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DEC 08 2015

November 19, 2015

Scott Glenn, Director  
Office of Environmental Quality Control  
Department of Health, State of Hawaii  
235 S. Beretania Street, Room 702  
Honolulu, Hawaii 96813

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15 NOV 25 P1:28  
OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

Dear Mr. Glenn:

With this letter, the UHM Office of Capital Improvements hereby transmits the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI) for the proposed William S. Richardson School of Law Master Plan situated at TMK 2-8-29:001 (por.), in the Primary Urban Center on the island of O'ahu for publication in the next available edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, two copies of the DEA-AFONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please contact Todd Kanja at (808) 956-2739.

Sincerely,

Todd Kanja  
Director of Capital Improvements

Enclosures

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



DEC 08 2015

**Project Name:** William S. Richardson School of Law Master Plan

**HRS §343-5 Trigger(s):** Use of State Land and Funding

**Island:** O'ahu

**District:** Primary Urban Center

**TMK:** 2-8-29:001 (por.)

**Permits:** Building and construction permits

**Proposing/Determination Agency:**

UH Mānoa Office of Capital Improvements  
1960 East-West Road  
Biomedical Science, B-102  
Honolulu, HI 96822  
ATTN: Todd Kanja, Director  
(808) 956-2739

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

15 NOV 25 P 1:28

RECEIVED

**Accepting Authority:**  
*(for EIS submittals only)*

**Consultant:**  
Group 70 International, Inc  
925 Bethel Street, 5th Floor  
Honolulu, Hawai'i 96813  
ATTN: Christine Ruotola, Principal  
(808) 523-5866

**Status (check one only):**

- \_X\_ DEA-AFNSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); a 30-day comment period ensues upon publication in the periodic bulletin.
- \_\_ FEA-FONSI** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.
- \_\_ FEA-EISPN** Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); a 30-day consultation period ensues upon publication in the periodic bulletin.
- \_\_ Act 172-12 EISPN** Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

DEIS  
Y900 3 17  
 FEIS

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

The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.

Section 11-200-23  
Determination

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

Section 11-200-27  
Determination

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

Withdrawal (explain)

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

The Law School first opened in 1973 and has become world-renowned in the fields of law particularly important to Hawai'i and the Pacific Region. After 42 years in service, the Law School facilities no longer have the capacity to support the growth in Law School faculty, students, and programs especially multidisciplinary and clinical programs. The Law School Master Plan's objectives are to address the space needs and implement the long-term visions of the School by proposing building expansions and facility improvements. The proposed improvements will add approximately 49,000 Square Feet (SF) of floor area to the existing Law School complex for a total of approximately 134,000 SF. These improvements will address the pressing space shortage as well as provide state-of-the-art legal clinical training facilities that are accessible and secure for clients, community visitors, distinguished judges, and international guests. Once the improvements are completed, the Law School will have three detached two-story structures possibly connected with bridges at the second floor of the buildings.

# University of Hawai'i at Mānoa William S. Richardson School of Law Master Plan

TMK 2-8-29:001 por.  
Mānoa, O'ahu, Hawai'i



## Draft Environmental Assessment Anticipated Finding of No Significant Impact (AFONSI)

**Applicant:**

Office of Capital Improvements  
University of Hawai'i at Mānoa  
1960 East-West Road  
Biomedical Science, B-102  
Honolulu, HI 96822

**Approving Agency:**

Office of Capital Improvements  
University of Hawai'i at Mānoa  
1960 East-West Road  
Biomedical Science, B-102  
Honolulu, HI 96822

**Prepared by:**



November 2015



# University of Hawai'i at Mānoa William S. Richardson School of Law Master Plan

TMK 2-8-29:001 por.  
Mānoa, O'ahu, Hawai'i

## Draft Environmental Assessment Anticipated Finding of No Significant Impact (AFONSI)

This environmental document is prepared in accordance with the requirements of Chapter 343, HRS and Hawai'i Administrative Rules, Title 11, Department of Health.

**Applicant:**

Office of Capital Improvements  
University of Hawai'i at Mānoa  
1960 East-West Road  
Biomedical Science, B-102  
Honolulu, HI 96822

**Prepared by:**



925 Bethel Street, 5th Floor  
Honolulu, Hawai'i 96813

**November 2015**



UNIVERSITY OF HAWAI'I AT MĀNOA  
LAW SCHOOL MASTER PLAN

Draft Environmental Assessment AFONSI

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LAW SCHOOL MASTER PLAN**

**Draft Environmental Assessment AFONSI**

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Section 1.0

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INTRODUCTION



## 1.0 INTRODUCTION

This Draft Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, HRS and Hawai'i Administrative Rules, Title 11, Department of Health, which sets forth the requirements for the preparation of environmental assessments.

### 1.1 PROJECT INFORMATION SUMMARY

|  |  |
|--|--|
| <b>Type of Document:</b>                   | Environmental Assessment (EA)  |
| <b>Applicant:</b>                          | Office of Capital Improvements<br>University of Hawai'i at Mānoa<br>1960 East-West Road<br>Biomedical Science, B-102<br>Honolulu, HI 96822 |
| <b>Accepting Authority:</b>                | Office of Capital Improvements<br>University of Hawai'i at Mānoa<br>1960 East-West Road<br>Biomedical Science, B-102<br>Honolulu, HI 96822 |
| <b>Project Name:</b>                       | William S. Richardson School of Law Master Plan  |
| <b>CH. 343, HRS Trigger:</b>               | Use of State Land and Funding  |
| <b>Project Location:</b>                   | Mānoa, Honolulu, Island of O'ahu   |
| <b>Tax Map Key:</b>                        | 2-8-29:001 (por.)  |
| <b>Landowner:</b>                          | State of Hawai'i, University of Hawai'i at Mānoa   |
| <b>Project Area:</b>                       | Approximately 4 Acres  |
| <b>State Land Use District:</b>            | Urban  |
| <b>City &amp; County Zoning:</b>           | Residential R-5  |
| <b>City &amp; County Development Plan:</b> | Primary Urban Center, Public Facilities  |
| <b>SMA:</b>                                | Not in SMA   |
| <b>Flood Zone:</b>                         | Zone X   |
| <b>Existing Approvals:</b>                 | University of Hawai'i Long Range Development Plan (LRDP)<br>(2007)   |

UHLRDP Planned Review Use (PRU) Resolution 09-341  
(2009)

**Anticipated Determination:** Finding of No Significant Impact (FONSI)

## **1.2 PROJECT SITE**

The University of Hawai'i at Mānoa (UHM) occupies 304 acres on land in lower Mānoa Valley, bounded by the Mānoa, St. Louis Heights, Mō'ili'ili, and McCully communities. Its principal physical borders are the Mānoa residential community on the mauka side, Wa'ahila Ridge on the Kokohead side, H-1 Freeway on the makai side, and lower Mānoa and McCully residential communities on the 'Ewa side (*Figure 1.1*).

The existing William S. Richardson School of Law (Law School) is located on the lower campus of UHM (TMK 2-8-29:001 por., refer to *Figure 1.2*). The entire Law School comprises approximately 4 acres, including two buildings: the School of Law Classroom and Office Building (west wing) and the School of Law Library (east wing), and Zone 17 parking lot. A campus pedestrian plaza leading to the lower campus parking structure is located between the two buildings. The Law School is bounded by Dole Street (City) to the north and Lower Campus Road (private) to the west, a vertical drop of the quarry rock wall face on the south side, a multi-story parking structure south of the quarry wall, and Johnson Hall, which is a three-story student dormitory building to the east (*Figure 1.3*).

## **1.3 OVERVIEW OF PROPOSED PROJECT**

The Law School first opened in 1973 and has become world-renowned in the fields of law particularly important to Hawai'i and the Pacific Region. The School consists of approximately 350 students and 100 faculty and staff. It currently offers a Full-Time Juris Doctor (J.D.) program (day time), Part-Time J.D. program (evening), Masters of Law (LL.M.) for foreign lawyers, several dual-degree programs including J.D.-MBA, J.D.-PhD, and J.D.-MA, and certificate programs. After 42 years in service, the Law School facilities no longer have the capacity to support the growth in Law School faculty, students, and programs especially multidisciplinary and clinical programs. The Master Plan's objectives are to address the space needs and implement the long-term visions of the School by proposing the following improvements:

- Expansion of the east wing and addition of second floor structure;
- Construction of an indoor/outdoor café at the east wing;
- Construction of a two-story Community Legal Outreach Center (CLOC) on a portion of the Zone 17 parking lot, with a connector bridge to the existing west wing;
- Construction of a connector bridge between the two existing buildings;
- Improve and modernize public entry facing Zone 17 parking lot to give a new "face" to the Law School;
- Creating a secure, attractive, dignified entry and a welcoming drop-off and reception area;
- Selective interior and exterior renovations of both Law School buildings;
- Landscape improvements to include large monkeypod shade trees planted along Dole Street, as integral shade elements along a walkable Dole Street and to help mark this as primary entry to lower campus;

- Remodeling of existing planters and landscaping at the ewa end of the west wing as a means of transitioning between CLOC and Zone 17 parking lot, and improving the drop off to create a more welcoming arrival area;
- Renovation of the pedestrian plaza;
- Improved signage to help visitors with way finding between the buildings;
- Resurfacing and restriping of Zone 17 parking lot to improve functionality and accessibility; and
- Installation of rooftop photovoltaic or solar carport.

