovation of an existing building.

(13) Requires substantial energy consumption.

UNIVERSITY OF HAWAI'I AT MĀNOA FINAL ENVIRONMENTAL ASSESSMENT

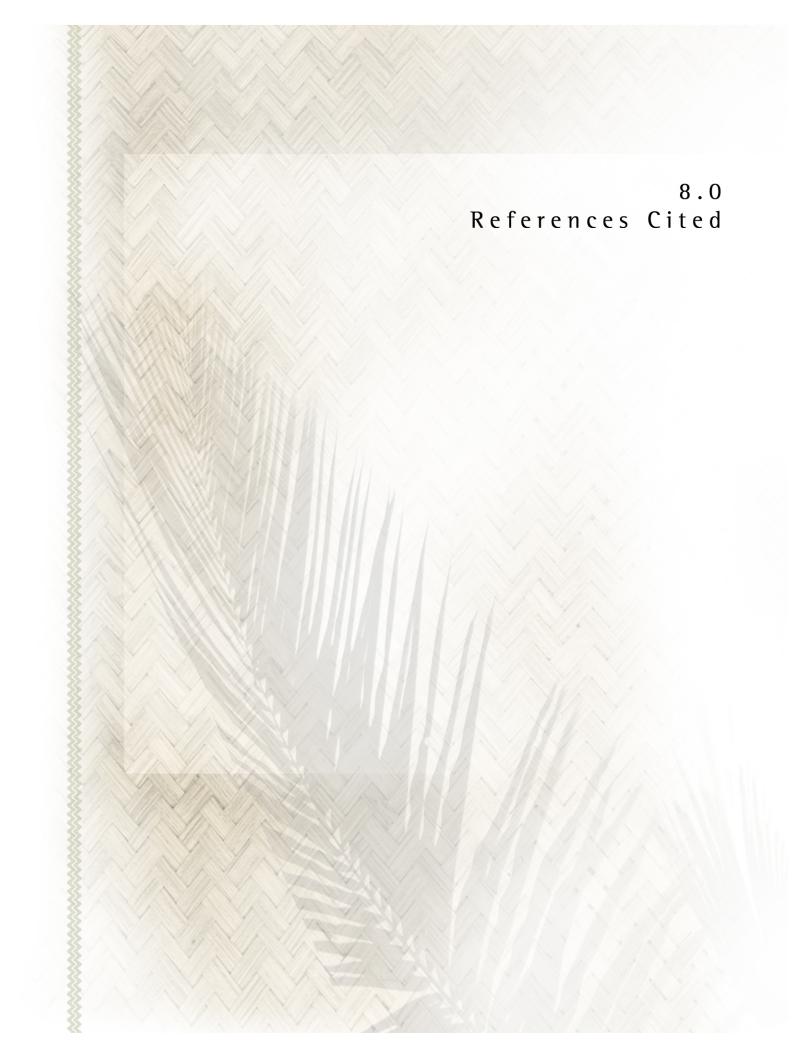
The proposed project will not require substantial energy consumption. As previously mentioned above, energy saving design elements will be integrated into the design of the renovation of Gartley Hall.

7.3 ANTICIPATED DETERMINATION

On the basis of impacts and mitigation measures examined in this document and analyzed under the above criteria, it is anticipated that the Gartley Hall Renovation will not have a significant effect on the physical or human environments. Pursuant to Chapter 343, HRS, the approving agency, The University of Hawai'i at Mānoa, has issued a Finding of No Significant Impact (FONSI).

UNIVERSITY OF HAWAI'I AT MĀNOA FINAL ENVIRONMENTAL ASSESSMENT

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UNIVERSITY OF HAWAI'I AT MĀNOA FINAL ENVIRONMENTAL ASSESSMENT

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UNIVERSITY OF HAWAI'I AT MĀNOA FINAL ENVIRONMENTAL ASSESSMENT

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Appendix A Pre-consultation Letters and Responses

LINDA LINGLE COVERNOR OF HAWAII





DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION STATE OF HAWAII

POST OFFICE BOX 621 FONOLULU, HAWAII 96809

June 18, 2008

PBR Hawaii & Associates, Inc. ASB Tower, Suite 650

1001 Bishop Street

Honolulu, HI 96813-3484

Attention: Mr. Vincent Shigekuni Vice President

Dear Mr. Shigekuni:

Draft Environmental Assessment; TMK: (1) 2-8-023:003 por. Pre Consultation for the Proposed Gartley Hall Renovation University of Hawaii at Manoa, Honolulu, Island of Oahu, SUBJECT:

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments. At this time, enclosed are comments from the (a) Engineering Division, (b) Commission on Water Resource Management, and (c) Oahu District of the Land Division on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at \$87-0417. Thank you.

Sincerely,

Charles Ploster Morris M. Atta

Enclosures

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DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION STATE OF HAWAII

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

June 4, 2008

MEMORANDUM

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Div. of Boating & Ocean Recreation Div. of Aquatic Resources DLNR Agencies:

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DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

Div. of Forestry & Wildlife Div. of State Parks

X. Commission on Water Resource Management
Office of Conservation & Coastal Lands

x Land Division - Oahu District

Koncris M. Atta, Administrator Malleus

SUBJECT: () Pre-Consultation for the Proposed Gartley Hall Renovation, University of Hawaii at Manoa, Honolulu, Island of Oahu, Draft Environmental Assessment LOCATION: Manoa, Island of Oahn; TMK; (1) 2-8-023:003 por. APPLICANT: PBR Hawaii & Associates, Inc.

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 18, 2008.

ij If no response is received by this date, we will assume your agency has no comments. you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

We have no comments. We have no objections.

Comments are attached.

Signed:

Central Files 3

DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION

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COMMENTS

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- Flood Zone Plood Enact based on the map that you provided, the project site according to the Please take note that based on the map flat you provided, the project site according to the Plood Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The National Flood Insurance Program does not have any regulations of developments within Zone X. 8
 - Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is C

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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. 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 Please note that the project must comply with the rules and regulations of the National Flood

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 be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your please contact the applicable County NFIP Coordinators below

- Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the
- \circ
- City and County of Honolulu, Department of Planting and Permitting.

 Mr. Kelly Gomes at (808) 961-8327 (Hils) or Mr. Kiran Emlet at (808) 327-3530 (Kons) of the County of Hawaii, Department of Public Works.

 Mr. Parnois Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

 Mr. Mario Autonio at (808) 241-6620 of the County of Kausi, Department of Public 00
- Water Supply system will be required to pay a resource development charge, in addition to Water Please note that projects within State lands requiring water service from the Honolulu Board of The applicant should include water demands and infrastructure required to meet project needs. 0
- Facilities Chargos for transmission and daily storage. The applicant should provide the water domands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update. Additional Comments: С \Box

Should you have any questions, please call Ms. Suzie Agraan of the Planning Branch at 587-0258.

ZHIEF ENGINEER Signed America Date:

LINDA LINGLE COVERNOR OF HAWAE



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STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

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POST OFFICE BOX 621 HONOLULU, HAWAII 96809

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June 4, 2008

MEMORANDUM

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Div. of Boating & Ocean Recreation Div. of Aquatic Resources

Div. of Forestry & Wildlife x Engineering Division

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2008 JUN 10 P 3: 45

DEPT. OF LAND & NATURAL RUSOURCES STATE OF HAVIAH

x Commission on Water Resource Management Office of Conservation & Coastal Lands Div. of State Parks

x Land Division - Oahu District

FROM: Pre-Consultation for the Proposed Gartley Hall Renovation, University of Havaii -KOW:

e.

at Manoa, Honofulu, Island of Oahu, Draft Environmental Assessment LOCATION: Manoa, Island of Oahu; TMK: (1) 2-8-023:003 por.

APPLICANT: PBR Hawaii & Associates, Inc.

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 18, 2008.

Ľ If no response is received by this date, we will assume your agency has no comments. you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

() We have no objections. We have no comments.

Comments are attached

Signed: Date: __

> Central Files 8







STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

June 4, 2008

MEMORANDUM

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DLNR Agencies:

Div. of Boating & Ocean Recreation Div. of Aquatic Resources

x Engineering Division

Div. of Forestry & Wildlife

Div. of State Parks

x Commission on Water Resource Management Office of Conservation & Coastal Lands

x Land Division -- Oahu Distri

10 FROM

Morris M. Atta, Administrator Milleller

SUBJECT: () Pre-Consultation for the Proposed Gartley Hall Renovation, University of Hawaii at Manoa, Honolulu, Island of Oahu, Draft Environmental Assessment

LOCATION: Manoa, Island of Oahu; TMK: (1) 2-8-023:003 por.

APPLICANT: PBR Hawaii & Associates, Inc.

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 18, 2008. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

We have no objections. We have no comments.

Comments are attached

Signed: Date:

> Central Files 8



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July 28, 2008

W. FRANK BRANDU FASLA

THOMASS, WITHEN, ASEA Pre-inhair

State of Hawai'i

Land Division

P.O. Box 62

R.STAN DUNCAN, ASLA Frendin, Vins-President

Department of Land and Natural Resources

Mr. Morris M. Atta, Administrator

RESERVACIIUNG, FASIA Exemple Ano-Posident

VINCENT SHIGHRUM Any Presenting

Attn: Ms. Darlene Nakamura

Honolulu, Hawai'i 96809

GRANT EMURAKAMI, AICP

SUBJECT:

TOM SCHNELL, AICP

PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU

Sention, Issua tota

RAYMOND T. BIGA, ASLA

Dear Mr. Atta:

SIMI MIKAMI YULN, LI LIFAP KEVINK, MISHIIGAWA, ASI,A

Thank you for the letter dated June 18, 2008. As the Engineering Division commented, we acknowledge that according to the Flood Insurance Rate Map, the project site is located in Flood Zone X and the National Flood Insurance Program does not have any

regulations for development within Zone X. We also acknowledge that the Commission

on Water Resource Management and the Land Division have no comments.

SCOTT ALIKA ABRIGO See telle

SCOTT MURAKAMI, ASLA

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to

contact me at 521-5631.

Sincerely,

Vincent R. Shigekuni

Vice President

cc: Ms. Katherine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa

101 Aupun vired Bliod agont Center, Suite 110 Hills, Maxal (MC210 1264) Telebras Set-1344 Las (Stearted 1285)

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FLANNING - LANLINGAPE ARCHITECTURE - ENVIRONMENTAL STUDIES - FNTITLEMENTS / PERMITTING - GRAPHIC DESIGN





DEPARTMENT OF LAND AND NATURAL RESOURCES STATE OF HAWAII

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RUSSELL Y, TSUUI

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

July 17, 2008

Mr. Vincent Shigekuni

PBR Hawaii & Associates, Inc. 1001 Bishop Street, ASB Tower, Suite 650 Honolulu, HI 96813-3484 Vice President

LOG NO: 2008.2079 DOC NO: 0806ST15

Dear Mr. Shigekuni:

Chapter 6E-8 (HRS) Review SUBJECT:

Draft Environmental Assessment - Proposed Renovations University of Hawaii at Manoa - Gartley Hall Honolulu, Oahu, Hawaii

TMK: (1) 2-8-023:003 (por.)

This is in regards to the submittal received June 3, 2008. The Draft Environmental Assessment is for proposed renovations to Gartley Hall at the University of Hawaii at Manoa (UHM). UHM is listed on the State Register of Historic Places (3/19/1984 and 8/24/1984).

Our determination for the proposed work is pending ongoing design developments. SHPD staff will attend a design charrette that is planned for August 6, 2008 at Gartley Hall, Room 102 involving interested parties.

Thank you for the opportunity to comment. Should you have any questions regarding architectural concerns, please call Susan Tasaki and regarding archaeology concerns, please call Lauren Morawski in our Oahu office at (808) 692-8015.

Sincerely,

JOHNALY MIRALAN Astrid M.B. Liverman, Ph.D. Architecture Branch Chief Ms. Tonia Moy, Fung Associates, 1833 Kalakaua Avenue, Suite 1008, Honolulu, HI 96815



July 28, 2008

W. FRANK IRANDT, EASLA

PHOMASS, WITTEN, ASLA Pre-tilent

Ms. Astrid M.B. Liverman, Ph.D.

Architecture Branch Chief

State of Hawai'i

R.STANDI NCAN, ASLA FRETHIYE VIA CPENSAMI

Department of Land and Natural Resources 601 Kamokila Boulevard, Room 555 State Historic Preservation Division

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GRANTT MURAKAMILAICP

Attn: Ms. Susan Tasaki Kapolei, Hawai'i 96707

SUBJECT:

TOMESTICKED, ARCP.

PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF

HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF OʻAHU

RAYMOND T. HIGA, ASLA wher Assessale

KEY IN K. NISHKAWA, ASBA

Dear Ms. Liverman:

KIMEMIKAMI PE PN, LELD*AP

SCOTTAIL RANAMI, ASEA

SCOTT ALIKA ABRIGO

8 HRS determination is pending ongoing design development. As you noted, SHPD staff will attend a design charrette scheduled for August 6, 2008. Please be assured that Fung Associates, Inc. and the University of Hawai'i will continue to coordinate with SHPD in

Thank you for the letter dated July 17, 2008. We acknowledge that SHPD's Chapter 6E-

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

the proposed renovation of this historic building.

Victo R. Shig Sincerely,

HONOLULU OFFICE

Vincent R. Shigekuni 1001 Baluep Meet ASI Baver, Suite Citi Hondulti, Ilwasi 9881 (181) 14 (1889) 24 (24) Izv. 1888) 244 (40) Ernales Azadonios, ploches accom

Vice President

WALLUKU OFFICE 1787 Wide Politory, Suite 4 Madelin, Havari W., 79, 1271 145 to 486, 243, 547, 547

cc: Ms. Katherine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa O:UOB10-11V115.01 UH Gardey HalftDraft EAVPre Consultation/BL-09 SHPD Response.doc

PLANNING - LAUDACAPT ARCBITECTHEF - ENVIRONMENTAL STUDIES - ENTITLEMENTS - FERMITTING - GRAPHIC DISION



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

Regulatory Branch

File Number POH-2008-162

Mr. Vincent Shigekuni PBR Hawaii & Associates, Inc. 1001 Bishop Street

Dear Mr. Shigckuni:

Honolulu, Hawaii 96813-3484

ASB Tower, Suite 650

Draft Environment Assessment (EA) for two projects, the proposed Garley Hall renovation and Kennedy Theater expansion both located at the University of Hawaii at Manoa, Oahu Island, Hawaii, (TMK: (1) 2-8-23:03). The file number POH-2007-339 is assigned to both projects and should be referred to in future We have received your June 2, 2007 requests for early consultation comments in preparation of a correspondence with us.

We recommend that the draft EAs address whether any potential waters of the U.S., as represented by the presence of perennial, intermittent or ephemeral streams or wetlands, are in, adjacent to or flow through, the land parcel subject to development. The EAs should also disclose whether any streams or other aquatic resources that may occur within the land parcel have an existing direct or indirect surface water connection to the Pacific Ocean. Section 404 of the Clean Water Act requires that a Department of the Army (DA) permit be obtained for the discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344). The Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403). Section 10 waters are those waters subject to the ebb and flow of the tide extending shoreward to the mean high water mark. We appreciate the opportunity to provide comments on the proposed development of both projects (808) 438-7023 or at joy n. anamizufalusace army mil. For additional information about our Regulatory and respective EAs. Should you have any questions, please contact Ms. Joy Anamizu of my staff at Program, visit our web site at http://www.polp.usace.army.mil/EC-R/EC-R.htm.

Sincerely,

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



W.FRANKJIRANDELASLA

THOMASS, WITTEN, ASLA

Mr. George P. Young, P.E.