The above improvements will add approximately 49,000 Square Feet (SF) of floor area to the existing Law School complex for a total of approximately 134,000 SF. These improvements will address the pressing space shortage as well as provide state-of-the-art legal clinical training facilities that are accessible and secure for clients, community visitors, distinguished judges, and international guests.

The Law School expansion is included in the 2007 Long Range Development Plan (LRDP) Update prepared for the University of Hawai'i, Mānoa Campus (*Figure 1.4*). The LRDP Update was prepared to reflect current and upcoming educational priorities by planning for buildings and projects anticipated for development within 5-10 years.

#### **1.4 PURPOSE OF ENVIRONMENTAL ASSESSMENT**

The Environmental Assessment is prepared in compliance with Hawaii Revised Statutes, Chapter 343, which requires that any program or project that proposes the use of State or County lands or funding must undergo an environmental review. The Law School Master Plan project proposes to use State land, as it is located on the Mānoa Campus of the University of Hawai'i, and State Funds.

#### **1.5 AGENCIES AND PUBLIC CONTACTED IN PRE-CONSULTATION PROCESS**

The following agencies and groups having jurisdiction or a potential interest in the on-going development of the Law School have been consulted for this pre-consultation period.

##### **Federal Agency**

United States Fish and Wildlife Service

##### **State of Hawai'i Agencies**

State Department of Accounting and General Services (DAGS)

State Department of Agriculture

State Department of Business, Economic Development and Tourism

State Department of Business, Economic Development and Tourism – Energy Division

State Department of Business, Economic Development and Tourism – Office of Planning

State Department of Defense

State Department of Education

State Department of Hawaiian Homelands

State Department of Health

State Department of Human Services

State Department of Labor and Industrial Relations

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State Department of Land and Natural Resources  
State Department of Land and Natural Resources, State Historic Preservation Division  
State Department of Transportation  
Hawai'i Housing Finance and Development Corporation  
Office of Hawaiian Affairs  
University of Hawai'i Environmental Center  
Office of Environmental Quality Control

**City and County of Honolulu Agencies**

Board of Water Supply  
Department of Community Services  
Department of Design and Construction  
Department of Environmental Services  
Department of Facility Maintenance  
Department of Planning and Permitting  
Department of Parks and Recreation  
Department of Transportation Services  
Fire Department  
Police Department

**Community Groups and Associations**

Neighborhood Board No. 7, Mānoa  
Mālama O Mānoa

University of Hawai'i at Mānoa  
William S. Richardson School of Law Master Plan  
Draft Environmental Assessment AFONSI

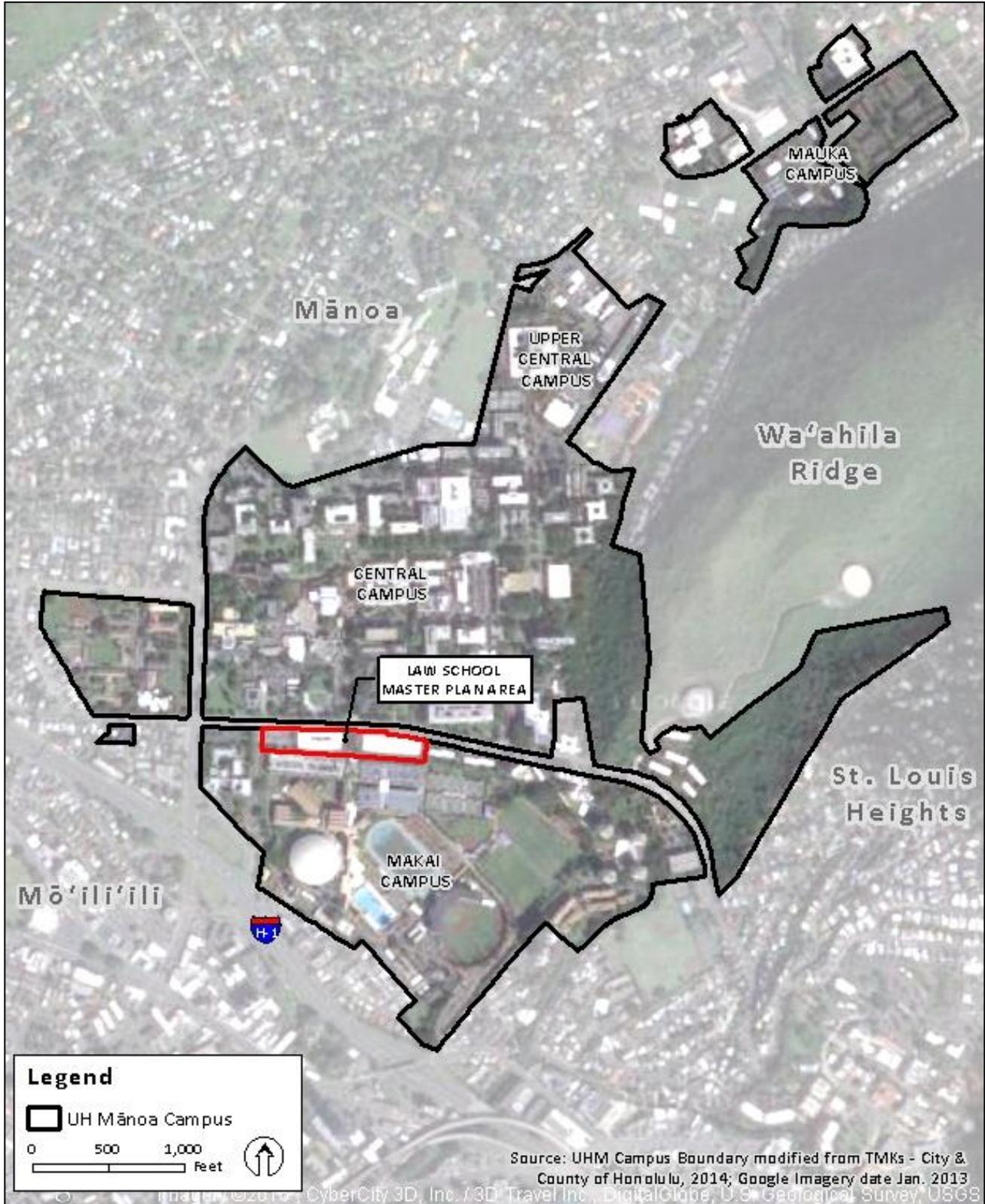


Figure 1.1 Project Location

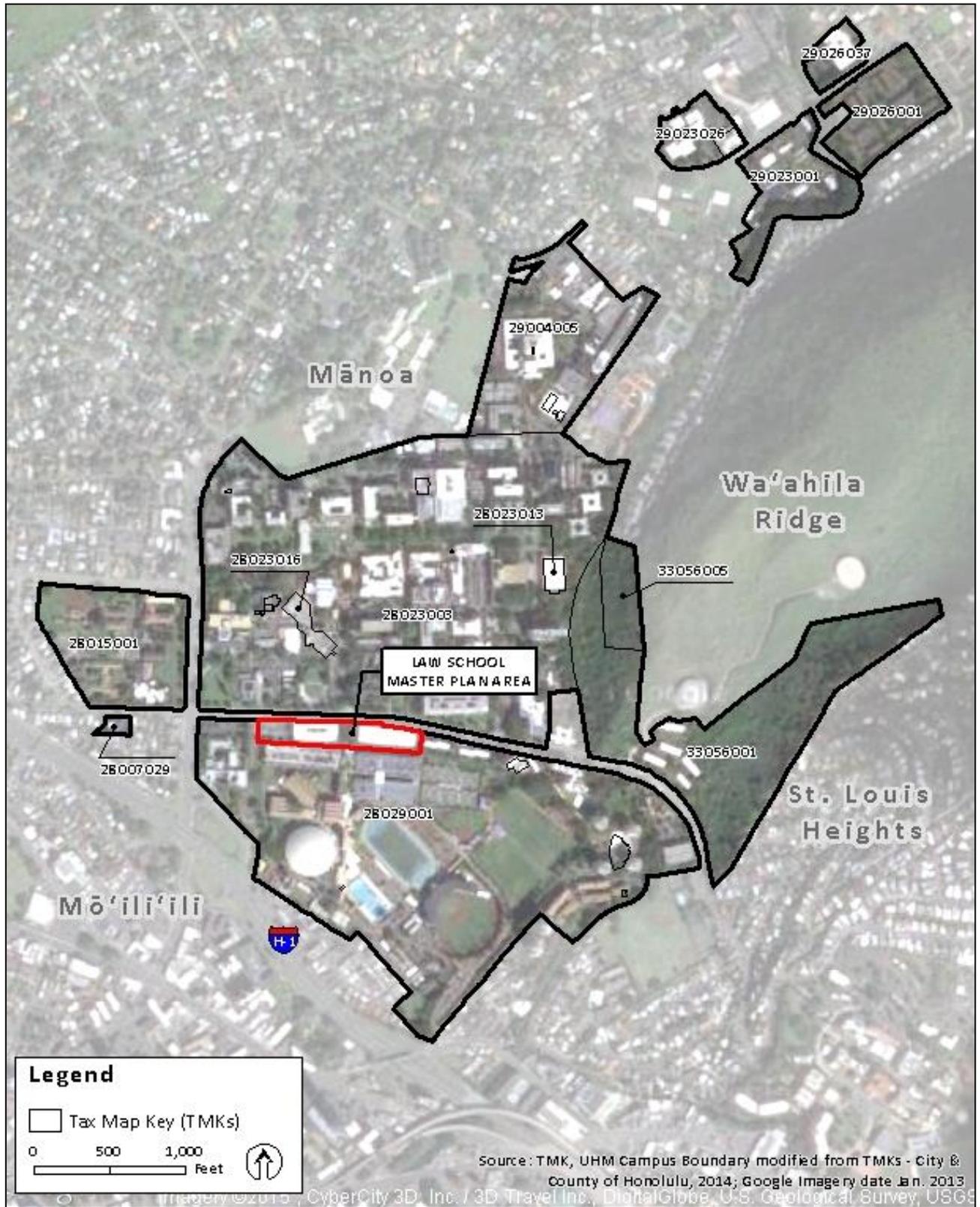
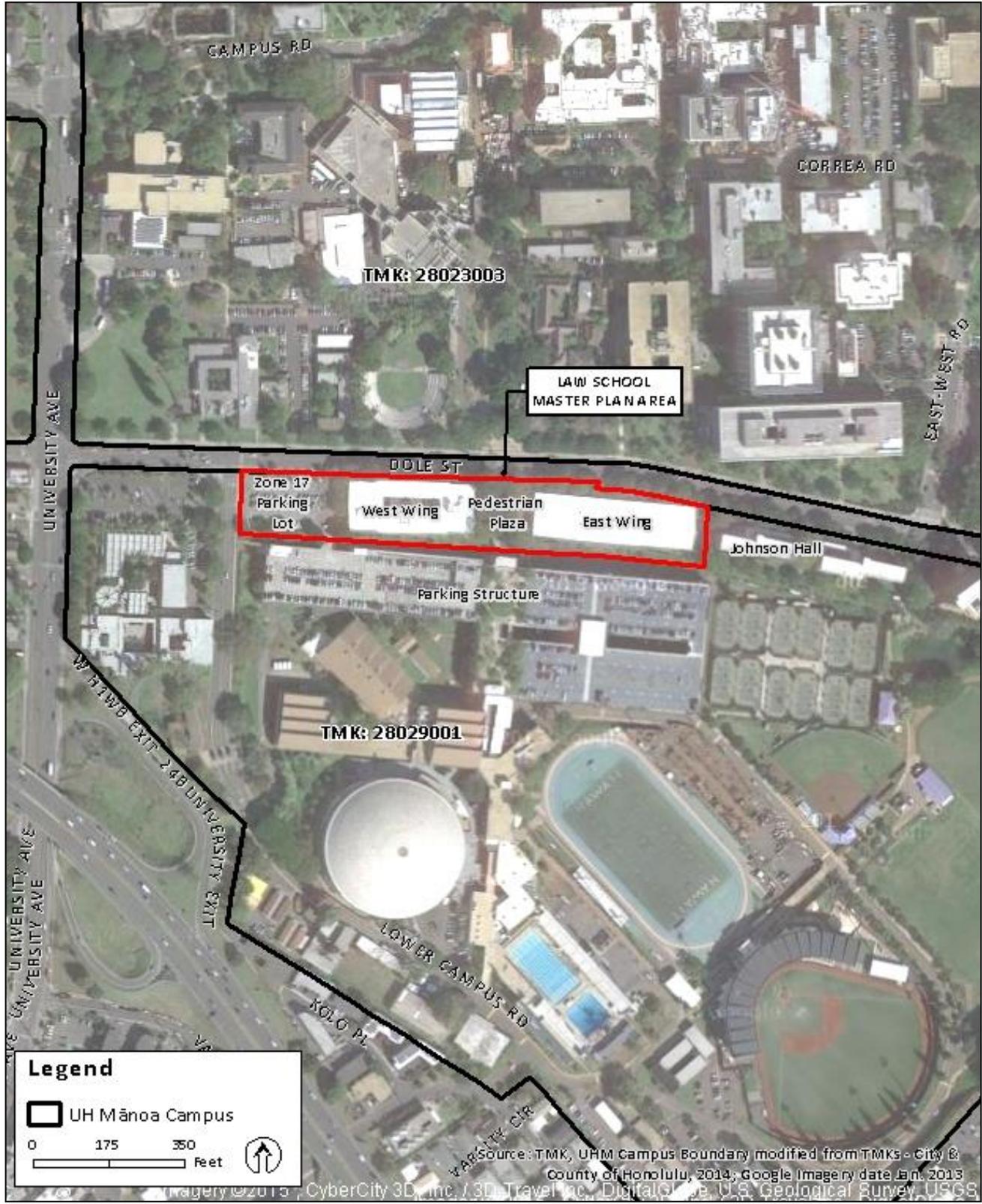


Figure 1.2 Tax Map Key Map

University of Hawai'i at Mānoa  
 William S. Richardson School of Law Master Plan  
 Draft Environmental Assessment AFONSI



**Figure 1.3 Project Area**

University of Hawai'i at Mānoa  
 William S. Richardson School of Law Master Plan  
 Draft Environmental Assessment AFONSI

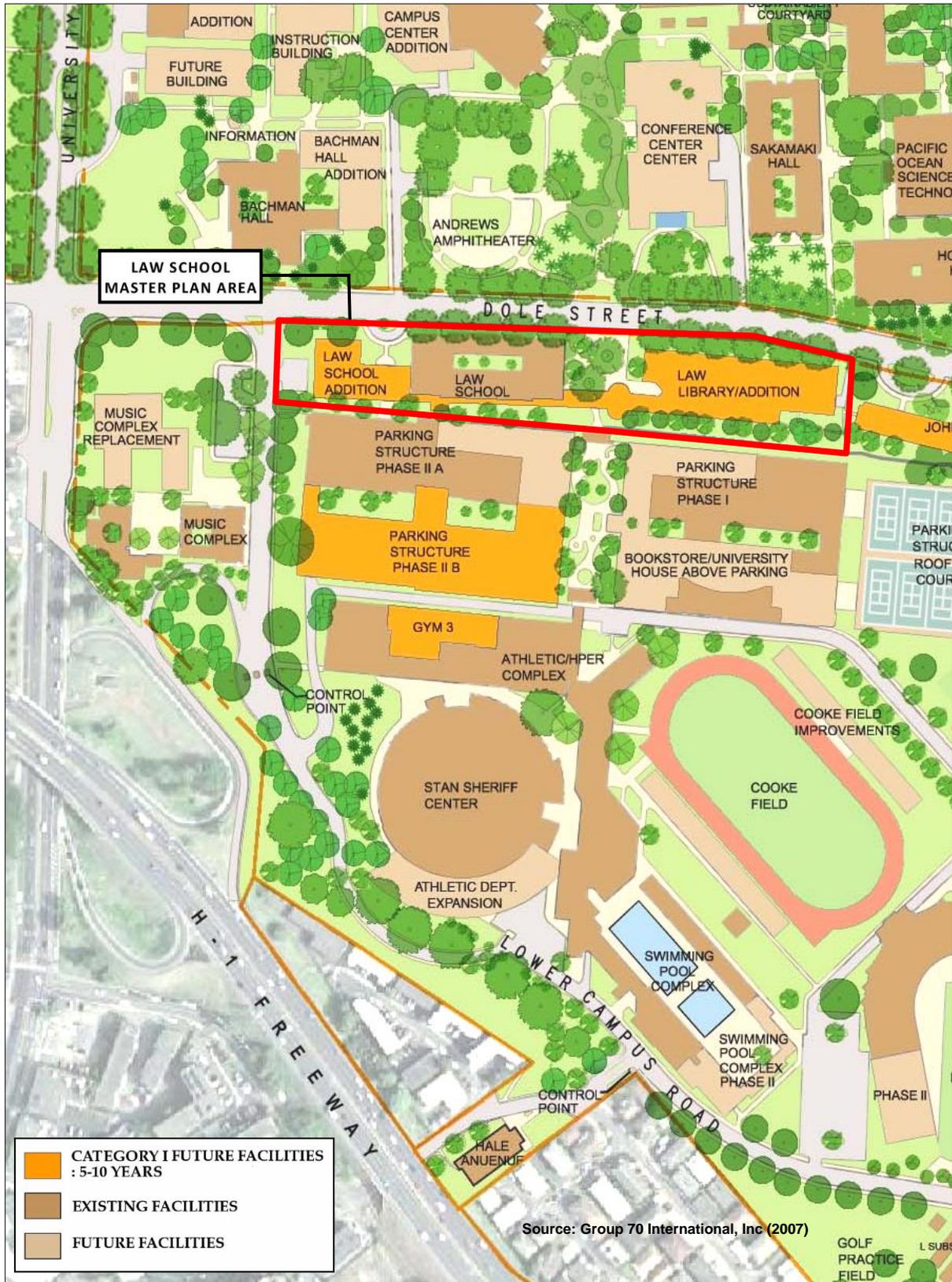


Figure 1.4 University of Hawai'i Long Range Development Plan Update (2007)