Chief, Regulatory Branch Department of the Army

R.STANDUNCAN, AND Exertine Vice President

U.S. Army Engineer District, Honolulu

Ft. Shafter, Hawai'i 96858-5440

Attn: Ms. Joy Anamizu

RUSSELL V.J. CHUNG, FASI,A Executive Vice-President

VINCENT SHIGEKUNI Vice-President

GRANT T. MURAKAMI, AICP

SUBJECT:

TOM SCHNELL, AICP

RAYMOND T. HIGA, ASLA Senior As-aciate

Dear Mr. Young,

KEVIN R. NISHIKAWA, ASI.A

Thank you for your letter dated June 26, 2008 (File Number POH-2008-162). We offer

the following response to your comments:

PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU

There appears to be no waters of the United States, as represented by perennial

SCOTT ALIKA ABRIGO

KIMEMIKANG YUEN, LEED"AP

SCOTT MURAKAMI, ASI,A

area (Figure 1). This map will also be included in the DEA. The map should confirm that there are no streams or aquatic resources that may occur within the intermittent and ephemeral streams or wetlands, are in, adjacent to, or flow which does not delineate any streams located nearby or in the proposed project Enclosed is the USGS map project site that have an existing direct or indirect surface water connection to the through the project site subject to development. Pacific Ocean. Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631,

Sincerely,

HONOLULU OFFICE Brvt Bishop Street

PBR HAWAII 1944, Bachop Street
ASB Tower, Sulte c. 69
Houchdth, Haward 26613-3194
Tri (868) 521-5631
Fax (85x) 57.3-1-02
F-mail: 55.8dmin-phinawai.com

HILO OFFICE
101 Aupuni Street
104 Eagonn Center, Suite 310
Hilo Hawari 95020-1-942
Tels (868) 961-3233
Fax: (2318) 961-1999

WAILUKU OFFICE 1787 Wife P. Loop. Suite 4 Waludai, Hawait w.793-1 ** 1 Tel: (865) 242-2528

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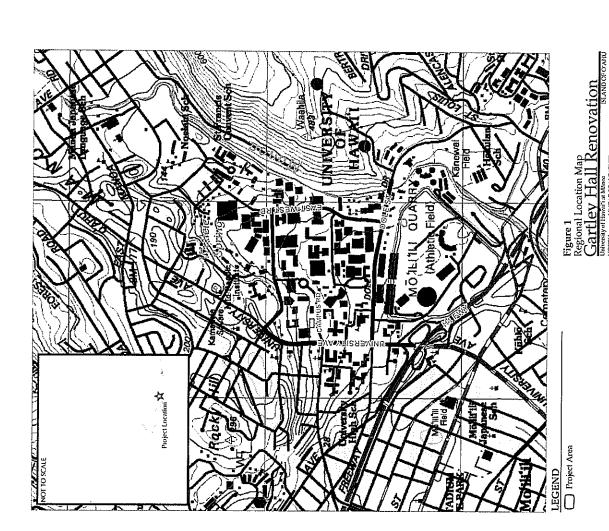
Vincent R. Shigekuni

Vice President

cc: Ms. Katherine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa

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PLANNING - LANDSCAPE ARCHITECTORI - ENVIRONMENTAL STUDIES - INTITILMENTS - PERMITTING - GRAPHIC DESIGN



BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU 630 SOUTH BERETANIA STREET HONOLULU, HI 96843



MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman SAMUEL T. HATA ALLY, JARAK ROBERT K. CUNDIFF MARC C. TILKER CRAIG I. NISHIMURA, Ex-Officio BRENNON T. MORIOKA, Ex-Officio DEAN A. NAKANO Deputy Manager and Chief Engineer CLIFFORD P. LUM Manager and Chief Engineer

Mr. Vincent Shigekuni Vice President

PBR Hawaii & Associates, Inc. 1001 Bishop Street ASB Tower, Suite 650 Honolulu, Hawaii 96813-3484

Dear Mr. Shigekuni:

Subject: Your Letter Dated June 2, 2008 on the Pre-Consultation for the Proposed Gartley Hall Renovation, University of Hawaii at Manoa, TMK: 2-8-23:3

Thank you for the opportunity to comment on the proposed renovations.

The existing water system is presently adequate to accommodate the proposed development. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

The proposed project is subject to Board of Water Supply cross-connection control and backflow prevention requirements prior to issuance of the Building Permit.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly

KEITH S. SHIDA

Program Administrator Customer Care Division

Water for Life . . . Ka War Ola

INEAR SCALE (FEED)

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July 28, 2008

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TOM SCHNI II, AICP Semme Assueme

KEVIN K. NISHIKAWA, ASLA Setting Lorn title

KAYMOND T. HIGA, ASLA

KIMI MIKAMINE EKLELD'AP Prografie

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SCOTT MURAKAMI, ASLA A-solah:

HONOLULU OFFICE

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Mr. Keith S. Shida, Program Administrator

Customer Care Division Board of Water Supply

City and County of Honolulu 630 South Beretania Street Honolulu, Hawai'i 96843

Attn: Mr. Robert Chun

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU

Dear Mr. Shida:

Thank you for your letter dated June 20, 2008. We offer the following responses to your comments:

- We acknowledge your statement that based on current data, the existing water system is adequate to accommodate the proposed development. We acknowledge that the Board of Water Supply (BWS) reserves the right to change its assessment and the final decision on the availability of water will be confirmed when the building permit application is submitted for approval.
- We acknowledge that UHM will be required to pay the BWS Water System Facilities Charges for resource development, transmission and daily storage. 4
- Please be assured that on-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department. ć,
- We acknowledge that Board of Water Supply Cross-Connection Control and Backflow Prevention requirements will be fulfilled prior to the issuance of the building permit. 4

PLANNING + LANDSCAPI ARCHITECTURE + ENVIRONAINTAL STUDIES + ENTITLEMENTS / PERMITTING + GRAPHIC DESIGN

Mr. Keith S. Shida

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF

July 28, 2008

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Sincerely,

Vincent R. Shigekuni

cc: Ms. Katherine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa

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MUFI HANNEMANN MAYOR

RUSSELL H. TAKARA, P.E. DEPUTY DIRECTOR

June 18, 2008

Mr. Vincent Shigekuni, Vice President PBR Hawaii & Associates, Inc. Honolulu, Hawaii 96813-3484 1001 Bishop Street ASB Tower, Suite 650

Dear Mr. Shigekuni:

Pre-Consultation for the Proposed Gartley Hall Renovation and Kennedy Theatre Expansion, University of Hawaii at Manoa, Honolulu, Island of Oahu Draft Environmental Assessment Subject:

Thank you for giving us the opportunity to comment on the above Draft Environmental Assessment. The Department of Design and Construction does not have any comments to offer at this time.

Very truly yours,

Phune / weren FGREugene C. Lee, P.E. Director

ECL:# (264361)



July 28, 2008

W.FRANKBRANDT, FASILA

THOMASS, WITTEN, ASUA Perthan R.STAN DUNCAN, ASLA

Mr. Eugene C. Lee, P.E., Director Department of Design and Construction City and County of Honolulu 650 South King Street, 11 th Floor

RUSSIEL KECHUNGLIMIA Erondon Anselin odent

Honolulu, Hawai'i 96813

SUBJECT:

VINCINT SHREEKIN

PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF

HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU

GRANT TAIURAKAMI, AICH

tac-Pronting

TOM SCHN113, AICP h mor Assemble

Dear Mr. Lee:

RAYMOND T. HIGA, ASLA Support . Seasons

KEVINE, NISHIKAWA, ASLA dysocute

KIMEMIKAMI YUTN, ULUPAP

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Thank you for your letter dated June 18, 2008. We acknowledge that the Department of

Design and Construction does not have any comments to offer at this time.

SCOTT ALJKA ABRIGO

Sincerely,

SCOFT MURASAMILASLA Foreign

Nico P. Shigh

Vincent R. Shigekuni

Vice President

cc: Ms. Katherine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa

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DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 Uluchla Street, Suite 215, Kapolei, Hewaii 96707 Phone: (808) 768-3343 * Fax; (808) 769-3381 Website: www.honolulu.gov

MUFI HANNEMANN MAYOR



June 27, 2008

Honolulu, Hawaii 96813-3484 PBR Hawaii & Associates ASB Tower, Suite 650 Mr. Vincent Shigekuni 1001 Bishop Street Vice President

Dear Mr. Shigekuni:

University of Hawaii at Manoa, Honolulu, Island of Oahu, Draft Subject: Pre-Consultation for the Proposed Gartley Hall Renovation, Environmental Assessment (DEA) Thank you for giving us the opportunity to comment on the proposed subject pre-consultation. Your proposed improvements appear to be entirely contained within State property. As such, we have no comments to offer.

Should you have any questions, please contact Larry Leopardi, Chief of the Division of Road Maintenance, at 768-3600.

Sincerely,

Director and Chief Engineer Craig 1. Nishimura



July 28, 2008

W. FRANK BRAND I, EVYLA

CRAIG 1. NISHIMURA, P.E. DIRECTOR AND CHEF ENGINEER GEORGE "XEOKI" MIYAMOTO DEPUTY DIRECTOR IN REPLY REFER TO: DRM 08-543

THOMASS, WITTEN, ASLA President

Department of Facility Maintenance Mr. Craig I. Nishimura, Director

1000 Uluohia Street, Suite 215 City and County of Honolulu

Kapolei, Hawai'i 96707

R.STANDUNCAN, ASLA I venture Vice Po, other

RUSSIELY, CHUNG, FASEA Frontier Vice Provident

VINCENT SHIGH KUNI

Attn: Mr. Larry Leopardi

GRANT T. MURAKAMI, AICP Un Pradent

SUBJECT:

PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU

TOM SCHWPLL AICP

RAYMOND T. HIGA, ASLA

Seator Associate

Dear Mr. Nishimura:

KLYIN K, NISHIIKAWA, ASE,A Assente. KIMBAHKAMI YUEN, LELIYAP

Thank you again for your participation in the preparation of the upcoming Environmental

Assessment. If you have any questions regarding this project, please do not hesitate to

the project is located entirely on State property and as such, have no comments to offer.

Thank you for your letter dated June 27, 2008. We acknowledge your assessment that

SCOTTALIKAABRIGO

contact me at 521-5631.

SCOTT NURAKAME, ASI, A

Sincerely,

Vice R. Brig

Vincent R. Shigekuni

Vice President

cc: Ms. Katherine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Manoa

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HILOCIFICE

FLANNING - LANDSCAPL ARCHITECTURE - INVIRONMENTAL STUDIES - ENTITLEMENTS / PERMITTING - GRAPHIC DESIGN

DEPARTMENT OF TRANSPORTATION SERVICES CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR HONOLULY, HAWAII 96813 Phone: (808) 768-8305 • Parc (808) 523-4730 • Internet: www.honolulu.gov



RICHARD F. TORRES DEPUTY DIRECTOR WAYNE YOSHIOKA ORECTOR

June 9, 2008

TP6/08-264483R

PBR Hawaii & Associates, Inc. Honolulu, Hawaii 96813-3484 1001 Bishop Street ASB Tower, Suite 650 Mr. Vincent Shigekuni

Dear Mr. Shigekuni:

Subject: Draft Environmental Assessment: University of Hawaii, Manoa Gartley Hall Renovation Pre-Consultation

This responds to your letter of June 2, 2008, requesting pre-consultation in preparing for a Draft Environmental Assessment (DEA) related to the University of Hawaii Manoa Gartley Hall Renovation.

We wish to reserve comment on the project pending the preparation of a traffic impact study for the document. Upon completion of the study, we request a copy be forwarded to our department for review and comment. Should you have any questions on the matter, you may contact Mr. Brian Suzuki, AICP at 768-8349.

Faith Miyamoto, RTD James Burke, PTD Mike Oshiro, TE 엉



July 28, 2008

W. FRANK BRANDI, FASLA

FIIOMASS, WITTEN, ASLA

R. STAN DUNCAN, ASLA Eventra AugePresident

Department of Transportation Services City and County of Honolulu 650 South King Street 3rd Floor Mr. Wayne Y. Yoshioka, Director

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VINCENTSRIGIRUM

Attn: Mr. Brian Suzuki, AICP

Honolulu, Hawai'i 96813

ter President

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF

HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU

GRAN FEMURAKAMI, AICP

TOM SCHENELL, AICP

RAYMOND'T. HIGA, ASLA

Dear Mr. Yoshioka:

KEVIN K. NISHIKAWA, ASLA

KIMEMIKAMIYUN, IIUD'AP Asociale SCOTT ALIKA ABRIGO

comment pending the preparation of a traffic impact study for the Draft EA. We wish to inform you that since a traffic impact assessment report (TIAR) for the entire campus was prepared at the end of October 2007, and the cumulative impact of the campus development (including the proposed building renovation) was assessed in that report, the referenced TIAR will be reproduced in its entirety in the Draft BA for your Department's

We acknowledge that the Department of Transportation Services wishes to reserve

Thank you for your letter dated June 9, 2008 (your reference number TP/08-264483R).

SCOTT MERAKAMI, ASLA

review and comment.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Sincerely,

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Vincent R. Shigekuni Vice President сс: Мs. Katherine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa

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PLANNING + LANDSCAPE AUCHITICTHRE - ENVIRONMENTAL STHDIES - ENTITLEMENTS - PERMITTING - GRAPHIC DESIGN

CITY AND COUNTY OF HONOLULU POLICE DEPARTMENT

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 90813 TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

BUFI HANNEMANN MAYOR

BS-KP OUR REFERENCE



June 9, 2008

BOISSE P CORREA CHIEF

PAUL O. PUTZULU Karl A. Godsey Députy chiefs

Mr. Vincent Shigekuni, Vice President

PBR Hawaii and Associates, Inc. ASB Tower, Suite 650

1001 Bishop Street

Honolulu, Hawaii 96813-3484

Dear Mr. Shigekuni;

This is in response to your letters of June 2, 2008, requesting comments on two Pre-Consultations, Draft Environmental Assessments, for the Proposed Kennedy Theatre Expansion and the Proposed Gardley Hall Renovation projects. Both projects are located at the University of Hawaii at Manoa.

These projects should have no significant impact on the facilities or operations of the Honolulu Police Department. If there are any questions, please call Major Robert Green of District 7 at 529-3362 or Mr. Brandon Stone of the Executive Office at 529-3644.

Sincerely,

BOISSE P. CORREA Chief of Police 22 Assistant Chief of Police Support Services Bureau DEBORA A. TANDAL xanar B

Serving and Protecting With Aloha



July 28, 2008

W. PRANK BRANDI, EASLA Chapman

THOMASS, WITTEN, ASLA

Mr. Boisse P. Correa, Chief of Police

City and County of Honolulu 801 South Beretania Street

Police Department

Honolulu, Hawai'i 96813

R.STANDUNCAN, ASSA Freedow User President

RUSNILLA, L'CHT'NG, FASLA Executive Vice Po sufeut

VINCENT SHIGI KUNI Vice-President

Attn: Assistant Chief of Police Tandal

GRAN UTIMI RAKAMI AICP

SUBJECT:

PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF

HAWAIT GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU

POM SCHNELL, AICP

Serior Associate

RAYMOND T. BIRCA, ASLA

A cent about the

Dear Chief Correa:

KEYIN K. NISHIKAWA, ASI A

Thank you for your letter dated June 2, 2008 (your reference number: BS-KP). We acknowledge your assessment that the project should have no significant impact on the facilities or operations of the Honolulu Police Department.