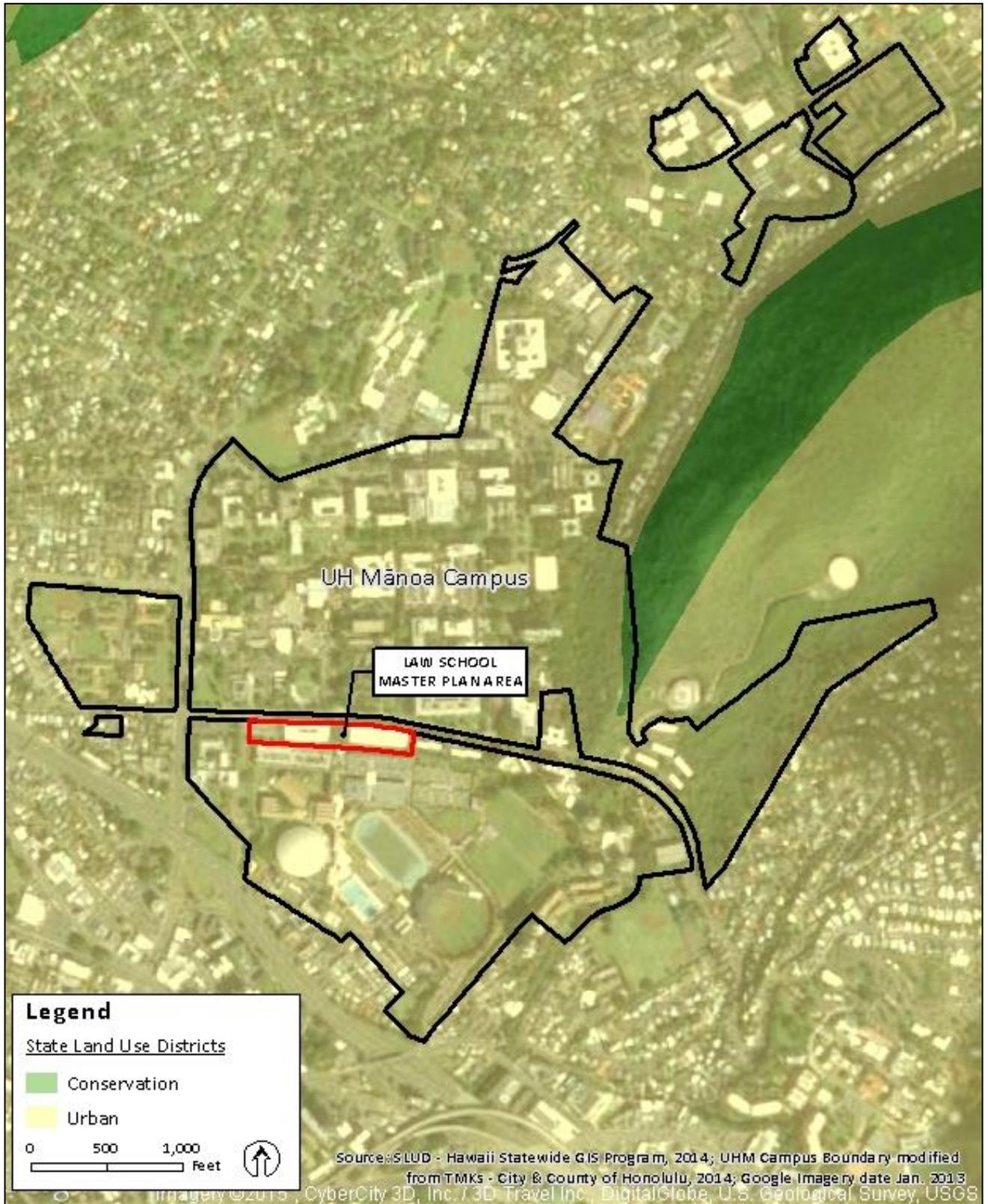


Figure 1.5 State Land Use Map

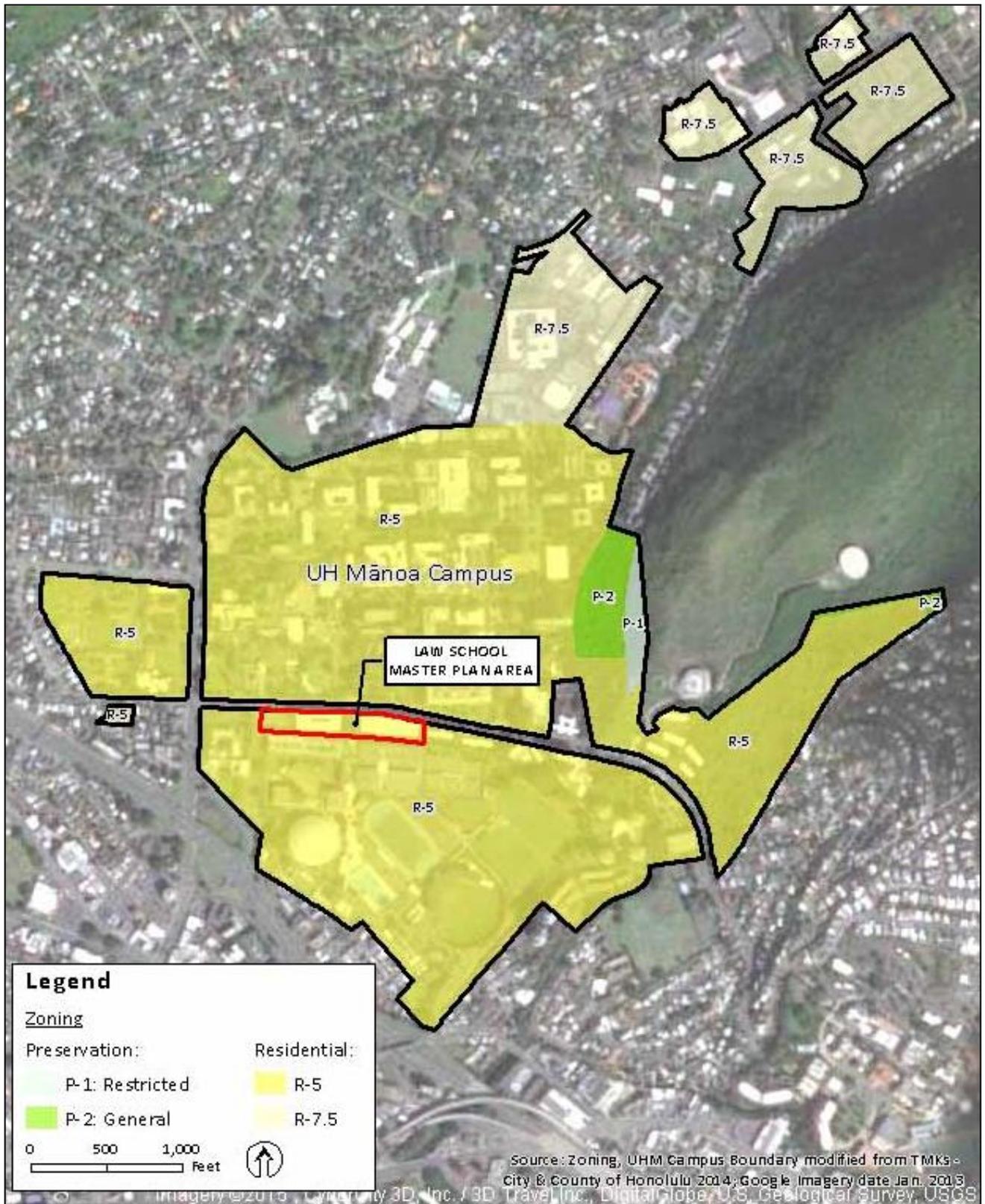


Figure 1.6 Zoning Map

Section 2.0

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PROJECT DESCRIPTION



## 2.0 PROJECT DESCRIPTION

### 2.1 PURPOSE AND NEED

From its humble beginnings in the temporary buildings of the lower campus “quarry,” the William S. Richardson School of Law has steadily grown to become one of our nation’s outstanding Law School. After 42 years of providing excellent legal education, the existing Law School facilities can no longer provide sufficient spaces for the school’s changing needs and community demands. The Law School’s curriculum has grown in size and complexity. Once a traditional J.D.-only program, the school now offers an LL.M. program for foreign lawyers, a part-time J.D. program, and an advanced J.D. program for international graduate law students. These programs, along with the evolving J.D. program, require more and better-designed space than currently exists at the Law School.

Legal studies pedagogy has also changed dramatically. Traditional lecture and Socratic methods are now supplemented by a plethora of skills training, clinical courses, writing intensive classes, computerized research, and multi-media tools. Furthermore, the School offers many specialty programs related to Hawai’i and the Pacific and a variety of clinical courses, many of which directly serve those most vulnerable in the community. The Law School also hosts many innovative programs, such as the Hawai’i Innocence Project, ASEAN Law and Integration Center (ALIC), Medical-Legal Partnership, and the Asia-Pacific Institute of Business Law. These programs and future entrepreneurial activities need more space and better community access. In addition, the Law School needs space for visitors. The Law School is fortunate to have a steady stream of distinguished visitors. Currently, no office space is available for visiting scholars. Over two dozen adjunct faculty share a small room that has other uses.

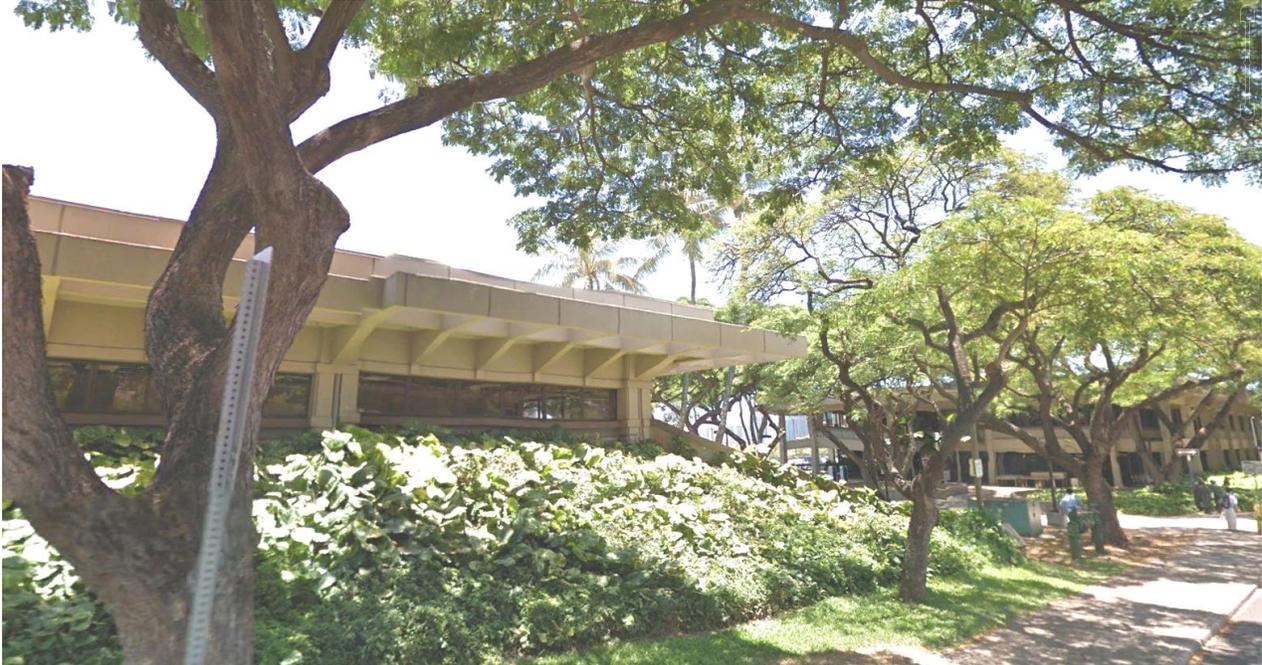
For years, the Law School has “made do,” rearranged space, and operated in cramped conditions. As a result, the functionality is far from ideal and not up to the standards of leading American law schools. Dedicated clinical space, in particular, is needed to meet American Bar Association accreditation standards. The Law School’s challenge is to use the opportunity afforded by this growth and overall success to achieve higher levels of quality in its physical and academic environment. The Law School is committed to providing exciting, practical, and sustainable space that will be modern, efficient, and accessible to the community. The University has committed to the Law School expansion by establishing the proposed project as a priority in its 2007 LRDP.

### 2.2 PROJECT LOCATION AND CHARACTERISTICS

#### 2.2.1 Project Area

The project area for the Law School Master Plan is located on the mauka portion of UH lower campus (*Figure 1.1*). The site is adjacent to the lower campus parking structure and Johnson Hall, with a relatively level area consisting of an interior courtyard area, concrete walkways, landscaped areas, and an asphalt concrete pavement parking lot (*Figure 2.1*). The project will include renovation and expansion of the existing Law School buildings, construction of the new CLOC facility on a portion of Zone 17 parking lot, as well as landscaping, utility, and circulation

improvements. These improvements will greatly enhance an important gateway feature to the lower campus.



**Figure 2.1 Existing Law School Buildings**

### **2.2.2 Existing Uses of the Project Site**

The William S. Richardson School of Law relocated to its current location from its temporary buildings in the quarry in the early 1980s. The two existing buildings house instructional classrooms, administrative and faculty offices, and the Law School Library. The total combined floor area of the two buildings equals approximately 85,000 SF. The west wing contains faculty offices, classrooms, and administration. Program suites, student spaces, and clinics are interspersed among these areas. The East Wing is dedicated to library resources, staff, study carrels, and technology. The Zone 17 parking lot primarily serves the Law School. The general public, UHM students, faculties, and staff use the pedestrian plaza between the two buildings daily to get to the Lower Campus and the parking structure. Refer to *Figure 2.2* for existing floor plans.

The Law School has approximately 100 administrators, faculty, and staff, and 350 students.

Day classes occur between 8:00 AM to 5:00 PM Monday to Friday. Evening classes are offered from 5:00 PM to 9:00 PM Monday to Friday. Clinics are taught from 8:00 AM to 9:00 PM Monday to Friday and with the expansion, legal services to could be accessible seven days a week during the day to the public. Classes and clinics are also taught on Saturday from 9:00 AM to 4:00 PM. The Law Library is open 24 hours a day to law students and staff with restricted access cards. There will be no major change in operational hours associated with the facility improvements.

## 2.3 DESCRIPTION OF THE PROPOSED PROJECT

The proposed Law School Master Plan is intended to provide quality space for academic programs and outreach clinics. The renovated Law School buildings will better integrate and distribute Law School functions and transform the physical image of the Law School.

### 2.3.1 Proposed Improvements

The Law School Master Plan will increase the floor area of the Law School from 85,000 SF to approximately 134,000 SF. Once the improvements are completed, the Law School will have three detached two-story structures possibly connected with bridges at the second floor of the buildings. The layouts for each level of the facility have been planned to provide a space that adequately accommodates the needs of the Law School and meet the design criteria.

The space program for the Law School is presented in *Table 2.1*. The Conceptual Master Plan is presented in *Figure 2.3* and exterior perspective is presented in *Figures 2.4A and 2.4B*.

The Law Library, which is located on the ground floor of the east wing will be renovated as a great reading room with variety of seating and table options where students interact in small groups or quiet study. Glass-walled collaborative study rooms with multi-media technology will be located along the perimeter of the reading room. The student areas of the east wing will be opened 24 hours a day, 7 days a week for law student use. A café will be located along the pedestrian plaza and open to the entire Mānoa campus and to the public during normal hours. The east wing will also have a new, landscaped, interior courtyard that opens to the sky to match the West Wing's open courtyard.

The new second floor of the east wing will provide spaces for a student lounge and lockers, writing center, law technology center, student organizations and the Asia-Pacific Law and Policy Journal, moot court teams and court/conference center, Hawai'i Law Review, classrooms, office for Jurist in Residence and visiting scholars, and program suites.

The West Wing will be renovated to provide expanded spaces for faculty and administration offices, classrooms, and a student lounge.