Thank you again for your participation in the preparation of the upcoming Environmental Assessment. If you have any questions regarding this project, please do not hesitate to

KIMI MICKAME VUEN, LEI D*AP

SCOTTALIKAABRIGO Associate SCOTT MURAKAMI, ASLA Feor inte

contact me at 521-5631.

Vincent R. Shigekuni

Vice President

cc: Ms. Katherine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa HONOLULU OPFICE
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PLANNING + LANDSCAPL ARCHITECTURE + INVIRONALINIA STUDIES + INTITLIMENTS / PERMITTING + GRAPHIC DESIGN



July 16, 2008

Mr. Vincent Shigekuni - Vice President PBR Hawaii & Associates, Inc. ASB Tower - Suite 650 1001 Bishop Street

Dear Mr. Shigekuni:

Honolulu, HI 96813

Proposed Gartley Hall Renovation University of Hawaii at Manoa TMK: (1) 2-8-23:03 (por.) Honolulu, Oahu . В

Thank you for the opportunity to comment on the above-referenced project. Hawaiian Electric Company, Inc. (HECO) has no objections at this time. The following pre-assessment comments were received from our Engineering Department:

- HECO currently has no existing facilities within the subject parcel. We appreciate your efforts to keep us apprised of the planning process. As the renovation project progresses, please continue to keep us informed. We will be better able to evaluate any effects on our plans show all affected HEČO facilities and address any conflicts between the proposed plans and our existing facilities. Please forward the pre-final development plans to HECO for review. A brief description and environmental analysis of any requirements for relocation or new facilities should be included in the DEA. system facilities further atong in the project's development. We request that development 3
- writing and we will work with you so that construction of the project may proceed as smoothly as possible. Please note that there may be costs associated with any relocation work, and that such costs may be borne by the requestor. Because any redesign or relocation of our facilities may cause lengthy delays, upon determination that HECO facilities will need to be relocated or built, HECO should be notified immediately in order to Should it become necessary to relocate HECO's facilities, please submit a request in minimize any delays in or impacts on the project schedule. 4

Transmission & Distribution Division, Engineering Department (543-7527). I suggest dealing Our point of contact for this project, and the originator of these comments, is Hsun Jou, directly with him to coordinate HECO's continuing input in this project.

Kirk S. Tomita

Sincerely,

Senior Environmental Scientist

H. Jou/R. Tamayo/M. Lum

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July 28, 2008

V. FRANK BRANDT, LASLA

Mr. Kirk S. Tomita, Senior Environmental Scientist

Hawaiian Electric Company, Inc. Honolulu, Hawai'i 96840-0001

P.O. Box 2750

THOMASS, WITTEN, ASLA President

R. STAN DUNCAN, ASLA Facultive Unceller subut

RUSHILLY, CHUNGANSIA Lyomus Arc-Posibut

Attn: Mr. Hsun Jou

VINCENTSHIGLKUN

GRAN I TAH BAKAMI, AICP Peninpal har-Premhar

SUBJECT: PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF HAWATI GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU

TOM SCHWELL, AICP

Dear Mr. Tomita:

RAYMOND'E HIGA, ASEA

KÜVIN K, MISHIKAWA, ASLA

Thank you for your letter dated July 16, 2008, which we just received on July 22, 2008. We acknowledge that the Hawaiian Electric Company, Inc. (HECO) has no objections at this time. We have reviewed your letter and offer the following responses to your

KIMB MIKAMI YUTN, LEDIYAP Asociare

comments:

SCOTT ALINA ABRIGO

SCOTT MURAKAMI, ASLA

continue to coordinate with HECO's Engineering Department as plans facilities, and address any conflicts between the proposed plans and HECO's existing facilities. Pre-final development plans will be forwarded to HECO We acknowledge that HECO has no existing facilities within the subject property. The University's civil and electrical engineering consultants will As requested, development plans will show all affected HECO for review. progress.

Should the relocation of or additional facilities be required, a formal request will be submitted and coordinated through the appropriate HECO department(s). ri

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Mr. Kirk S. Tomia SUBJECT: PRE-CONSULTATION FOR THE PROPOSED UNIVERSITY OF HAWAI'I GARTLEY HALL RENOVATION DRAFT ENVIRONMENTAL ASSESSMENT HONOLULU, ISLAND OF O'AHU July 28, 2008 Page 2

Thank you again for your participation in the Environmental Assessment process for this project. Your comment letter and this response will be included in the Draft Environmental Assessment. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Sincerely,

PBR HAWAII

Vincent R. Shigekuni Vice President

Vice R. Brigan

cc: Ms. Kathcrine Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa

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Appendix B Draft EA Letters and Responses







LAUKA H. THELEN CHARTEGON EXARDOR LANDANTIALA EZORECE CONCESSON EN WATER RESIGNED, MANILLAND

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION POST OFFICE BOX 621 HONDLULD, HAWAII 96809

August 11, 2008

ASB Tower Suite 650

1001 Bishop Street

Honolulu, Hawaii 96813

Mr. Michael Shibata Attention:

Gentlemen:

Draft Environmental Assessment for University of Hawaii at Manoa Subject:

Gartley Hall Renovation

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

enadore Elinori

Aca Morris M. Atta

OEOC ö



September 25, 2008

THOMASS, WITTEN, ASLA President

PRINCIPALS

Mr. Morris M. Atta, Administrator State of Hawai'i R.STAN DENCAN, ANIA Exerting Vice-President

Department of Land and Natural Resources Land Division RUSSEI I. K.J. CHUNG, FASIA Exemine Vae Presid m VINCENTSHIGGERINI

P.O. Box 621

GRANT TAIURAKAMI, AICP Pruicipal

CHADRIANENERITYS W.FRANK IIRANDY, LASLA Chairman Lumites

Honolulu, Hawai'i 96809

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UNIVERSITY OF HAWAIT AT MĀNOA GARTLEY HALL

RENOVATION

Dear Mr. Atta,

Thank you for your letter dated August 11, 2008. We acknowledge that the Department of Land and Natural Resources' has no comments to offer on the subject matter. Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Sincerely,

KEMI MIKAMI YULN, BELIKAR

SCOTT AUKA ARREGO

KEVIN K. NIMIIKAWA, ASLA Asan inti

RAVMOND'E BIGA, 451-A. A. Sentor Associate

FOM SCHNELL, AICP ASSOCIATIN

Market Street SCOTTAR RAKAMI, AND ALLED A

Michael S. Shibata Planner

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Ms. Katherine P. Kealoha, Office of Environmental Quality Control ij

Ms. Kathleen Cutshaw, University of Hawai's at Mānoa

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Tel. (200), 112,20.5

PLANNING + LANDSCAPL ARCHITECTURE + FIVIRONMINTAL STUDIES + ENTIFIEMENTS - PERMITTING + GRAPHIC DISIGN





DEPARTMENT OF LAND AND NATURAL RESOURCES STATE OF HAWAII

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

September 4, 2008

Mr. Michael Shibata PBR Hawaii & Associates, Inc. 1001 Bishop Street, ASB Tower, Suite 650 Honolulu, HI 96813-3484

LOG NO: 2008.3478 DOC NO: 0809ST09 Architecture Archaeology

Dear Mr. Shibata;

Draft Environmental Assessment -- Proposed Renovations University of Hawaii at Manoa -- Gartley Hall Chapter 6E-8 (HRS) Review - RESUBMITTAL TMK: (1) 2-8-023:003 (por.) Honolulu, Oahu, Hawaii SUBJECT:

This is in regards to the submittal received August 6, 2008 of the Draft Environmental Assessment (DEA) for proposed renovations to Gartley Hall at the University of Hawaii at Manoa (UFIM). UHM is listed on the State Register of Historic Places (3/19/1984 and 8/24/1984).

Architecture Concerns: SHPD staff attended a design charrette for the proposed work on August 6, 2008 at Gartley Hall, Room 102. Our determination for the proposed work is pending ongoing design developments Archaeology Concerns: According to the DEA, no adverse impacts are anticipated to archaeological resources since the basement of Gartley Hall has been extensively disturbed. However should the location for the chosen option be outside of the basement's area, we request a program of precautionary

Thank you for the opportunity to comment. Should you have any questions regarding architectural concerns, please call Susan Tasaki and regarding archaeology concerns, please call Teresa Davan at (808) 692-8015.

Sincerely,

Astrid And Hiverpanday Astrid M.B. Liverman, Ph.D.

Architecture Branch Chief

Ms. Tonia Moy, Fung Associates, 1833 Kalakaua Avenue, Suite 1008, Honolulu, HI 96815



LAURA H, THIELEN
COME PROMETRICAL
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September 25, 2008

THOMASS, WITHIN, ASLA President PRINCIPALS

Ms. Astrid M.B. Liverman, Ph.D. Architecture Branch Chief RESSELL V.LCHUNG, IASLA Exentire Vice President RISTANDUM ANASIA Exentire Vice-President

Department of Land and Natural Resources State Historic Preservation Division 601 Kamokila Boulevard, Room 555 Kapolei, Hawai'i 96707 State of Hawai'i VINCI NT SHIGHERSH hee President

GRANT T. MURAKAMII, MCP Franched

CHAIRMANUMBRIUS

W. FRANK BRANDT, TASKA

Chairman Lunnaisc

DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UNIVERSITY OF HAWAYI AT MÂNOA GARTLEY HALL RENOVATION SUBJECT:

Attn: Ms. Susan Tasaki/Ms. Teresa Davan

Dear Ms. Liverman,

Thank you for your letter dated September 4, 2008 (your reference number: LOG NO: 2008.3478, DOC NO: 0809ST09). We have reviewed your letter and provide the following responses. We thank you for attending the design charrette for the Gartley Hall Renovation project. We acknowledge that the determination for the proposed project is pending ongoing design development. ,..;

Should project construction be located outside of the basement area's original footprint, a program of precautionary monitoring will be provided to the State Historic Preservation Division (SHPD). ۲i

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Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-

Sincerely,

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Special Property Michael S. Shibata Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa ដូ

PIANNING - LANDSCAFF ARCHITICTURE - ENVIRONMINTAL STUDIES - LATIFICIALITS - PFRMITTING - GRAPHIC DESIGN

PHONE (808) 594-1888



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

HRD08/3714

August 22, 2008

ABS Tower, Suite 650 Honolulu, Hawai'i 96813-3484 PBR Hawaii & Associates, Inc. 1001 Bishop Street, Michael Shibata

Request for comments on the proposed Gartley Hall renovation, Mānoa, O'ahu, TMK: 2-8-023:03. Re:

Aloha e Michael Shibata,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated August 12, 2008. OHA has reviewed the project and offers the following comments. OHA is pleased that the applicant intends to renovate using LEED guidelines and seeking a certified Silver level of green building. (DEA, pages eight and 15) OHA does suggest that brief summary, however, be provided in section 2.0 that describes exactly what is proposed in this renovation so that reviewers can offer better comments and better shape this proposal,

OHA does note that the approving agency is exactly the same as the land owner and both are somewhat related to the applicant as listed on pages two and three of the DEA. This does look somewhat awkward in terms of an unbiased procedure and review. Otherwise, we have no further comments to make at this time.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any

Michael Shibata August 22, 2008 Page 2

FAX (808) 594-1865

significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division shall be contacted.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold at (808) 594-0263 or e-mail him at granta@oha.org.

'O wau iho nö me ka 'oia'i'o,

Cuylew, 100

Clydé W. Nāmu'o Administrator



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CARLUKU OFFICE "S"Neb Calloop, Suite 4 Sabid to Howston ("et 1), "B (A. (Ste.) 233, "S. S.

September 25, 2008

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

Attn: Mr. Grant Arnold

DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UNIVERSITY OF HAWAYI AT MÅNOA GARTLEY HALL RENOVATION SUBJECT:

Dear Mr. Nāmu'o,

Thank you for your letter dated August 22, 2008 (your reference number: HRD08/3714). We have reviewed your letter and provide the following responses. As requested, additional project information has been included in Section 2.2 of the Final Environmental Assessment. _;

Please note that Section 343-5(b), Hawai'i Revised Statutes (HRS), provides for the acceptance of an environmental disclosure document by an agency proposing ۲i

In accordance with Section 6E-46.6, FIRS, and Chapter 13-300, Hawai'i Administrative Rules, should any significant cultural deposits or human skeletal remains be encountered during project construction, work shall stop in the immediate vicinity, and the State Historic Preservation Division shall be contacted. eri.

Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Sincerely,

ALAND JEANA Michael S. Shibata Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa ö

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BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU 630 SOUTH BERETANIA STREET HONOLULU, HI 96843



CRAIG I, NISHIMURA, Ex-Officio BRENNON T. MORIOKA, Ex-Officio RANDALL Y. S. CHUNG, Chekman SAMUEL T. HAYA ALLY J. PARK ALLY J. PARK ROBERT K. CUNDIFF MARG C. TILKER

MUFI HANNEMANN, Mayor

DEAM A. NAKANO Deputy Manager and Chief Engineer

CLIFFORD P. LUM Manager and Chief Engineer

August 22, 2008

Mr. Michael Shibata

PBR Hawaii & Associates, Inc. 1001 Bishop Street

ASB Tower, Suite 650

Honolulu, Hawaii 96813-3484

Dear Mr. Shibata:

Subject: Your Letter Dated August 5, 2008 on the Draft Environmental Assessment for the Proposed Gartley Hall Renovation, University of Hawaii at Manoa, TMK: 2-8-23:3

Thank you for the opportunity to comment on the proposed renovations.

The comments in our letter dated June 20, 2008, which is included in the document, are still applicable

If you have any questions, please contact Robert Chun at 748-5443.

Very fruly yours,

KEITH S. SHIDA

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Program Administrator Customer Care Division

cc: Office of Environmental Quality Control

Water for Life . . . Ka Wai Ola



THOMASS, WITTIN, ASI, A
President

R.STANDUNCAN, 191A Lacrette Une-President

RUSSELL V.J.CHUNG, FASIA Uventra Visc President MACTAL SHIREL KUSU Vice President GRANT CMURAKAMLAICP

CHARRIAN ENERGY

WEFRANKIRANDI, EAST C. Chairman Finestres ASSOCIATIS

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WALLUKU OFFICE For With Salzo p. Sune d. Sandre Hasser West, 1271 Tel. core; 212,28, 8

Mr. Keith S. Shida, Program Administrator Customer Care Division City and County of Honolulu 630 South Beretania Street Honolulu, Hawai'i 96813 Board of Water Supply

Attn: Mr. Robert Chun

UNIVERSITY OF HAWAIT AT MĀNOA GARTLEY HALL RENOVATION SUBJECT:

Dear Mr. Shida,

Thank you for your letter dated August 22, 2008. We acknowledge that the Board of Water Supply comments provided in a letter dated June 20, 2008, on the pre-consultation for the Draft Environmental Assessment, are still applicable.

Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Sincerely,

March Wilde

Michael S. Shibata

Planner

Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa 8

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715 SOUTH KING STREET, SUITE 311 O HONOLIRU, HAWAII 95813 O AREA CODE 888 O PHONE: 758-7782 O FAX: 75\$-7792 CITY AND COUNTY OF HONOLULU DEPARTMENT OF COMMUNITY SERVICES

MUFI HANNEMANN MAYOR



DEBORAH KIM MORIKAWA DIRECTOR ERNEST Y. MARTIN DEPUTY DIRECTOR

August 11, 2008

Mr. Michael Shibata

Honolulu, Hawaii 96813 PBR Hawaii ASB Tower, Suite 650 1001 Bishop Street

Dear Mr. Shibata:

Subject: University of Hawaii at Manoa Gartley Hall Renovation Draft Environmental Assessment TMK: (1) 2-8-023:003

Thank you for providing us with the opportunity to review and comment on the University of Hawaii at Manoa Gartley Hall Renovation project. We have determined that the project will have no impact on the projects and programs of the Department of Community Services.