The Community Legal Outreach Center (CLOC) is one of the most important components in the Law School Master Plan. Construction of the CLOC will provide critically needed space for the Law School's existing community outreach programs and clinical programs, which include Defense Clinic, Legal Aid/Family Law, Medical/Legal Partnership Clinic, Ka Huli A'o and Native Hawaiian Rights Clinic, Elder/Veteran Law, Small Business Clinic, Environmental Law Clinic, Immigration Law Clinic, and Hawai'i Innocent Project (HIP). The CLOC will strengthen the Law School's ability to provide cutting-edge practical legal training for students in a modern law firm environment. It will also directly serve particularly vulnerable people within our community such as veterans, immigrants, and the elderly by providing more accessible space for the Law School clinics.

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The project also includes the renovation of the existing courtyard in the west wing, Zone 17 parking lot improvements, and renovation of the pedestrian plaza and landscape improvements to create welcoming and pleasant outdoor meeting, study, and informal gathering spaces.

| Space Category               | West Wing (SF) |               | East Wing (SF) |               | CLOC (SF)      |
|------------------------------|----------------|---------------|----------------|---------------|----------------|
|                              | Existing       | Proposed      | Existing       | Proposed      | Proposed       |
| <b>Floor Area</b>            |                |               |                |               |                |
| Classrooms                   | 11,870         | 11,730        | 470            | 10,250        | 740            |
| Clinics/Conference/Interview | 1,480          | 1,480         | 870            | 1,250         | 260            |
| Student Space                | 0              | 0             | 630            | 10,920        | 0              |
| Library/Commons/Cafe         | 0              | 0             | 18,280         | 21,410        | 0              |
| Library Storage/ Support     | 0              | 0             | 2,790          | 430           | 0              |
| Computer Lab                 | 0              | 0             | 1,300          | 0             | 0              |
| Offices                      | 16,100         | 16,100        | 3,400          | 12,820        | 2,285          |
| Circulation/Support Space    | 23,280         | 23,420        | 1,530          | 16,460        | 3,035          |
| Reception Area               | 0              | 0             | 0              | 0             | 1,060          |
| Public Areas                 | 0              | 0             | 2,960          | 0             | 0              |
| Break Room                   | 0              | 0             | 0              | 0             | 220            |
| <b>Subtotal</b>              | <b>52,730</b>  | <b>52,730</b> | <b>32,230</b>  | <b>73,540</b> | <b>7,600</b>   |
| <b>Total Existing</b>        |                |               |                |               | <b>84,960</b>  |
| <b>Total Proposed</b>        |                |               |                |               | <b>133,870</b> |
| <b>Outdoor Area</b>          |                |               |                |               |                |
| Courtyard                    | 3,900          | 3,900         | 0              | 0             | 0              |
| Garden / Outdoor             | 0              | 0             | 0              | 9,540         | 0              |
| Subtotal                     | 3,900          | 3,900         | 0              | 9,540         | 0              |
| <b>Total Existing</b>        |                |               |                |               | <b>3,900</b>   |
| <b>Total Proposed</b>        |                |               |                |               | <b>13,440</b>  |

**Table 2.1 Proposed Law School Master Plan Space Program**

### 2.3.2 Law School Clinical Programs

Clinic spaces will be located in the new CLOC building. All clinic spaces require 24/7 access for both students and faculty, as they routinely work late, often to midnight on a weekly basis. Clinics may also receive/service visitors in the evenings and on the weekends.

Unique qualities and use patterns for some of the CLOC clinics are discussed below.

#### ***Defense Clinic***

This clinic often interviews people who have been accused of a crime. However, these interviews would not take place at CLOC. Typically three to five students are assigned to a client. Students review and work on confidential case files and transcripts in the clinic.

### ***Legal Aid/Family Law***

A typical class size for Family Law Clinic is 10 students. The CLOC will have space for clients to be interviewed and to fill out confidential documents such as divorce papers.

### ***Ka Huli A'o and Native Hawaiian Rights Clinic***

Ka Huli Ao provides direct legal services to community members and conducts capacity-building training events and seminars within the Native Hawaiian community. Meeting sizes for outreach events can range from 3-150 people. Training group size can vary between 15-50 people. The clinic also conducts distance learning with community college partners on the neighbor islands and teleconference with remote clients. Community events are hosted on the weekends and evenings during the school year.

### ***Elder Law***

As capacity of the Elder Law program increases, the program will accommodate between 1-6 clients and 9-10 students in a large conference room. Access to an American with Disabilities Act (ADA) accessible family restroom will be provided. Typical working hours for the program are Monday to Friday from 8:30 AM to 5:00 PM. Weekend work occurs frequently, including approximately every two months for special events.

### ***Hawai'i Innocent Project (HIP)***

Due to the highly confidential nature of the clinic, HIP cannot share its primary space with other clinics. Spaces will be designed for a reasonable level of sound privacy. HIP will utilize the moot court room for large meetings (at least 50 people) which occur a couple times a year. HIP space will be used every day of the week and on most holidays by faculty. A typical work day is 7:30 AM to 7:00 PM. Frequent periods of 24/7 work could last for 3-4 weeks. During some semesters, HIP holds night classes that end at 10 PM, Monday to Friday.

### **2.3.3 Design Characteristics**

The Law School aims to be a model of sustainability and contribute to the “Hawaiian Sense of Place” for the entire university community. It seeks to achieve, at a minimum, a Leadership in Energy and Environmental Design (LEED) Silver certification. The building will feature energy and resource efficient design solutions that target 35% savings on energy use, 30% savings on water use, and provide 90% of the occupied spaces with daylight and views. The building will also utilize low-toxic finishes, local materials, recycled products, zero-ozone refrigerants, and possibly green roofs to reduce stormwater run-off and minimize heat-island effect.

The Law School will also consider innovative sustainable design features such as utilizing rainwater and lavatory water to flush toilets and irrigate the plants. The new public space and open-air café along the pedestrian path will enhance the gateway to the Lower Campus and become a new gathering place for the university community.

Refer to *Figure 2.3* for the proposed floor plans and *Figures 2.4A* and *2.4B* for conceptual renderings of the proposed improvements.

### **2.3.4 Utilities and Infrastructure**

Drainage, Wastewater, and Potable Water Master Plans for UHM, which includes the Law School Master Plan, are being prepared by R.M. Towill. A Preliminary Engineering Report (PER) for the CLOC building prepared by Group 70 International (2014) is provided as *Appendix A*. Overall existing conditions, impacts, and mitigation measures for utilities are discussed in *Section 3.0* of this document.

The existing Law School has water and electric services, sewer connections, and solid waste collection services. The following section describes the physical characteristics of these site utilities with the implementation of the Master Plan.

#### **Water**

Existing potable water service is provided by the Board of Water Supply (BWS). The project will tap directly into the existing water main for potable water demand. Several water meters connect the Mānoa campus to the BWS system.

#### **Wastewater**

Wastewater collection, treatment, and disposal for the UHM campus, including the Law School, is provided by the City and County of Honolulu. Sewer connections will be provided to the new CLOC building from the existing 6" sewer main along the mauka face of the building. Existing lines will be able to accommodate the waste generated on-site.

#### **Drainage System**

The City and County of Honolulu's drainage system on the UHM campus handles most of the off-site drainage from portions of Mānoa and Mid-Pacific Institute (MPI). UHM's storm drain system connects to the City's drainage system located on University Avenue and Dole Street. New drainage infrastructure will be installed to support the new CLOC building and reconfigured Zone 17 Parking Lot.

#### **Solid Waste Disposal**

Solid waste from the project site will be disposed of at an approved City and County of Honolulu refuse disposal site by either a private refuse collection company or UHM workers. The proposed Law School Master Plan project will not generate a significant amount of additional solid waste. Recycling programs will be implemented as part of the Master Plan.