We appreciate the opportunity to provide comments. Questions regarding this matter may be directed to Mr. Randall S.J. Wong at 768-7747.

Sincerely,

WMD/MAKM/MONKlawa Deborah Kim Morikawa

DKM:jv

Kathleen Cutshaw, University of Hawaii at Manoa cc: Office of Environmental Quality Control

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Department of Community Services 715 South King Street, Suite 311 City and County of Honolulu Ms. Deborah Kim Morikawa Honolulu, Hawai'i 96813

Attn: Mr. Randall S.J. Wong

UNIVERSITY OF HAWAII AT MĀNOA GARTLEY HALL RENOVATION SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR

Dear Ms. Morikawa,

Thank you for your letter dated August 11, 2008. We acknowledge your assessment that the project will have no impact on the projects and programs of the Department of Community Services. Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631,

Sincerely,

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Append Land

Michael S. Shibata Planner Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa ij

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DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11th FLOOR
HONOLULH ANNAI 89813
Fhoms: (308) 788-8460 • Fax: (309) 528-4687
Who site: YOUNDANGARD SERVERS

MUFI HANNEMANN MAYOR

RUSSELL H. TAKARA, P.E. DEPUTY DIRECTOR

August 28, 2008

Mr. Michael Shibata

PBR Hawaii & Associates, Inc. ASB Tower, Suite 650 1001 Bishop Street Honolulu, Hawaii 96813-3484

Dear Mr. Shibata:

Subject: Draft Environmental Assessment UHM - Gartley Hall Renovation

Thank you for giving us the opportunity to review the above Draft Environmental Assessment.

The Department of Design and Construction does not have any comments to offer at this time.

Very truly yours,

FOR Eugene C. Lee, P.E. Director / Eunal vers

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THOMASS, WITTEN, ASI,A President

RATAN DUNGAN, ASLA Executive Une-President

RESELVE CHUNGENSCA Frontie Vor Pesukar

W.FRANKBRANDE EASTA Chairman Lumites

Dear Mr. Lee,

IOMSCHNTLLAILP Semm Tesecutic

Thank you for your letter dated August 28, 2008. We acknowledge that the Department of Design and Construction does not have any comments to offer at

Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

ANYMOND'L IRGA, ASP.A

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Sincerely,

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Department of Design and Construction Mr. Eugene C. Lee, P.E., Director

650 South King Street, 11th Floor City and County of Honolulu

Honolulu, Hawai'i 96813

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DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UNIVERSITY OF HAWAII AT MÅNOA GARTLEY HALL

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Michael S. Shibata

Planner

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Ms. Kathlerine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa

WALLING OFFICE 1787 Mai D. Loop, Sale of Madolio, Havari 96793 1274 301 (808) 212, 2578

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 Ulushia Street, Suite 215, Kepolei, Hawaii 96707 Phone: (808) 766-3343 * Fax: (808) 768 -3381 Website: www.honolulu.gov

IN REPLY REFER TO: DRM 08 - 713

CRAIG 7, NISHIMURA, P.E. DIRECTOR AND CHIEF ENGINEER GEORGE "XEOXI" MIYAMOTO DEPUTY DIRECTOR

September 2, 2008

Honolulu, Hawaii 96813 1001 Bishop Street ASB Tower, Suite 650 Mr. Michael Shibata PBR Hawaii

Dear Mr. Shibata:

Subject: Draft Environmental Assessment (DEA) Gartley Hall Renovation University of Hawaii at Manoa Thank you for the opportunity to review and comment on the DEA dated July 2008 for the proposed renovations to Gartley Hall.

We have no comments to offer as the improvements proposed in the DEA are within State property and will have negligible impact on our facilities and operations.

Should you have any questions, please call Charles Pignataro of the Division of Road Maintenance, at 768-3697.

Sincerely,

Craig I. Nishimura, P.E. Director and Chief Engineer

University of Hawaii at Manoa (Attention: Kathleen Cutshaw) c: Office of Environmental Quality Control

PLANKING - LANDSCAPE ARCHITECTURE - INVIRONMINTAL STUDIES - ENTILLMENTS - FERMITTING - GRAPHIL DESIGN



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STANDUM ANAMA Membe Dee President

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Department of Facility Maintenance City and County of Honolulu 1000 Uluohia Street, Suite 215 Director and Chief Engineer Mr. Craig I. Nishimura, P.E. Kapolei, Hawai'i 96707

Attn: Mr. Charles Pignataro

UNIVERSITY OF HAWAI'I AT MÄNOA GARTLEY HALL ASSESSMENT ENVIRONMENTAL RENOVATION DRAFT SUBJECT:

Dear Mr. Nishimura,

Thank you for your letter dated September 2, 2008 (your reference number: DRM 08-713). We acknowledge that the Department of Facility Maintenance has no comments to offer as the improvements proposed in the Draft Environmental Assessment are within State property and will have negligible impact on your facilities and operations. Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631

Sincerely,

Spect Base

Michael S. Shibata

Planner

Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mãnoa ដូ

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CITY AND COUNTY OF HONOLULU DEPARTMENT OF PLANNING AND PERMITTING

650 SQUTH KING STREET, 7TH FLOOR + HOMOLULU, HAWAH 96813 TELEPHONE, (808) 768-8000 • FAX; 1808) 527-5743 INTERNET: www.hombingov • DEPT, WEB SITE: www.kenahludap.org



September 8, 2008

DAVID K, TANOUE DEPUTY DIRECTOR 2008/ELOG-1939(LK)

> Honolulu, Hawaii 96813 ASB Tower, Suite 650 Mr. Michael Shibata 1001 Bishop Street PBR Hawaii

Dear Mr. Shibata

Subject: Draft Environmental Assessment University of Hawaii at Manoa 2444 Dole Street -- Manoa Tax Map Key 2-8-23: 3

renovation of Gartley Hall at the University of Hawaii at Manoa (University) and offer the We have reviewed the Draft Environmental Assessment (DEA) for the proposed following comments:

capacity of the Special Events Arena (now the Stan Sheriff Center) was approved The University is currently operating under the Plan Review Use Permit (PRU) No. 88/PRU-3 (Resolution No. 89-411, CD-2), approved on December 13, 1989, Manoa campus. A major modification to the master plan to increase the seating was also approved for the redevelopment of Frear Residence Hall by Resolution by Resolution No. 92-286, CD-1, FD-1. A major modification to the master plan for the Five-Year Master Plan for the expansion of the University of Hawaii No. 06-255,CD1,

The PRU Permit (No. 94/PRU-3) for the 1994 Long Range Development Plan was reviewed by the DPP and transmitted to the City Council. The resolution (No. 95-278) was introduced, but not adopted within one (1) year of the date of introduction, and, therefore was deemed filed, i.e., Resolution No. 95-278 was

Hawaii, Manoa Campus 2007 Update (LRDP). However, the Department of Planning and Permitting (DPP) has not reviewed, and the City Council has not approved, an updated LRDP for the University under a new Plan Review Use The DEA makes reference to a Long Range Development Plan, University of (PRU) permit.

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Mr. Michael Shibata September 8, 2008

Although the updated master plan has not been approved, the proposed project how the proposal is consistent with the Long Range Development Plan (LRPD) involves the renovation of an existing building and could be allowed under the existing PRU permit. Therefore, the applicant should include a discussion on description of the proposed project including plans of the proposed work. Whether the proposal requires a minor modification to the PRU permit will be determined when the additional information is submitted for review. (Resolution No. 89-411, CD-2). The applicant should also provide a detailed for the Manoa campus approved under the PRU Permit No. 88/PRU-3 က်

If you have any questions, please contact Lynne Kauer of our staff at 768-8016.

Very fruity yours,

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Department of Planning and Permitting Henry Eng, FAICP, Director

cc: Office of Environmental Quality Control

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September 25, 2008

THOMASS, WIFTIN, ASLA

Department of Planning and Permitting Mr. Henry Eng, FAICP, Director 650 South King Street, 7th Floor City and County of Honolulu Honolulu, Hawai'i 96813 RUSSELA, CHUNG IASLA Exeudiy Vey Presiden R.STAN DUNGAN, AMA VINCLNESHIGERON i ice-Presulent

Attn: Ms. Lynne Kauer

GRANT T. MURAKAMI, AICP Principal

CHAIRMANIAGRITUS

W. FRANK BRANDI, EASTA

Chairman I menter

ASSOCIATIS

RAYMOND TRUCK, 151 V. FOM SCHNILL, ARP Senter Associate

Senan Associate

KI'VIN K, NISHIKAR'A, ASI A

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UNIVERSITY OF HAWAI'I AT MĀNOA GARTLEY HALL DRAFT ENVIRONMENTAL ASSESSMENT FOR RENOVATION SUBJECT:

Dear Mr. Eng,

Thank you for your letter dated September 8, 2008 [your reference number: 2008/ELOG-1939(LK)]. We have reviewed your letter and provide the following responses.

- under the Plan Review Use permit (PRU) No. 88/PRU-3 (Resolution No. 890411, CD-2), approved on December 13, 1989, for the Five-Year Master Plan for the expansion of the University of Hawai'i at Manoa campus. We also appreciate the information provided on subsequent modifications to 1. Thank you for pointing out that the University is currently operating the currently approved PRU and the status of PRU Permit No. 94/PRU-3.
- We acknowledge that the Department of Planning and Permitting (DPP) has not reviewed the Long Range Development Plan, University of Hawaii, Manoa Campus 2007 Update (LRDP). d
- We concur with your assessment that the proposed project involves the renovation of an existing building and could be allowed under the existing PRU permit. A discussion on how the proposed project is consistent with the LRDP for the UH Manoa campus approved under the PRU Permit No. 88/PRU-3 (Resolution No. 89-411, CD-2) will be included In addition, a detailed description of the proposed project will be included in Section 2.2 of the in the Final Environmental Assessment. Final Environmental Assessment. 33

PLANNING - LANDSCAPF ARCHITECTURE - FUVIRONMINTAL STUDIES - ENTITLEMENTS - PLRUITLING - GRAPHIC DISIGN

Mr. Henry Eng SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UNIVERSITY OF HAWAIT AT MĀNOA GARTLEY HALL RENOVATION September 25, 2008

Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Sincerely,

March Strade

Michael S. Shibata

Planner

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Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa

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DEPARTMENT OF TRANSPORTATION SERVICES

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR HONOLULU, HAWAII 98813 Phone: (808) 768-8305 • Fax: (808) 523-4730 • Internet www.honolulu.gov



MUFI HANNEMANN MAYOR

RICHARD F. TORRES DEPUTY DIRECTOR

TP8/08-274026R

WAYNE Y. YOSHIOKA DIRECTOR

September 5, 2008

Mr. Michael Shibata PBR Hawaii

Honolulu, Hawaii 96813 ASB Tower, Suite 650 1001 Bishop Street

Dear Mr. Shibata:

Draft Environmental Assessment (EA) for University of Hawai'i at Manoa Gartley Hall Renovation Subject:

This is in response to your August 5, 2008, letter requesting our review of and comments on the proposed UH Gartley Hall renovation project. We offer the following comments to the DEA.

The final EA report should address whether additional onsite parking for the building will be included as part of the renovation project. Further, any loading facilities for the building should be accommodated on site. Should you have any questions on the matter, please contact Mr. Brian Suzuki at 768-8349.



PRINCIPALS
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R.STAN DUNGAN, AMA. Ex ciding Ure-President

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GRANTEMURAKAMI, AICP Principal

WEERANG BRANDI, LASIA Chairman Popellis

AAYMOND T. BIGA, ASI,A httior, beogrie TOMING HINTELAREP Settion: Associate

ASSOCIATIS

SEVEN KANSHIRAWA, ASEA

KIMEMIKAMIYETS, ELID AP Asor*iat*i

SCOTTMERAKAMI, ASLAJI ILDAP Associata SCOTTALIKAABIRGO See inte

DACHLNG DONG, LLUDAP Associate

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September 25, 2008

Department of Transportation Services Mr. Wayne Y. Yoshioka, Director

City and County of Honolulu 650 South King Street, 3rd Floor

Honolulu, Hawai'i 96813

Attn: Mr. Brian Suzuki

VINCENT SHIGHENI Une President

CHARRIAN EMERITUS

DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UNIVERSITY OF HAWAI'I AT MĀNOA GARTLEY HALL RENOVATION SUBJECT:

Dear Mr. Yoshioka,

TP8/08-274026R). No additional onsite parking for Gartley Hall will be included as part of the renovation project, parking associated with the project is accommodated within the overall campus parking system. Currently, loading facilities for Gartley Hall are located at the School of Architecture Building. The University intends to maintain usage of the School of Architecture's loading Thank you for your letter dated September 5, 2008 (your reference number. facilities to service Gartley Hall.

Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Sincerely,

PATE LITTLE

Michael S. Shibata

Planner

Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa ပ္ပ

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4ONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street Honokky, Hawaii 96813-5007 Fax: 808-723-7111 Internet: www.honolutu.govft/ld Phone: 808-723-7139



MUFI HANNEMANN MAYOR

KENNETH G. SILVA FRE CHEF ALVINK, TOMITA DEPUTY FIRE CHIEF

September 2, 2008

PBR Hawaii & Associates, Inc. Suite 650, ASB Tower Mr. Michael Shibata

Honolulu, Hawaii 96813-3484 1001 Bishop Street

Dear Mr. Shibata:

Subject: University of Hawaii at Manoa - Gartley Hall Renovation

In response to your letter of August 5, 2008, regarding the above-mentioned subject, the Honolulu Fire Department reviewed the material provided and has no objections to the proposed project.

Should you have any questions, please call Battalion Chief Socrates Bratakos of our Fire Prevention Bureau at 723-7151.

Sincerely,

KENNETH G. SILVA Fire Chief

KGS/SY:bh

cc: Kathleen Cutshaw, University of Hawaii at Manoa Office of Environmental Quality Control

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PSSEEL V. LCHUNG, FASIA Norther View President INCLN FSHIGERIANI ICC President

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TANNING - TANDSCAPI ARCHITICTURE - FIVIRON WINTAL STUDIES - FATTITIEMETS - PFRMITTING - GRAPHIC DISIGN

Mr. Kenneth G. Silva, Fire Chief City and County of Honolulu Honolulu Fire Department

636 South Street

Honolulu, Hawai'i 96813-5007

Attn: Battalion Chief Socrates Bratakos

DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UNIVERSITY OF HAWAIT AT MÅNOA GARTLEY HALL RENOVATION SUBJECT:

Dear Chief Silva,

Thank you for your letter dated September 2, 2008. We acknowledge that the Honolulu Fire Department has no objections to the proposed project.

Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate

to contact me at 521-5631

Sincerely,

Street Level

Michael S. Shibata Planner Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa ö

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POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU 801 SOUTH BERETAMIA STREET - HONOLULU, HAWAII 98813 TELEPHONE: (808) 529-3111 - INTERNET: www.honolulupd.org

MUFI RANNEUANN WAYOR

OUR REFERENCE BS-KP

PAUL D. PUTZULU Rari a, godsey Deputy chiefs SOISSE P CORREA CHIEF

August 18, 2008

Mr. Michael Shibata, Planner PBR Hawaii and Associates, Inc. ASB Tower, Suite 650 1001 Bishop Street

Honolulu, Hawaii 96813-3484

Dear Mr. Shibata:

This is in response to your letter of August 5, 2008, requesting comments on a Draft Environmental Assessment for the University of Hawaii at Manoa's Gartley Hall Renovation project.