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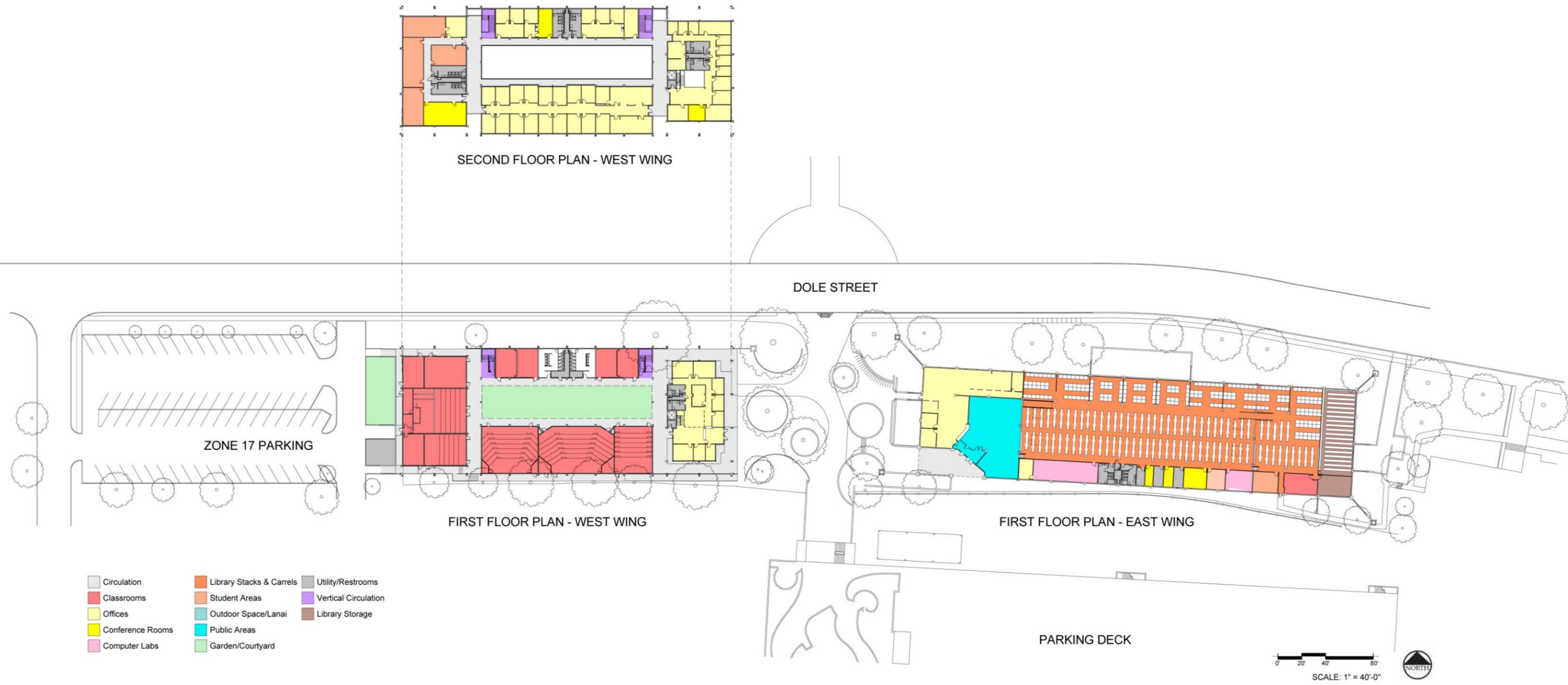


FIGURE 2.2 Existing UHM Law School Floor Plans



FIGURE 2.3 UHM Law School Conceptual Master Plan

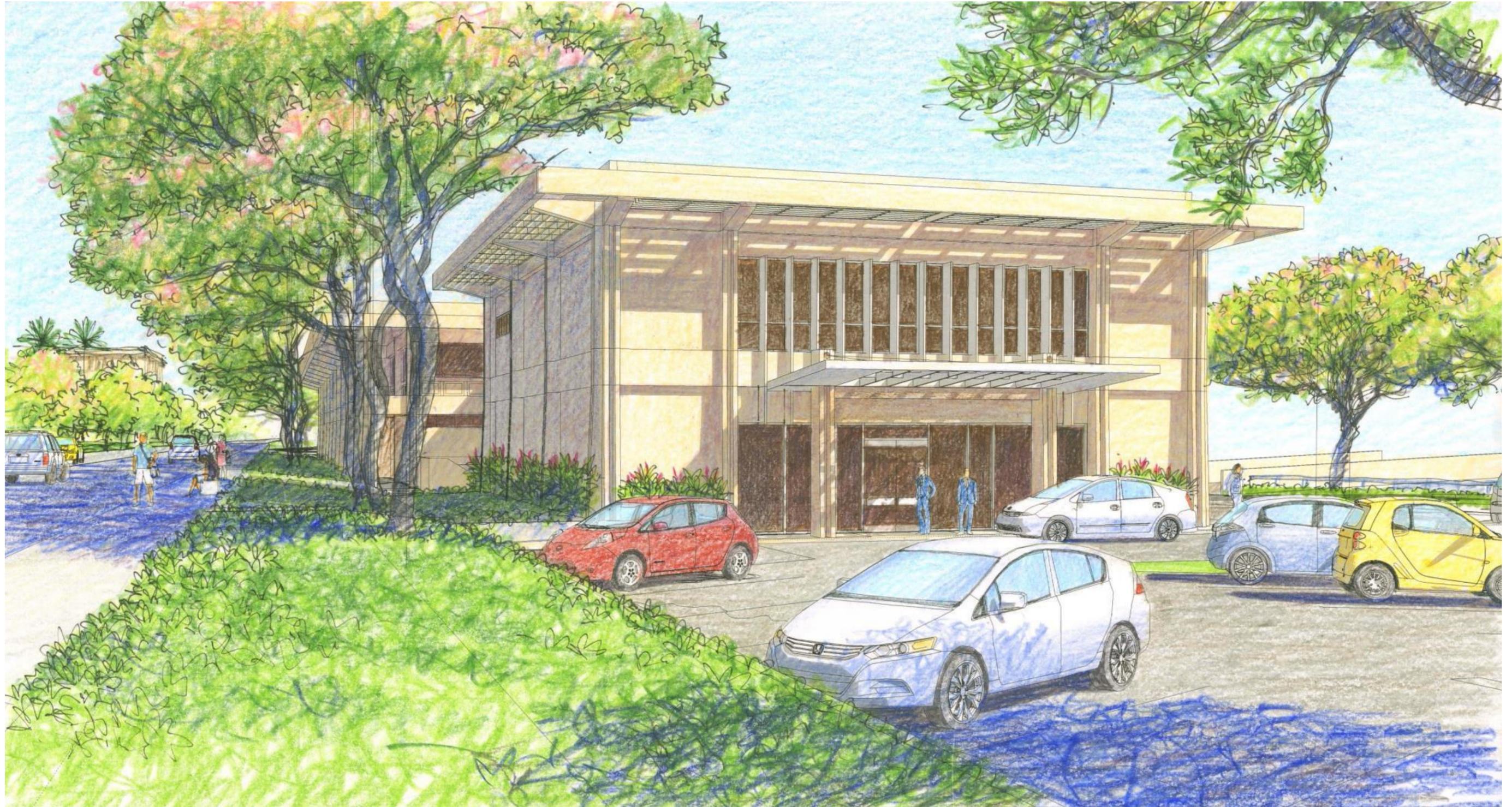


FIGURE 2.4A Law School Master Plan Conceptual Rendering – View from Dole Street



FIGURE 2.4B Law School Master Plan Conceptual Rendering – View from Lower Campus Parking Structure



FIGURE 2.4C Law School Master Plan Conceptual Rendering – CLOC Lobby

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### **2.3.5 Construction Characteristics**

The proposed project does not require that any of the surrounding buildings be demolished. The project site will require minor grading, general construction, and planting and landscaping.

#### **Vegetation Clearing, Grubbing, and Grading**

A portion of the site will be cleared and graded to develop the new facility and landscaped areas. During the construction, sidewalks may be relocated and 25-30 parking stalls will be eliminated, requiring some removal of the existing asphalt. The project will require a planned relocation and removal and relocation of trees and shrubs as practical and as determined by the Facilities Management Office.

#### **General Construction**

The general construction and renovation of the facility will include the formation and placement of concrete foundations, the installation of mechanical equipment and electrical wiring and equipment, general carpentry work, painting and other trades and work associated with typical construction activities.

#### **Planting and Landscaping**

The Law School Master Plan project will foster landscape design by offering a cultural overlay to the landscape. Tropical landscaping and native plant species will be used as an educational tool for the campus while enhancing the features of the project area.

None of the existing trees surrounding the proposed project site are considered to be endangered or threatened. Where possible, trees will be preserved in place and included into the planned landscape design. Healthy trees that cannot stay in their current location will be transplanted and continue to serve as on-site landscaping on the Mānoa Campus.

### **2.3.6 Access, Parking, and Pathways**

Road and pedestrian access already exist in this area of the campus. Primary vehicular accesses to the project site are from the H-1 Freeway, University Avenue, Dole Street and Lower Campus Road (private). Public transportation is primarily provided by regular bus services on King Street, University Avenue, Dole Street and Metcalf Street. The bus service includes routes through the campus via East-West Road and Maile Way. The Mānoa Campus is also served by direct Express Bus service from the outlying communities.

Zone 17 parking lot, which serves the Law School, is located ʻEwa of the Law School's west wing. The parking lot currently has approximately 66 stalls and is accessible through Dole Street and Lower Campus Road. The parking structure located on the makai side of the quarry wall has a capacity of approximately 3,000 cars. When there is a large event, the gate between the parking deck and Zone 17 parking is opened to allow vehicular egress across the bridge through Zone 17 parking lot driveway onto Dole Street. Left turns onto Dole Street are prohibited during those times.