This project should have no significant impact on the facilities or operations of the Honolulu Police Department. If there are any questions, please call Major Robert Green of District 7 at 529-3362 or Mr. Brandon Stone of the Executive Office at 529-3644.

Sincerely,

BOISSE P. CORREA Chief of Police

T. Hombood d

Support Services Bureau DEBORA A. TANDAL Assistant Chief of Police

cc: OEQC

Ms. Kathleen Cutshaw, UHM

Serving and Protecting With Aloha



THOMASS, WITTIN, ASEA President

R.STANDYNGAN, AND FROMPIN FOR PRESIDER

Mr. Boisse P. Correa, Chief of Police

RUSSELLY, CHUNGLISELA Frontier Vier President

City and County of Honolulu

Police Department

801 South Beretania Street Honolulu, Hawai'i 96813 VINCENT SHIGERFUL Vice Preadest

GRANT TAIURAKAMI, AICP Principal

Attn: Major Robert Green/Mr. Brandon Stone

CHAIRMANTAIRRITES W. PRANKBRANDI, EASIA Chairman Lumans

subject:

DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UNIVERSITY OF HAWAIT AT MĀNOA GARTLEY HALL

RENOVATION

ASSOCIATIS

Dear Chief Correa,

TOMSCHNULL, AICP

RAYMOND THIGA, ASI A STREET A SHERIF

Thank you for your letter dated August 18, 2008. We acknowledge your assessment that the project should have no significant impact on the facilities or operations of the Honolulu Police Department.

Thank you again for your participation in the Environmental Assessment process. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

KEVINK, MSHIRAWA, ASI A Usor nafi

KIMI MIKAMI YUTALI DAP Tsoraife

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Sincerely,

Parel Stade

Michael S. Shibata

Planner

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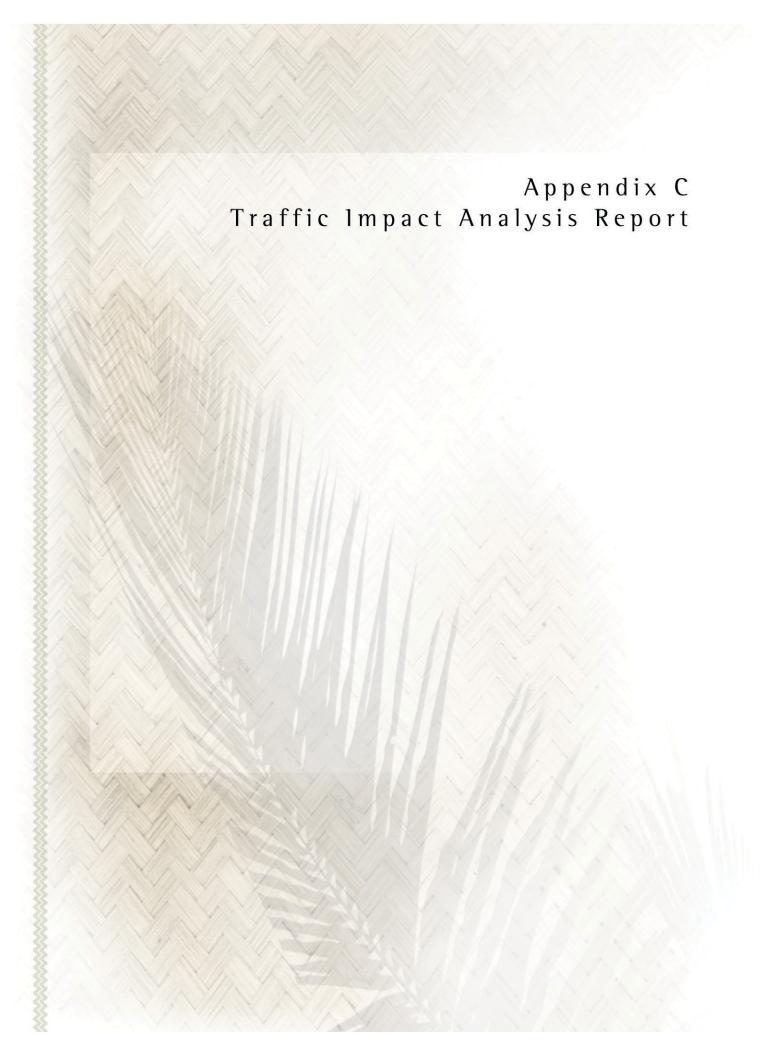
Ms. Katherine P. Kealoha, Office of Environmental Quality Control Ms. Kathleen Cutshaw, University of Hawai'i at Mānoa ÿ

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TRAFFIC IMPACT ANALYSIS REPORT UNIVERSITY OF HAWAII AT MANOA LONG RANGE DEVELOPMENT PLAN 2007 UPDATE (CATEGORY I)

October 26, 2007

Prepared for:

Group 70 international



Austin, Tsutsumi & Associates, Inc. Civil Engineers • Surveyors 501 Sunner Street, Suite 521 Honolulu, Hawaii 96817-5631 Telephone: (808) 535-3646 Fassimie: (808) 526-1267 E-mail: atahnl@atahawaii.com Honolulu • Wailuku, Hawaii

TRAFFIC IMPACT ANALYSIS REPORT

University of Hawaii at Manoa Long Range Development Plan 2007 Update (Category I) Manoa, Honolulu, Hawaii

Prepared for

Group 70 International

Prepared by Austin, Tsutsumi & Associates, Inc.

Civil Engineers • Surveyors Honolulu • Wailuku, Hawaii

October 26, 2007

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TRAFFIC IMPACT ASSESSMENT REPORT

University of Hawaii at Manoa

Long Range Development Plan 2007 Update (Category I)

Manoa, Honolulu, Hawaii

INTRODUCTION

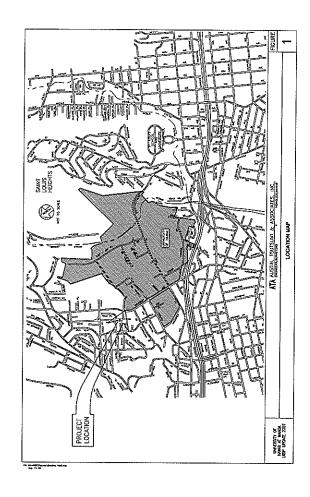
This report documents the findings of a traffic study conducted by Austin, Tsutsumi & Associates, Inc. (ATA) to evaluate the potential traffic impacts resulting from the University of Hawaii Long Range Development Plan 2007 Update – Category I, which shall be referred to hereinafter as "LRDP".

A. Background

As stated in the LRDP, throughout its early years, the University of Hawaii at Manoa (UHM) was developed without the benefit of a formalized development plan. In 1987, the first LRDP was completed and adopted, with the goal of coordinating growth and removing vehicular traffic from the center of its campus. The LRDP was subsequently updated in 1994, and is in the process of being updated for a second time.

B. Location

The University of Hawaii, Manoa Campus (UHM) is situated at the entrance to Manoa Valley, and is bordered by the communities of Saint Louis Heights, Molillii, and Manoa. The H-1 Freeway lies just south of UHM. Figure 1 shows the project location.



C. Project Description

The intent of this report is to assess the potential traffic impacts arising from the LRDP. The current plan includes numerous building and parking improvements, including:

- Law School Expansion
- Campus Center Expansion to the Northeast
- Instruction Building and Henke Hall Site
- Kennedy Theatre Expansion
- Parking Structure at Kennedy Theatre (480 parking Stalls)
- Parking Structure IIB/Bookstore (900 Parking Stalls)
- Research Buildings North and East of Biomedical Building
- Research Space -- Infill of South Courtyard of Biomedical Building
- Research Buildings Mauka Campus
- Instruction Building College of Education
- I.T.S. Bilger Hall Addition, Phase II
- Media Facilities at KHET Site
- Johnson Hall Replacement Dormitory
- Hale Noelani Replacement Dormitory
- Faculty Housing Waahila Ridge or Mauka Campus
- Klum Gym Replacement
- School of Hawaiian Knowledge

Relative to traffic analysis, the additional parking structures will be the only part of the LRDP that will significantly affect traffic operations along the roadways within the area. This is due to the fact that traffic projections for

Universities are generally based upon student enrollment, which is not projected to increase (see Section IV). See Figure 2 for Site Plan.

Study Methodology

This study will address the following:

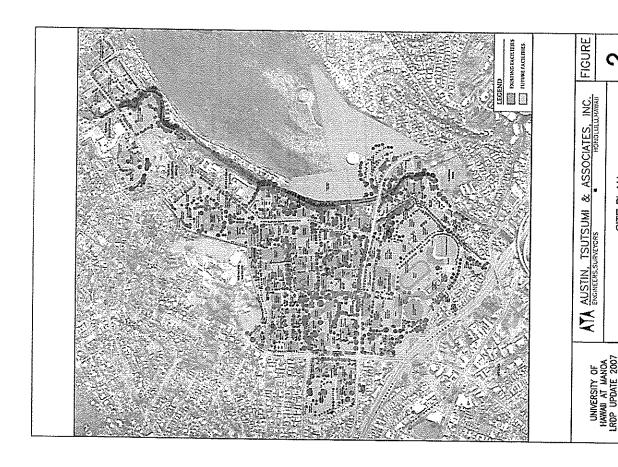
- Existing traffic operating conditions at key locations within the study area.
- Base Year 2017 (buildout year for LRDP) traffic projections (without LRDP) including traffic generated by a defacto growth rate. Note: LRDP Category I includes improvements for a timeframe of 5-10 years.
- Identify potential traffic mitigation measures for the Base Year 2017
- Trip generation and traffic assignment characteristics.
- 5. Determination of the impact of Project-generated traffic.

Recommendations for roadway improvements or other mitigative measures, as appropriate, to reduce or eliminate the adverse impacts resulting from traffic generated by the LRDP.

E. Definitions

- Base Year 2017 describes scenario where vehicular traffic volumes for the year 2017 are projected without the traffic generated by the LRDP. In simple terms, this is the "no-build" or "do-nothing" alternative.
- High, or Heavy Turning Movement Volume a subjective term that for this
 report; shall be used to describe conditions where the turning movement
 volume forms a significant component of the traffic processed through the
 intersection, and noticeably reduces capacity along the main arterial. This
 term can apply to a single heavy turning movement, or the collective effect of
 all turning movements.
- Mitigation applies to recommendations aimed at improving unsatisfactory traffic conditions (i.e. LOS = F, volume/capacity ratio>1) experienced as a result of Base Year 2017 conditions.
- Year 2017 with Project describes estimated vehicular traffic volumes for the year 2017 with the traffic generated by the LRDP.

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- Level-of-Service (LOS) as based on The Highway Capacity Manual —
 Special Report 209 (HCM), dated 2000, LOS is a qualitative measure used to
 describe the conditions of traffic flow at intersections. Values range from
 LOS A (minimal delay) to LOS F (congested).
- Trips for the purposes of this report, vehicular trips traversing the roadway network. Note that this term can also signify other modes of transportation, however vehicular trips will be the only trips considered in this report.
- For a complete glossary of terms, refer to Appendix E.

EXISTING CONDITIONS

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General

UHM has been divided into three (3) distinct areas throughout the LRDP

The Central Campus is bounded by University Avenue, Dole Street, East-West Road, Maile Way, and extends mauka to Pamoa Road, between Mid-Pacific Institute and Saint Francis School. The other part of the Central Campus is the College of Education, which is bounded by University Avenue, Metcalf Street, Hoonanea Street, and Dole Street. Vehicular access to the Central Campus is provided via the Dole Street/East-West Road and University Avenue/Maile Way intersections.

The Upper Campus is bounded by Maile Way, Mid-Pacific Institute, Pamoa Road residences, and Saint Francis School.

The Makai Campus, also called the "Quarry" or "Lower Campus" is bounded by Dole Street, University Avenue, the H-1 Freeway, and Manoa Stream. Access to the Makai Campus is provided via Lower Campus Road at Dole Street, Old Waialae Road at Kalei Road, Varsity Place in Varsity Circle, and a direct off-ramp connection from the westbound H-1 Freeway.

Roadway System

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The following are brief descriptions of the existing roadway network in the vicinity of UHM:

SITE PLAN

<u>University Avenue</u> is a six-lane, north-south major collector roadway in the vicinity of UHM. North of Maile Way, the roadway narrows to two (2) lanes. South of The H-1 Freeway, the roadway narrows to four (4) lanes with channelization.

In addition to UHM, this roadway serves as one (1) of two (2) primary access roads into Manoa Valley, which is comprised primarily of residential land uses. South of UHM, on-ramps and off-ramps to the Eastbound/Westbound H-1 Freeway are provided.

University Avenue ultimately terminates at Ala Wai School.

H-1 Freeway is a six-lane divided freeway in the vicinity of UHM. Onramps and Off-ramps to University Avenue and Old Waialae Road are provided in the vicinity of UHM.

<u>South King Street</u> is a five-lane, one-way eastbound major arterial west of University Avenue. East of University Avenue, the road combines with its westbound couplet Beretania Street and continues as a six-lane, two-way Major Arterial, eventually terminating at its intersection with Kapahulu Avenue.

Berelania Street is a three-lane, one-way westbound arterial west of University Avenue. Beretania Street begins at University Avenue when it recombines with South King Street.

Waialae Ayenue is a six-lane, two-way east-west arterial roadway in the vicinity of UH Manoa. Contra-flow operation occurs during PM peak hour of traffic.

East-West Road is a two-lane UHM campus road that provides access from Dole Street onto the heart of UHM's campus.

<u>Dole Street</u> is a four-lane, two-way east-west collector road between University Avenue and East-West road, where it is otherwise a two-lane collector road.

<u>Saint Louis Drive</u> is generally a two-lane, two-way north-south collector road. South of its intersection with Dole Street, this road provides one lane in the northbound direction, and three lanes in the southbound direction.

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<u>Metcalf Street</u> is a two-lane, two-way east-west collector road that begins at its intersection with Alexander Street (near H-1 Freeway Westbound On-Ramp) to the west and terminates at University Avenue, where it continues eastward as Campus Road, which is incidentally inaccessible to vehicles from University Avenue.

<u>Maile Way</u> is a two-lane, two-way east-west minor collector raod that begins at its intersection with Oahu Street and terminates within the University Campus at its intersection with East-West Road.

<u>Varsity Place</u> is a two-lane, two-way, east-west county road that begins at its intersection with University Avenue and terminates at its intersection with Varsity Circle.

Old Walalae Road is a three-lane, one-way westbound arterial road, which begins at Walalae Avenue to the East and ends at near the.Humane Society.

Figure 3 shows the existing lane configuration at the study intersections.

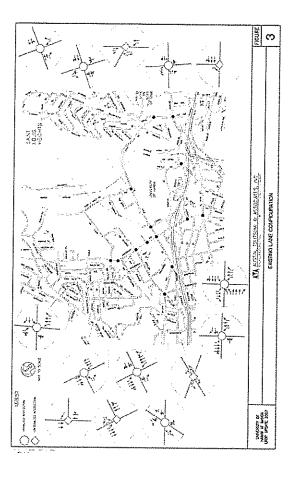
C. Existing Traffic Volumes

The hourly turning movement data utilized in this report was collected by ATA between Tuesday, April 20 and Thursday, April 22, 2004. Traffic Counts were redone at the University Avenue/Dole Street intersection on September 13, 2007. The counts showed a slight decrease in volume during the PM peak hour of traffic, and a negligible increase during the AM peak hour of traffic.

Due to proximity to UHM, the following intersections were studied:

- King Street/Beretania Street/Waialae Avenue/University Avenue (signalized)
- University Avenue/Dole Street (signalized)
- University Avenue/Sinciair Parking Lot (signalized)
- University Avenue/Metcalf Street (signafized)
- University Avenue/School of Architecture entrance/exit (unsignalized)
- University Avenue/Maile Way (signalized)

- Wilder Street/Dole Street (unsignalized)
- Wilder Street/Metcalf Street (signalized)
- Dole Street/Lower Campus Road (signalized)
- Dole Street/East-West Road (signalized)
- Dole Street/Saint Louis Heights Drive (unsignalized)
- Waialae Avenue/Saint Louis Heights Drive (signalized)
- University Avenue/Varsity Place (signalized)



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Based on traffic count data, the peak hours of traffic were determined to be from 6:45 AM to 7:45 AM and 4:30 PM to 5:30 PM on weekdays. The traffic count data is provided in Appendix A. See Figure 3 for existing lane configurations.

D. Existing Traffic Conditions Analysis and Observations

Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. The Highway Capacity Manual — Special Report 209 (HCM), dated 2000, methods for calculating volume to capacity ratios, delays and corresponding Levels of Service were utilized in this study. LOS definitions for signalized intersections are provided in Appendix B.

The Manual on Uniform Traffic Control Devices, 2003 edition (MUTCD) recommends that successive intersections along a major arterial and within proximity of less than a half of a mile of each have their timing optimized and coordinated in order to facilitate optimal vehicular flow along the arterial. Currently, most of the signalized intersections along the following arterials meet this criterion:

- South King Street,
- Beretania Street,
- University Avenue (only between Varsity Place and King Street)

The University Avenue/Dole Street and Dole Street/Lower Campus Road intersections are not currently coordinated. Coordination is accomplished by ensuring that each intersection within the coordinated region is bound by the same cycle length (or multiples thereof), and that the through traffic on the major arterial in the peak direction is allowed to flow at carefully planned offsets (see Appendix E for definition) through consecutive intersections. This reduces the "stop and go" effect that drivers experience on uncoordinated systems, where red lights sometimes appear at each successive intersection, thus increasing motorist frustration and delay.

As a consequence of coordination and fixed-cycle lengths in general, vehicles traversing the minor approaches and those making the left-turn movement off of the main road offen must wait at the intersection, despite the absence of vehicles traversing the main road.

Methodology

Analysis for the study intersections was performed using Synchro, which is able to prepare reports based on the methodologies prescribed by the HCM. These reports contain control delay results, as based on intersection lane geometry, signal timing (including coordination and actuated minimums and maximums), and hourly traffic volume. Based on the vehicular delay at the intersection, a LOS is assigned (see Appendix B) as a qualitative measure of performance. These results, as confirmed or refined by field observations, constitute the technical analysis that will form the basis of the recommendations outlined in this report.

Regional Analysis

UHM lies at the base of Manoa, which is a primarily residential town, to which access provided solely through University Avenue and Punahou Street. Relative to vehicular travel to and from the campus, much of the regional traffic arrives via the H-1 Freeway, King Street, Beretania Street, or Waialae Avenue. During the AM and PM peak hours of traffic, regional congestion occurs along all of these major roads, which is consistent with conditions throughout much of the urbanized areas of Oahu.

Results of Intersection Analysis

The analysis and observations described below are based on prevailing conditions during the time at which the data was collected in 2004, and reassessed in 2007, with little noticeable change. Hereinafter, observations that are expressed as ongoing and current shall represent the conditions that prevailed at the times during which field observations were taken in 2004 and 2007.

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South King Street/Beretania Street/University Avenue

In addition to the Manoa and UHM traffic, this intersection experiences a heavy regional component along South King Street and Beretania Street during the peak hours of traffic. During the PM peak hour of traffic, queues in the eastbound direction along King Street at times extend beyond Star Market (approximately 1,000 feet) in all lanes.

Although other potential bottlenecks exist downstream along South King Street, one hindrance to vehicular flow in the eastbound direction near this intersection is the permitting of left-turns into driveways despite the absence of channelized left-turn lanes. This occurs between University Avenue and the Humane Society. This decreases the effective capacity of South King Street, as left-turning vehicles wait for openings in opposing traffic, which are few and far halvenen.

Westbound traffic along South King Street and Beretania Street in this area is generally constrained due to the prevailing regional congestion caused by commuters during the afternoon peak hour of traffic. Successive downstream bottlenecks occur at McCully Street, Punahou Street, Pilkoi Street, and Ward Avenue. Traffic generally queues back to the humane society.

As a result of this prevailing congestion, northbound and southbound traffic along University Avenue are also affected, wherein southbound traffic often must wait for two (2) or more traffic signal cycles before passing through the intersection.

University Avenue/Dole Street

Due to the fact that this intersection serves as a junction point between Manoa Residents, students accessing the Quarry Parking Lot and Central Campus, Molillii residences, and the H-1 Freeway, congestion occurs here.

One problem observed during the AM peak hour of traffic is that vehicles traveling in the northbound direction queue back beyond the H-1 Freeway off-ramps (approximately 1000 feet) due to:

- Prohibition of right-turn-on-red in the northbound direction, although
 an extraordinarily high number of right-turns occur (648) during the
 AM peak hour of traffic;
- Weaving pattern vehicles exiting the H-1 Freeway off-ramps in the northbound direction along University Avenue do not always make the right-turn. In fact, their destinations may include Saint Francis School, the Mid Pacific Institution, the University Lab School, Manoa, UHM's Maile Way Gate, Moilliil, and U-turns towards the south. As these vehicles exit, they attempt to move towards the center and left lanes while the prevalling queue hinders this movement. Furthermore, especially during the AM peak hour of traffic, after exiting the H-1 Freeway eastbound and westbound Off-Ramps, vehicles immediately move towards the left lane in order to make u-turns;
- Current information indicates that the University Avenue/Dole Street and the Dole Street/Lower Campus Road intersections are not coordinated. This could be a contributing factor to problems at these intersections.

The result of this is a vehicular queue that causes queues to extend through the H-1 Freeway off-ramps and onto the Freeway.

During the PM peak hour, congestion in the westbound direction queues back beyond the Dole Street/Lower Campus Road intersection and near the Law School Library. This often reduces the ability of vehicles to make the northbound left-turn out of Lower Campus Road onto Dole Street.

University Avenue/Sinclair Parking Lot

This intersection serves the Sinclair Library and Bachman Hall Parking Lots and the Bus Turnaround. The entering/exiting volume is relatively low. However, it has been observed that the busses have difficulty making westbound left-turn onto University Avenue.

University Avenue/Metcalf Street

Vehicles generally flow smoothly through this intersection.

University Avenue/School of Architecture Entrance/Exit

Vehicles generally flow smoothly through this intersection, which operates as right-in/right-out.

University Avenue/Maile Way

Although analysis indicates that this intersection operates at LOS B during the AM and PM peak hours of traffic, vehicular flow in the northbound is often impeded by:

- Narrowing of University Avenue to two (2) lanes immediately north of the University Avenue/Maile Way intersection,
- Occasional School Bus Stoppages (near the Mid-Pacific Institute) during the AM peak hour of traffic, and
- Operations at signalized intersection of University Avenue and Kaala Street, which incidentally provides access to the Mid-Pacific Institute.
 No chanelized lanes are currently provided at this intersection.

Wilder Avenue/Dote Street

While the high-volume H-1 Freeway off-ramp movements experience relatively unimpeded flow, through and left-turning traffic along Dole Street experience LOS F. Furthermore, downstream congestion occurs along Wilder Avenue during the PM peak hour of traffic.

Wilder Avenue/Metcalf Street

According to HCM analysis, this intersection operates at LOS E or better on all approaches during the AM and PM peak hour of traffic. However, downstream congestion does occur along Wilder Avenue in the westbound direction during the PM peak hour of traffic and in the eastbound direction during the AM peak hour of traffic.

Dole Street/Lower Campus Road

This intersection serves as the highest volume access road into the Makai Campus. Currently, 3,509 parking stalls exist within the Makai Campus. These stalls, in combination with drop-off/pick-up turn-around's at the Music Building

and Law School Parking Lot, contribute to the high turning movement volume into and out of this intersection.

During the AM peak hour of traffic, 490 vehicles make the eastbound right-turn into Lower Campus Road. Some of the congestion along University Avenue can be attributed to this.

During the PM peak hour of traffic, approximately 271 vehicles make the northbound left-turn out of Lower Campus Road and westbound onto Dole Street, whereupon they immediately meet the westbound queue generated by the University Avenue/Dole Street intersection.

Dole Street/East-West Road

This intersection operates relatively smoothly during both the AM and PM peak hours of traffic.

Dole Street/Saint Louis Heights Drive

Although traffic making the southeastbound left-turn experience LOS F during the PM peak hour of Traffic, the volume for this movement is low. Furthermore, traffic was observed to operate relatively smoothly at this intersection, with no significant queues occurring during the AM and PM peak hours of traffic.

Waialae Avenue/Saint Louis Heights Drive

During the AM peak hour of traffic, congestion was observed to occur in the westbound direction, where queues were observed to extend as far as 10th Avenue during the AM peak hour of traffic, primarily in the right and center lanes.

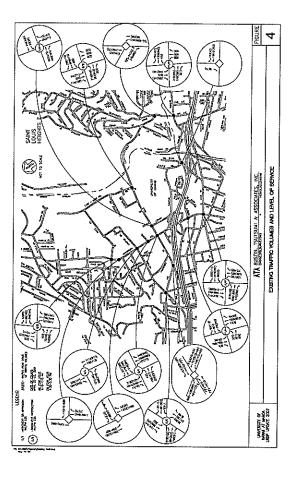
During the PM peak hour of traffic, similar congestion occurs in the westbound direction along Waialae Avenue. Although there is a brief reprieve west of Saint Louis Drive, congested conditions resume along Old Waialae Road, the H-1 Freeway and King Street further westward.

University Avenue/Varsity Place

Traffic at this intersection is affected by downstream conditions at the South King Street/Beretania Street/University Avenue intersection. Westbound queues sometimes extend as far back as Varsity Circle. To exacerbate matters, the left-turn movements into driveways and side streets are allowed in the

northbound and southbound direction immediately south of this intersection along University Avenue. Due to the absence of left-turn lanes along University Avenue, the capacity of this roadway segment is decreased significantly, primarily during the PM peak hour of Traffic.

Figure 4 shows the existing traffic volumes and overall LOS for the study intersections. See Table 1 for LOS for at individual turning movements.



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Existing Level of Service Summary				University Avenue/Metcalf Street	EBLT	EBRT	NBLT	NB TH	SB TH/RT	OVERALL	University Avenue/School of Architecture WB RT	ue/Malle Way	SEBLTTHIRT	NWB LT	NWB TH	NWB RT	NEG LI	NEG IX	SWBIT	SWB TH/RT	OVERALL		-	WB TH	WORL	SBLT	tcalf Street	EB LT/TH/RT	WB TH/LT	WBRT	SEBLI SEB TURT	NWB LT/TH/RT	OVERALL	r Campus Road	E8 TH	EBRT	WB LT/TH	NBRT	OVERALL
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* V/C ratio > 1.0 ** Effective LOS F Due to Downstream Conditions

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BASE YEAR 2017 SCENARIO (see section I.D. for definition) ij

Base Year 2017 = (Existing Traffic * Growth Factor)

Where Growth Factor = (1 + defacto growth rate) * 10

The Year 2017 was selected as the Base Year to reflect the time table for Category 1 of the LRDP (5-10 Years). Base Year 2017 projections were formulated by applying a defacto growth rate, described in the following section, to existing hourly vehicular traffic volumes,

Defacto Growth Rate ď

The State Department of Transportation (SDOT) performs 24-hour traffic counts annually at various locations on Oahu. Based on this data, it was Avenue, which is predicted to be approximately 1 percent, annually. By the year 2017, this equates to a 10.5 percent increase over existing conditions. No growth was projected near the University, since the LRDP projects that UHM's student enrollment will remain stable, and that not much more residential or possible to estimate the prevailing regional growth along King Street and Waialae commercial development will occur within the area.

Base Year 2017 Traffic and Analysis

œ

Based on the defacto growth rate, regional traffic will increase along King Street, Waiafae Avenue, and Beretania Street. However, most of the study intersections will experience a relatively stable demand, due to the fact that development and student base within the area is projected to remain constant for all intents and purposes.

LOS F conditions will continue to occur at the following intersections:

- South King Street/Beretania Street/University Avenue*
- University Avenue/Varsity Place*
- University Avenue/Dole Street*
- University Avenue/Sinclair Parking Lot*
- Dole Street/Wilder Avenue
- Dole Street/Lower Campus Road*
- Dole Street/Saint Louis Heights Drive

* V/C ratio > 1,0 ** Effective LOS F Due to Downstream Conditions

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- Waialae Avenue/Saint Louis Heights Drive
- * Indicates that Mitigation is proposed in Section III C.

While mitigation is proposed to address the intersections with asterisks after them, the remaining intersections will be discussed below.

Dole Street/Wilder Avenue

The northbound approach to this intersection is a busy freeway off-ramp, whose vehicular flow should not be impeded to accommodate minor street traffic. Wilder Avenue, in general, is congested downstream in the westbound direction during the AM and PM peak hours of traffic due heavy school traffic caused by Punahou and Maryknoll schools. Therefore, no mitigation is recommended for this intersection.

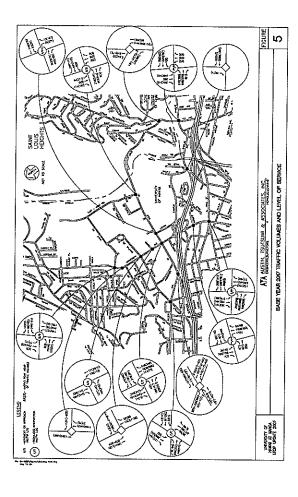
Dole Street/Saint Louis Heights Drive

While turning movement analysis indicates that the eastbound left-turn movement at this intersection will continue to operate at LOS F during the PM peak hour of traffic, this intersection was not observed to be problematic during the AM or PM peak hours of traffic. Furthermore, with only 25(45) vehicles making this turn during the AM(PM) peak hours of traffic, a traffic signal will not be warranted. No mitigation is recommended for this intersection.

Walafae Avenue/Saint Louis Heights Drive

This intersection currenlly operates at an observed LOS F during the AM and PM peak hours of traffic. However, due to limited right-of-way, no geometric improvements can be made at this intersection.

See Figure 5 for Base Year 2017 traffic volumes and Overall LOS.



C. Base Year 2017 Mitigative Measures

The Base Year 2017 mitigative measures are designed to improve conditions at intersections that are projected to operate unsatisfactorily during Base Year 2017, regardless of whether or not the LRDP is implemented.

University Avenue/Dole Street and Dole Street/Lower Campus Road

Mitigation is recommended to improve operating efficiency of this intersection. As discussed earlier, during the AM peak hour of traffic, there is a lack of capacity in both the northbound and westbound directions that generates vehicular queues that extend onto the H-1 Freeway's Westbound and Eastbound off-ramps at times, ultimately causing a safety hazard along the H-1 Freeway, as fast-moving vehicles encounter vehicles in queue. The improvements recommended below seek to reduce this congestion.

Intersection analysis indicates that that traffic in the northbound direction is and will continue to operate beyond its capacity. This problem can be addressed by the following modifications:

Phase

Reconfigure the westbound approach to the University Avenue/Dote Street intersection to incorporate an exclusive left-turn lane, a shared left-turn/through lane, and an exclusive right-turn lane, with storage extending approximately 100 feet east of the University Avenue/Lower Campus Road intersection. This mitigative measure could potentially necessitate the relocation of the historic Gateway structures located along University Avenue.

The effect of Phase I would be to eliminate over-capacity conditions. However, the southbound left-turn movement would still experience LOS F during the PM peak hour of traffic.

See Figure 6 for existing lane configuration, and Figure 7 for Phase I modifications.

Phase II

Reconfigure the northbound approach to the University Avenue/Dole Street intersection to incorporate three (3) exclusive through lanes and two exclusive right-turn lanes, the rightmost of which would directly connect with the H-1 Freeway Westbound Off-Ramp. In conjunction with this, modify the Dole Street/Lower Campus Road intersection to incorporate one (1) Eastbound through lane, an eastbound shared through/right-turn lane, and an exclusive right-turn lane. Note that these modifications could potentially necessitate the relocation of the existing monkeypod trees along University Avenue, and reduce the available parking within the Music Building Complex.

Phase II, when implemented without Phase I, would produce a similar result as phase I, in that over-capacity conditions would be eliminated, and that the southbound left-turn movement would continue to experience LOS F, while the eastbound and westbound approaches would experience LOS E during the PM peak hour of traffic.

hase t & II

HCM analysis indicates that the effect of implementing phases I and II in combination would improve the overall delay of the intersection from 73.1 (36.6) seconds during the AM (PM) peak hours of traffic to 38.8 (39.9) seconds, with all movements at the intersection operating at LOS E or better during both periods. It should be noted that at the Dole Street/Lower Campus Road intersection, the lane modification will reduce the number of lanes that drivers need to cross to enter the Lower Campus Road, thereby reducing capacity reductions caused by weaving movements.

It is recommended that Phases I and II be implemented as a mitigative measure, while recognizing that the intent of this geometric augmentation would be to improve conditions for vehicles traveling northbound along University Avenue. Although vehicular flow will also improve in the westbound direction during the PM peak hour of traffic,

such benefits would generally be realized locally, given that existing bottlenecks occur downstream at the following locations:

- University Avenue/H-1 Freeway Eastbound On-ramp
- University Avenue/H-1 Freeway Westbound On-ramp
- South King Street/Beretania Street/University Avenue
- Dole Street/Wilder Street
- University Avenue, south of Maile Way

Mitigation of these problems would require costly modifications, including improving congestion along the entire corridor. The H-1 Freeway, Beretania Street, and South King Street would all have to be widened to accomplish this. However, the implementation of the Rapid Transit System will ultimately reduce future vehicular traffic demand.

See Figure 8 for an illustration of Phases I and II,

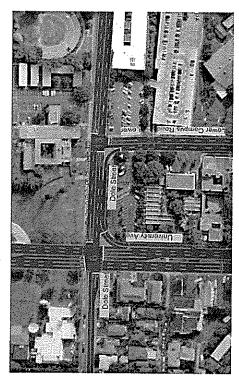


Figure 6: Existing Lane Configuration at University Avenue Intersections with Dole Street and Lower Campus Road

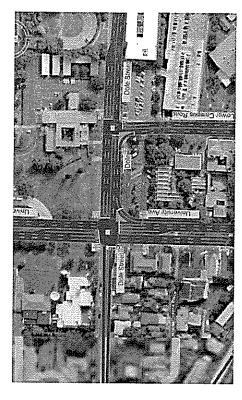


Figure 7: Phase I Modifications



Figure 8: Phases I and II Modifications

Turning Movement Restriction

During field observations, it was noted that along South King Street, east of University Avenue, and University Avenue in the Varsity Area, vehicular flow was hampered by the allowing of left-turns into driveways and small side streets.

rsity Area

Vehicles turning left from the southbound direction cause other vehicles to switch tanes to maneuver around them. Due to the lack of an acceptable gap in northbound traffic, these vehicles often cause those behind them to arrive at the South King Street/Beretania Street/University Avenue intersection after the signal indication has turned red. The resulting flow interruptions have implications along University Avenue in this area, due to the fact that the current cycle length at that intersection is 170 seconds. Effectively, all of the vehicles impacted by this problem will be delayed by a additional two minutes, fifty seconds as the traffic signal cycles through all of its phases again. Operations at the University Avenue/Varsity Place intersection are also affected by this problem.

Similarly, in the northbound direction left-turns impede the flow of the approximately 1000 vehicles (for both AM and PM peak hours of traffic) traveling in the northbound direction, sometimes reducing the upstream capacity of the South King Street/Beretania Street/University Avenue intersection.

South King Street - East of University Avenue

South King Street, east of University Avenue has become a bottleneck for eastbound traffic during the PM peak hour of traffic. It has been observed that vehicles traveling eastbound along South King Street are affected by vehicles making left-turns into driveways, and at the signalized intersection near the Seven Eleven/Aloha Gas station.

Based on the conditions described above, it is recommended that a dialogue be initiated between community members and the City to assess the potential for left-turn prohibitions during the PM peak hour of traffic for:

- Northbound and southbound University Avenue traffic, south of Varsity Place, and north of King Street
- Eastbound South King Street traffic, East of University Avenue and west of the Humane Society.

It is recognized that the merit of this mitigative measure will have to be balanced with the needs of the local community and businesses.

It should be noted that should these prohibitions be implemented, they would <u>not</u> eliminate LOS F at the South King Street/Beretania Street/University Avenue intersection. However, they would improve the efficiency of the intersection and the capacity of University Avenue and South King Street in the area.

University Avenue/Sinclair Library Driveway

While this intersection experiences a relatively low turning movement volume and operates at LOS B, the bus traffic that passes through the turnaround often have difficulty making the westbound left-turn out of the driveway. Therefore, it is recommended that a traffic signal be installed to facilitate this movement. In conjunction with this, it is recommended that the bus stop located along University Avenue, just north of Dole Street be relocated to the existing bus turnaround at this intersection.

University Avenue/Maile Way

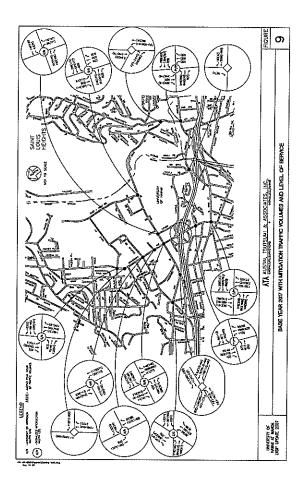
Although HCM analysis indicates that this intersection operates at LOS C(B) during the AM (PM) peak hours of traffic, existing operations have been observed to be worse, especially during the AM peak hour of traffic, where vehicles destined towards the Mid Pacific Institute and Saint Francis cause the downstream intersection (Kaala Street) to be overburdened. Currently, this intersection only provides a single lane at each approach, with no channelization (furning lanes). It is therefore recommended that a dialogue be initiated between community members and the City to assess the feasibility for widening the segment of University Avenue between Kaala Street and Maile Way to incorporate a second northbound lane. This lane would terminate at Kaala Street as an exclusive right-turn lane.

Figure 9 shows the traffic volumes and overall LOS. Table 2 compares the individual turning movement LOS for Base Year 2017 with/without mitigation with existing conditions.

Traffic Signal Coordination along University Avenue and Dole Street/Lower Campus Road

All of the signalized intersections along University Avenue between Dole Street and Maile Way, and the Dole Street/Lower Campus Road intersection are within approximately 1000 feet or less of each other. Therefore, in order to facilitate flow between these intersections, it is recommended that the following intersections be coordinated:

- University Avenue/Maile Way
- University Avenue/Metcaff Street
- University Avenue/Sinclair Library Parking Lot (New Signal)
- University Avenue/Dole Street
- Dole Street/Lower Campus Road



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TABLE 2
Base Year 2017 Level of Service Summary

	vnstream Conditions
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* V/C ratio > 1.9 ** Effective LOS F Due to Downstream Conditions

TABLE 2 Base Year 2017 Level of Service Summary	TABLE 2 evel of S	2 Service	Summa	≧		
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IV. YEAR 2017 WITH PROJECT SCENARIO (see section I.D. for definition)

Year 2017 with Project = Base Year 2017 + LRDP Traffic

A. Discussion

While the LRDP includes new buildings and parking structures, during its 5-10 year horizon, number of students is not projected to increase as a result of these additions. Generally for traffic studies, vehicular trips are generated using empirical correlations between known independent variables that are based upon data compiled by the Institute of Transportation Engineers (ITE). The compiled data is reduced into average trip rates or formulae. In the case of Universities, the only studied independent variable is the number of students.

However, despite the construction of an additional 1200 parking stalls as a result of the LRDP, the student population is not projected to increase. Logically, the potential users of the additional parking will be drawn from the pool of existing campus commuters that are either currently unable or unwilling to utilize campus parking. This report assumed that the additional vehicles that will park on campus will relocate from existing off-campus parking.

Effectively, while within the segment of University Avenue between Dote Street and Maile Way, and the segment of Dole Street between Lower Campus Road and East-West Road may see an increased amount of traffic as a result of this redistribution, areas exogenous to these segments will likely notice a reduction. Such areas are identified in the Parking Study, and include:

- Manoa,
- Saint Louis Heights,
- Dole Street (Near Cuitural Center), and
- Residential area west of Varsity

While the potential for trip reduction in these areas may occur, it would be overly presumptive to make assumptions to this point, especially since the future is unknown in regard to the possibility of permit parking for residents. Therefore, this report will conservatively assume that any areas outside of the aforementioned segments of University Avenue and Dole Street will experience no change as a result of the additional parking.

* V/C ratio > 1.0 ** Effective LOS F Due to Downstream Conditions

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B. Trip Generation

Although standard methods for trip generation are not applicable in this case, the Lower Campus, with relatively few entrances and exits, offers a good indication as to the number of vehicular trips that are generated during the peak hours of traffic relative to the number of parking stalls.

The parking study concluded that there are currently 3,509 stalls in the lower campus area. The proposed Phase IfB quarry parking lot will increase this number by 900 to 4409. Therefore, it is reasonable to assume that the total number of trips entering and extiting each of the three primary entrance/exits will increase by a factor of (900/3509), or twenty-six percent. Note that this should be conservative, given that trips entering/exiting the Dole Street/Lower Campus Road intersection also include drop-off/pick-up's via the music building parking build

Likewise, the Kennedy Theatre parking lot, while creating an additional 480 stalls, will be partially tempered by the removal of 140 stalls within the 10 year horizon, effectively increasing the central campus parking by approximately 300 stalls. Currently, there are 1991 stalls in the central campus. This number will be increased by 300, or fifteen percent.

C. Trip Distribution/Assignment

The additional traffic generated by the new parking facilities were distributed based on existing travel patterns, within the aforementioned segments of Dole Street and University Avenue.

D. Year 2017 with Project Analysis

The following discussion considers incremental traffic impacts of the LRDP, and based on the preceding discussion, is limited to the segment of University Avenue between Dole Street and Maile Way, and the segment of Dole Street between University Avenue and west of Saint Louis Heights Drive. Hereinafter, these segments shall be collectively referred to as the "affected region."

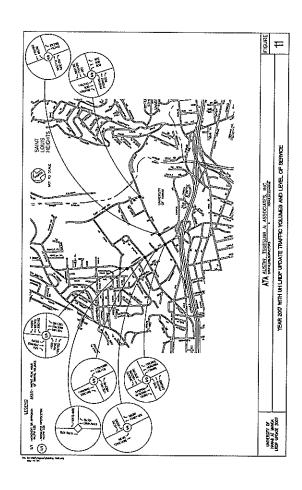
Operations at all of these intersections within the affected region will continue to operate at LOS $\rm E$ or better, with the exception of the University

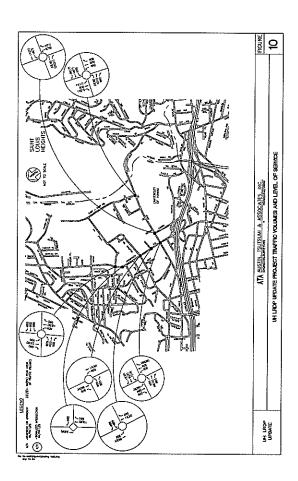
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Avenue/Maile Way intersection, which will continue to experience LOS F in the westbound direction as a result of signal coordination. However, the delay at this intersection is projected to be 91 seconds, which is only slightly higher than the 80 second LOS F threshold.

HCM analysis indicates that the University Avenue/Dole Street and Dole Street/Lower Campus Road intersections will be able to accommodate the projected increase in traffic, while maintaining LOSE or better and undercapacity conditions at all approaches. However, as stated earlier, the effectiveness of the proposed mitigative measures at the University Avenue/Dole Street intersection will be tempered by conditions downstream of the intersection, particularly in the southbound direction toward the H-1 Freeway onramps and the South King Street/Beretania Street/University Avenue intersection, all of which experience prevailing regional congestion during the AM and PM peak hours of Traffic. See Figures 10 and 11 for project traffic and overall LOS. See Table 3 for Individual turning movement LOS.





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* V/C ratio > 1.0 ** Effective LOS F Due to Downstream Conditions

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Year 2017 with LRDP			Intersection	Dole Street/East-West Road	ЕВ СТЛН	WB TH/RT	NB LT/TH/RT	SBLT/TH	SBRT	OVERALL	Dole Street/Saint Louis Heights Drive	NBLT	SEB LT	Weisise/Saint Louis Heights Drive	EB LT	EB TH	WB THIRT	SBLT	SB TH	SBRT	OVERALL

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Year 2017 with Project Recommended Improvements щі

No improvements are recommended beyond those outlined in Section Operations at the affected intersections will remain relatively constant without any substantial increase in delay. ≌

While the potential for improving the Old Waialae Road and Varsity Place Exits was considered, these improvements are generally not recommended. Discussion follows:

Old Waialae Road Entrance/Exit

Kaimuki, or Kapahulu Areas. Any vehicles from areas further east will likely utilize the Freeway exit to access the Makai Campus. Currently, incoming flow As an entrance, this access point services vehicles originating in Walkiki, does not experience significant difficulty entering the Entrance/Exit. As an exit, this access point services vehicles either destined for the H-1 Freeway (Eastbound - Indirect connection). The limited number of vehicles that freeway (westbound). South King Street (westbound), or the Kapahulu Area/H-1 utilize this exit during the PM peak hour of traffic immediately experience difficulty making this maneuver during the PM peak hour of traffic (when vehicles are more likely to exit), due to the following conditions:

- When accessing the H-1 Freeway Onramp (westbound), the queue from the H-1 Freeway spills back to beyond the Old Waialae Road Entrance/Exit.
- · When accessing South King Street (westbound), there is difficulty finding an acceptable gap in the prevailing flow along Old Waialae Road to immediately cross the two (2) lanes necessary to make this movement.
- The H-1 Freeway onramp (westbound) has a very short acceleration lane, which makes it difficult to enter the freeway at this focation.

Improvement of this vehicular gateway would require the installation of a traffic signal at the Old Waialae Road/Kalele Road intersection. This is not recommended, due to a lack of sight distance along Old Waialae Road.

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^{*} V/C ratio > 1.0 ** Effective LOS F Due to Downstream Conditions

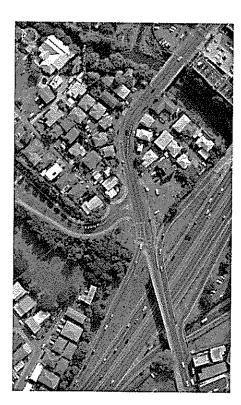


Figure 12: Old Waialae Road

Varsity Place Entrance/Exit

Access to this entrance/exit is relatively limited due to the limitation on where congestion is currently a problem. While roadside parking could be cleared, and the road widened to facilitate vehicular flow along Varsity Place to ingress/egress. Currently, Lower Campus Road intersects with Varsity Circle, and Ultimately Varsity Place. Varsity Place connects with University Avenue, these vehicles the benefits of such a change would only be realized during the PM peak hour of traffic, and could potentially decrease the capacity of University incorporate two lanes in the westbound direction towards University Avenue, Avenue during the PM peak hour of traffic.

King Street, in order to provide a direct connection between Lower Campus Road True improvement of this entrance/exit would necessitate the acquisition of Rights-of-Way (ROW) from a variety of owners of property that front South and King Street. Such a modification would also require sufficient lane

-45

installed at the new intersection. See Figure 13 below for an aerial photograph of channelization be provided, as not to further impede vehicular flow along South King Street. It is likely that eastbound double left-turn fanes, an exclusive westbound right-turn lane, and dedicated southbound left and right-turn lanes would be necessary. In conjunction with this, a traffic signal would have to be the area surrounding the Varsity Place Entrance Exit.



Figure 13: Varsity Area

V. CONCLUSIONS AND RECOMMENDATIONS

The University of Hawaii at Manoa Long Range Development Plan, 2007 Update, Category 1 (LRDP) (5-10 year horizon) will work towards creating a livable campus community with useable green space and a more pedestrian friendly central campus. Pursuant to this ideal, new buildings, pedestrian malls, and parking lots will be constructed throughout the campus.

Existing Conditions

The University of Hawaii at Manoa (UHM) campus, as a result of being situated at the gateway to the mature residential community of Manoa, near the H-1 Freeway, and Major Arterials South King Street, Beretania Street, and Waialae Avenue, experiences its fair share of traffic (both regional and local in origin).

With Level-of-Service (LOS) used as the Measure of Effectiveness (MOE) at intersections of interest within the vicinity of UHM, the following key study intersections were identified as problematic:

- South King Street/Beretania Street/University Avenue King Street and Beretania Street belong to a greater east-west corridor, which also includes the H-1 Freeway. Kapiolani Boulevard, and Ala Moana Boulevard. Therefore, these major arterials experience a significant regional traffic component. Furthermore, this intersections' adjacency to numerous H-1 Freeway On-ramps and Off-ramps, UHM traffic, and Manoa Traffic, generates a significant turning movement demand in a location which is not capable of further roadway widening. The efficiency and capacity of this intersection is also negatively impacted by the permitted left-turn movements into driveways, despite the absence of dedicated left-turn lanes.
- <u>University Avenue/Dole Street</u> the busiest intersection along UHM's perimeter, vehicular queues in the northbound (mauka) direction extend southward towards South King Street and onto the H-1 Freeway Off-ramps, during the AM peak hour of traffic. During the PM peak hour of traffic, vehicular queues in the westbound direction queues beyond the Lower Campus Road intersection, and into Lower Campus Road itself.

- University Avenue/Sinclair Parking Lot While HCM analysis indicates that this intersection currently operates smoothly, the express bus traffic that utilize this exit often have difficulty making the westbound left-turn out of the driveway. This is in part due to the wide turning angles required, and the prevailing queue in the southbound direction at the University Avenue/Dole Street intersection, which should be improved as a result of the mitigative measures at that intersection.
- University Avenue/Maile Way According to HCM analysis, this intersection operates smoothly at an overall LOS C or better during the AM and PM peak hours of traffic for both existing and future conditions. However, HCM analysis does not account for the congestion downstream in the northbound direction along University Avenue. During the AM peak hour of traffic especially, conditions at the signalized intersection of Kaala Street, which provides access to the Mid Pacific Institute are extremely congested during the AM peak hour of traffic. To exacerbate problems, immediately north of the University Avenue/Maile Way intersection, the two (2) northbound lanes merge into one (1). Therefore, this intersection likely operates at LOS E or F during its worst peak periods.
- Wilder Avenue/Dole Street The northbound approach to this intersection is formed by the H-1 Freeway Wilder Street Off-Ramp, which provides access to the Makiki Area, which includes residential land uses, Punahou School, and Maryknoll Schools. This off-ramp is given the right-of way, in order to maintain conditions along the H-1 Freeway. However, this is done at the expense of Dole Street traffic, which has a relatively low demand.
- <u>Dole Street/Lower Campus Road</u> The majority of the vehicles entering/exiting the Makai Campus utilizes this vehicular gateway, due to the fact that it offers the greatest accessibility. During the PM peak hour of traffic, many of the commuters, dorm residents, and faculty that utilize the existing 3509 Makai Campus parking stalls exit through Lower Campus Road and turn Left onto Dole Street, where they immediately encounter the queue generated by the University Avenue/Dole Street

intersection. This causes vehicles to queue back to the parking guard shack and beyond at times.

- <u>Dole Street/Saint Louis</u>, <u>Heights Drive</u> This intersection operates relatively well during the peak hours of traffic. Although HCM analysis indicates that the southeastbound left-turn operates at LOS F during the AM and PM peak hours of traffic, this turning movement volume is relatively low, and would therefore not warrant a traffic signal.
- Waialae Avenue/Saint Louis Heights Drive During the AM peak hour of traffic, congestion was observed to occur in the westbound direction, where queues were observed to extend as far as 10th Avenue during the AM peak hour of traffic, primarily in the right and center lanes. During the PM peak hour of traffic, similar congestion occurs in the westbound direction along Waialae Avenue. Although there is a brief reprieve west of Saint Louis Drive, congested conditions resume along Old Waialae Road, the H-1 Freeway and King Street further westward.

Base Year 2017

Based on data obtained from the State DOT, regional traffic is projected to increase by approximately 1% annually along the Regional Arterials. Traffic growth within the vicinity of UHM is not projected to occur, due to the fact that most of the area has already been built out, and that the UHM student population is not projected to increase. Furthermore, vehicular traffic decreased during the PM peak hour of traffic and remained constant during the AM peak hour of traffic between 2004 and 2007 at the University/Dole Street intersection based on field counts conducted by ATA.

LOS F conditions will continue to occur during Base Year 2017 at the following locations:

- South King Street/Beretania Street/University Avenue*
- University Avenue/Varsity Place*
- University Avenue/Dole Street*
- University Avenue/Sinclair Parking Lot*

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Dole StreetWilder Avenue – Miligation would result in the reduction of traffic flowing from the H-1 Freeway On-Ramp, which is not recommended. Furthermore, the Dole Street traffic that experiences LOS F exhibits a relatively low demand due to further downstream obstructions and better alternative routes. Therefore, mitigation is not recommended.

- Dole Street/Lower Campus Road*
- Dole Street/Saint Louis Heights Drive While the southeast-bound left-turn currently experiences and will continue to experience LOS F during the AM and PM peak hours of traffic, the demand for this movement is relatively low, and would not warrant a Traffic Signal. Mitigation is not recommended.
- Waialae Avenue/Saint Louis Heights Drive Due to limited right-ofway, no geometric improvements can be made at this intersection.
- Indicates that mitigative measures are recommended and discussed in the next section.

Base Year 2017 Mitigative Measures

University Avenue/Dole Street Intersection

Phase |

Reconfigure the westbound approach to the University Avenue/Dole Street Intersection to incorporate an exclusive left-turn larne, a shared left-turn/through lane, and an exclusive right-turn lane, with storage extending approximately 100 feet east of the University Avenue/Lower Campus Road intersection. This mitigative measure could potentially necessitate the relocation of the historic Gateway structures located along University Avenue.

The effect of Phase I would be to eliminate over-capacity conditions. However, the southbound left-turn movement would still experience LOS F during the PM peak hour of traffic.

Phase II

Reconfigure the northbound approach to the University Avenue/Dole Street intersection to incorporate three (3) exclusive through lanes and two exclusive right-turn lanes, the rightmost of which would directly connect with the H-1 Freeway Westbound Off-Ramp. In conjunction with this, modify the Dole Street/Lower Campus Road intersection to incorporate one (1) Eastbound through lane, an eastbound shared through/fright-turn lane, and an exclusive right-turn lane. Note that these modifications could potentially necessitate the relocation of the existing monkeypod trees along University Avenue, and reduce the available parking within the Music Building Complex.

Phase II, when implemented without Phase I, would produce a similar result as phase I, in that over-capacity conditions would be eliminated, and that the southbound left-turn movement would continue to experience LOS F, while the eastbound and westbound approaches would experience LOS E during the PM peak hour of traffic.

Phase I & II

HCM analysis indicates that the effect of implementing phases I and II in combination would improve the overall delay of the intersection from 73.1 (56.6) seconds during the AM (PM) peak hours of traffic to 38.8 (39.9) seconds, with all movements at the intersection operating at LOS E or better during both periods. It should be noted that at the Dole StreeVLower Campus Road intersection, the lane modification will reduce the number of lanes that drivers need to cross to enter the Lower Campus Road, thereby reducing capacity reductions caused by weaving movements.

It is recommended that Phases I and II be implemented as a miligative measure, while recognizing that the intent of this geometric augmentation would be to improve conditions for vehicles traveling northbound along University Avenue. Although vehicular flow will also improve in the westbound direction during the PM peak hour of traffic,

such benefits would generally be realized locally, given that existing bottlenecks occur downstream at the following locations:

- University Avenue/H-1 Freeway Eastbound On-ramp
- University Avenue/H-1 Freeway Westbound On-ramp
- South King Street/Beretania Street/University Avenue
- Dole Street/Wilder Street
- University Avenue, south of Maile Way

Mitigation of these problems would require costly modifications, including improving congestion along the entire corridor. The H-1 Freeway, Beretania Street, and South King Street would all have to be widened to accomplish this. However, the implementation of the Rapid Transit System will ultimately reduce future vehicular traffic demand.

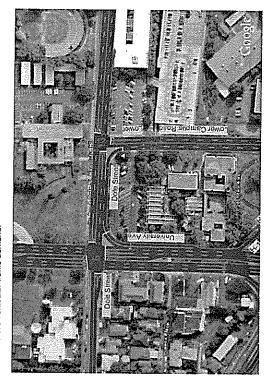


Figure 14: Existing Lane Configuration at University Avenue Intersections with Dole Street and Lower Campus Road

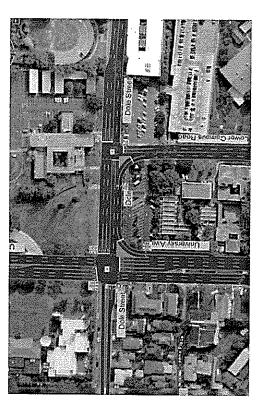


Figure 15: Phases I and II Modifications

Turning Movement Restriction

During field observations, it was noted that along South King Street, east of University Avenue, and University Avenue in the Varsity Area, vehicular flow was hampered by the allowing of left-turns into driveways and small side streets.

arsity Area

Vehicles turning left from the southbound direction cause other vehicles to switch lanes to maneuver around them. Due to the lack of an acceptable gap in northbound traffic, these vehicles often cause those behind them to arrive at the South King Street/Beretania Street/University Avenue intersection after the signal indication has turned red. The resulting flow interruptions have major implications along University Avenue in this area, due to the fact that the current cycle length at that intersection is 170

seconds. Effectively, all of the vehicles impacted by this problem will be delayed by a additional two minutes, fifty seconds as the traffic signal cycles through all of its phases again. Operations at the University Avenue/Varsity Place intersection are also affected by this problem.

Similarly, in the northbound direction left-turns impede the flow of the approximately 1,000 vehicles (for both AM and PM peak hours of traffic) traveling in the northbound direction, sometimes reducing the upstream capacity of the South King Street/Beretania Street/University Avenue intersection.

South King Street - University Avenue to Humane Society

South King Street, east of University Avenue has become a bottleneck for eastbound traffic during the PM peak hour of traffic. It has been observed that vehicles traveling eastbound along South King Street are affected by vehicles making left-turns into driveways, and at the signalized intersection near the Seven Eleven/Aloha Gas station.

Based on the conditions described above, it is recommended that a dialogue be initiated between community members and the City to assess the potential for left-turn prohibitions during the PM peak hour of traffic for:

- Northbound and southbound University Avenue traffic, south of Varsity Place, and north of King Street
- Eastbound South King Street traffic, East of University Avenue and west of the Humane Society.

It is recognized that the merit of this mitigative measure will have to be balanced with the needs of the local community and businesses.

It should be noted that should these prohibitions be implemented, they would <u>not</u> eliminate LOS F at the South King Street/Beretania Street/University Avenue intersection. However, they would improve the

efficiency of the intersection and the capacity of University Avenue and South King Street in the area.

University Avenue/Sinclair Library Driveway

While this intersection experiences a relatively low turning movement volume and operates at LOS B, the bus traffic that passes through the turnaround often have difficulty making the westbound left-turn out of the driveway. Therefore, it is recommended that a traffic signal be installed to facilitate this movement. In conjunction with this, it is recommended that the bus stop located along University Avenue, just north of Dole Street be relocated to the existing bus turnaround at this intersection.

University Avenue/Maile Way

Although HCM analysis indicates that this intersection operates at LOS C(B) during the AM (PM) peak hours of traffic, existing operations have been observed to be worse, especially during the AM peak hour of traffic, where vehicles destined towards the Mid Pacific Institute and Saint Francis cause the downstream intersection (Kaala Street) to be overburdened. Currently, this intersection only provides a single lane at each approach, with no channelization (turning lanes). It is therefore recommended that a dialogue be initiated between community members and the City to assess the feasibility for widening the segment of University Avenue between Kaala Street and Maile Way to incorporate a second northbound lane. This lane would terminate at Kaala Street as an exclusive right-turn lane.

Traffic Signal Coordination along University Avenue and Dole Street/Lower Campus Road

All of the signalized intersections along University Avenue between Dole Street and Maile Way, and the Dole Street/Lower Campus Road intersection are within approximately 1000 feet or less of each other. Therefore, in order to facilitate flow between these intersections, it is recommended that the following intersections be coordinated:

University Avenue/Maile Way

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- University Avenue/Metcalf Street
- University Avenue/Sinclair Library Parking Lot (New Signal)
- University Avenue/Dole Street
- Dole Street/Lower Campus Road

Year 2017 with LRDP

While the LRDP includes new parking structures, the number of students is not projected to increase as a result of these additions. Ultimately, as based on standard methods for generating trips for Universities, this would mean that the number of vehicular trips generated by the LRDP will remain the same. However, a redistribution of the existing trips will occur, in this case more heavily concentrating traffic at the University Avenue/Dole Street, Dole Street/Lower Campus Road, and Dole Street/East-West Road intersections. However, given the improvements recommended in Base Year 2017 Mitigation Measures, these intersections will continue to operate at LOS E or better and under capacity.

As stated earlier, one caveat to this statement is that downstream conditions along University Avenue and subsequently the H-1 Freeway, Beretania Street, and South King Street will continue to experience congestion, and may therefore limit the incoming/outgoing capacity in the area.

Year 2017 with Project Recommended Improvements

No improvements beyond those recommended in Base Year 2017 Mitigative Measures are recommended.

Improvements at the Old Waialae Road Entrance/Exit and at the Varsity Place were investigated, and are generally not recommended. See discussion in Section IV.E.

VI. REFERENCES

- Federat Highway Administration, Manual on Uniform Traffic Control Devices for Streets and Highways, including Revision 1, 2004.
- 2. Institute of Transportation Engineers, Trip Generation, 7th Edition, 1997.
- 3. Institute of Transportation Engineers, Trip Generation Handbook, and ITE Recommended Practice, 2001
- . Transportation Research Board, Highway Capacity Manual, 2000.

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