As presented in the LRDP, almost all of Zone 17 parking spaces are to be removed as part of the Law School expansion plan, with the remaining parking space and traffic circulation to be

reconfigured. The recent Law School Master Plan will have less impact on Zone 17 parking lot as it proposes to remove approximately 35 stalls. ADA compliant parking will be provided for Law School personnel and clinical clients with special needs. Some of the parking on the top level of the parking structure may be designated for Law School use to offset the lost Zone 17 parking.

The pedestrian plaza between the west wing and the east wing is part of the larger pedestrian corridor that connects the parking structure roof garden and the Legacy Path. Numerous students, staff, and faculty walk through this area daily from the parking structure to Central Campus. The plaza is dominated by large shade trees, round planters with concrete seat walls, patch work of concrete and asphalt paving, stairs, and utility. The plaza will be repaved to create a cohesive and consistent character. Porous paving material may be installed in central areas of the plaza to allow infiltration of stormwater and reduce runoff towards to the quarry wall. Seating will be added and renovated to provide better-defined informal gathering spaces and complement the proposed café in the East Wing that fronts the plaza. Bicycle and moped parking at the plaza will also be renovated. The existing sculpture may be relocated to the Legacy Path and a new sculpture reflecting Hawaiian Sense of Place may be installed at the plaza. The plaza will remain a green space with generous amount of groundcover and shrubs.

Future plans for the circulation, parking, gateways, malls, and pathways are also detailed in the LRDP Update. *Figure 2.5* shows the LRDP proposed system extending the Legacy Path to the Lower Campus, through the Law School plaza and the Athletic Complex.

## **2.4 PROJECT COST AND SCHEDULE**

The first phase of the Master Plan implementation will be the construction of the CLOC building and associated Zone 17 parking lot and landscape improvements, which is anticipated in 2016-2017. CLOC is on the UHM Capital Improvement Program (CIP) and the Hawai'i Legislature allocated construction funds in the 2013 in the amount of \$7 million. Half of the funds will be sourced through General Obligation (GO) Bonds and the other half through Revenue Bonds. The rest of the Law School Master Plan implementation will occur in future phases, for which timing has not been determined. The cost for the future phase implementation has been estimated at \$58 million.

## **2.5 REQUIRED PERMITS AND APPROVALS**

In addition to the acceptance of the Final EA/FONSI, other approvals will be required from the City to implement the proposed action. Anticipated permit requirements will include:

- Building Permits (Buildings, Electrical, Plumbing), and Sidewalk/Driveway Work (DPP)
- Grading, Grubbing, Trenching and Stockpiling Permits (DPP)

LRDP Update PRU approval conditions (Resolution 09-341) require that UHM submit the following documents prior to the approval of building permit applications for projects included in the LRDP Update:

- Documentation that contact and continuing correspondence has been established between UHM Office of Facilities and Ground (OFG) and the Department of Design and Construction (DDC) regarding long-range drainage plans for the areas of the UHM campus

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- in the vicinity of Mid-Pacific Institute; work schedule for UHM campus drainage system inspections; and status report of the UHM Drainage Master Plan (DDC)
- An approved Drainage Master Plan or a detailed, site-specific drainage report for a specific development project on campus shall be submitted if the Drainage Master Plan has not been approved (DPP-Civil Engineering Branch)
  - A projected time line or phasing plan on anticipated construction of buildings on the UHM campus (DPP-Traffic Review Branch)
  - An updated Traffic Impact Analysis Report (TIAR) based on the phasing of the projected time line or phasing plan on anticipated construction of buildings on the UHM campus (DPP-Traffic Review Branch)
  - A Construction Management Plan (DPP-Traffic Review Branch)
  - A periodically updated Transportation Management Plan (DPP-Traffic Review Branch)
  - Construction plans for all work within or affecting City streets and traffic control plans during construction (DPP-Traffic Review Branch)

UHM has prepared a Draft Campus Drainage Master Plan that is currently being reviewed by the City. An updated traffic study was prepared as part of this EA for the Law School Master Plan. A site-specific drainage statement or report and a construction management plan will be prepared in the building permit phase. A Draft Transportation Management Plan for the UHM campus was prepared by in 2012 by Nelson\Nygaard Consulting Associates, Inc.

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Figure 2.5 UHM 2007 LRDP Update Gateways, Malls, Path and Pathways Circulation Plan

Section 3.0

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AFFECTED ENVIRONMENT, POTENTIAL IMPACTS  
AND MITIGATION MEASURES



## 3.0 AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

### 3.1 TOPOGRAPHY

**Existing Conditions** - The Law School site is relatively flat with gentle slope mauka to makai (Figure 3.1). Dole Street is at the highest elevation along the project's entire frontage. At the Zone 17 parking lot, there is an approximate 5-8 feet difference in elevation from Dole Street to the rear of the site. An existing steep slope consisting of a stabilized rock face is located along the entire makai edge of the site and as part of the quarry. The existing rock face slope was stabilized under Phase 1B of the Lower Campus Quarry Wall Stabilization Project in 2008.

**Anticipated Impacts and Mitigation Measures** – The construction of the Law School Master Plan will not result in any significant changes to the area's existing topography. Minor grading may occur to prepare and finish the sites. Necessary permits for construction and grading will be obtained, and all conditions to minimize any anticipated impacts will be followed. Construction near or adjacent to the rock face will be limited and improvements will be carefully designed by structural and geotechnical engineers.

### 3.2 GEOLOGY AND SOILS

**Existing Conditions** - The Island of O'ahu is comprised of two major extinct volcanoes, Wai'anae and Ko'olau Volcano. The UH Mānoa Campus is located at the mouth of Mānoa Valley situated on the southeastern slopes of the extinct Ko'olau Volcano. The valley was a result of a rejuvenated stage of eruptions, known as the Honolulu Volcanic Series, over 100,000 years ago.

During the Honolulu Series eruption period, many of the vents erupted through a coral reef that surrounded the island on the south side. The cinder cones of Mount Tantalus, Punchbowl (Puowaina), and Rocky Hill at Punahou were formed during this period. The other flows that erupted inland were funneled down valleys, such as Mānoa, thereby creating flatter valley floors and bluffs. The flows and ashes of the Honolulu Volcano series have high contents of sodium and potassium and low contents of silica.

Soil types in the project area have been identified by the U.S. Department of Agriculture's 1972 Soil Conservation Service Soil Survey. As shown in Figure 3.2, the soil type in the project area is Makiki Stony Clay Loam (M1A), which is characterized by well-drained stony soils.

**Anticipated Impacts and Mitigation Measures** – The Law School Master Plan project will not result in any significant change to the existing soil conditions within the project area. Construction activities will temporarily disturb the soil retention values, exposing the soils to erosional forces. All necessary permits will be obtained and all conditions will be followed. Best Management Practices for construction and grading and erosion control measures will be implemented to minimize the potential impact of silt runoff from construction areas during a major storm.

### 3.3 CLIMATE AND RAINFALL

**Existing Conditions** - The UHM Campus is located in the middle and lower regions of Mānoa Valley on O‘ahu. Nestled within the flanks of the Ko‘olau Mountains, Mānoa Valley is exposed to lower temperatures than the downtown area of Honolulu. Average daily minimum and maximum temperatures typically range from the low 60s (degree Fahrenheit) to the low 90s, depending on the time of the day and the season. Daily temperatures vary by about 7 degrees between winter and summer seasons, and 15 to 20 degrees between day and night.

Northeasterly trade winds prevail much of the time throughout the island of O‘ahu. These trade winds vary in frequency. Often times they last for weeks on end. Other times they are virtually absent. This is the general result of the location of the North Pacific high pressure system. During the spring and summer months, this system is larger, stronger and shifts farther to the north and produces more persistent trade winds. In the fall and winter months, this high pressure system degrades and shifts to the southeast, at which time the general wind patterns become weaker and more variable. Typical wind velocities range between 8 and 15 miles per hour.

Rainfall in Mānoa Valley varies considerably between the upper and lower areas; therefore the upper-most and lower-most districts of the UHM Campus receive different amounts of rainfall. On average, annual precipitation values of approximately 30 inches can be expected, with most rainfall occurring in conjunction with discrete winter storms between December and April. However, during the spring and summer months, moisture-laden trade winds regularly produce passing showers that contribute significantly to the annual rainfall total.

**Anticipated Impacts and Mitigation Measures** - The project is not anticipated to have a significant adverse impact on climate conditions. The Law School Master Plan will incorporate measures to reduce impacts to global climate change. Techniques such as the use of photovoltaic panels, wind turbine, and natural day lighting may be included in addition to new trees, contributing to UHM’s “urban park” and reducing the heat island effect. To reduce the impacts of rainfall and run off, the project will implement Low Impact Development (LID) techniques and consider the use of materials and technologies that support on-site rainwater collection and re-use for landscaping on the project site.

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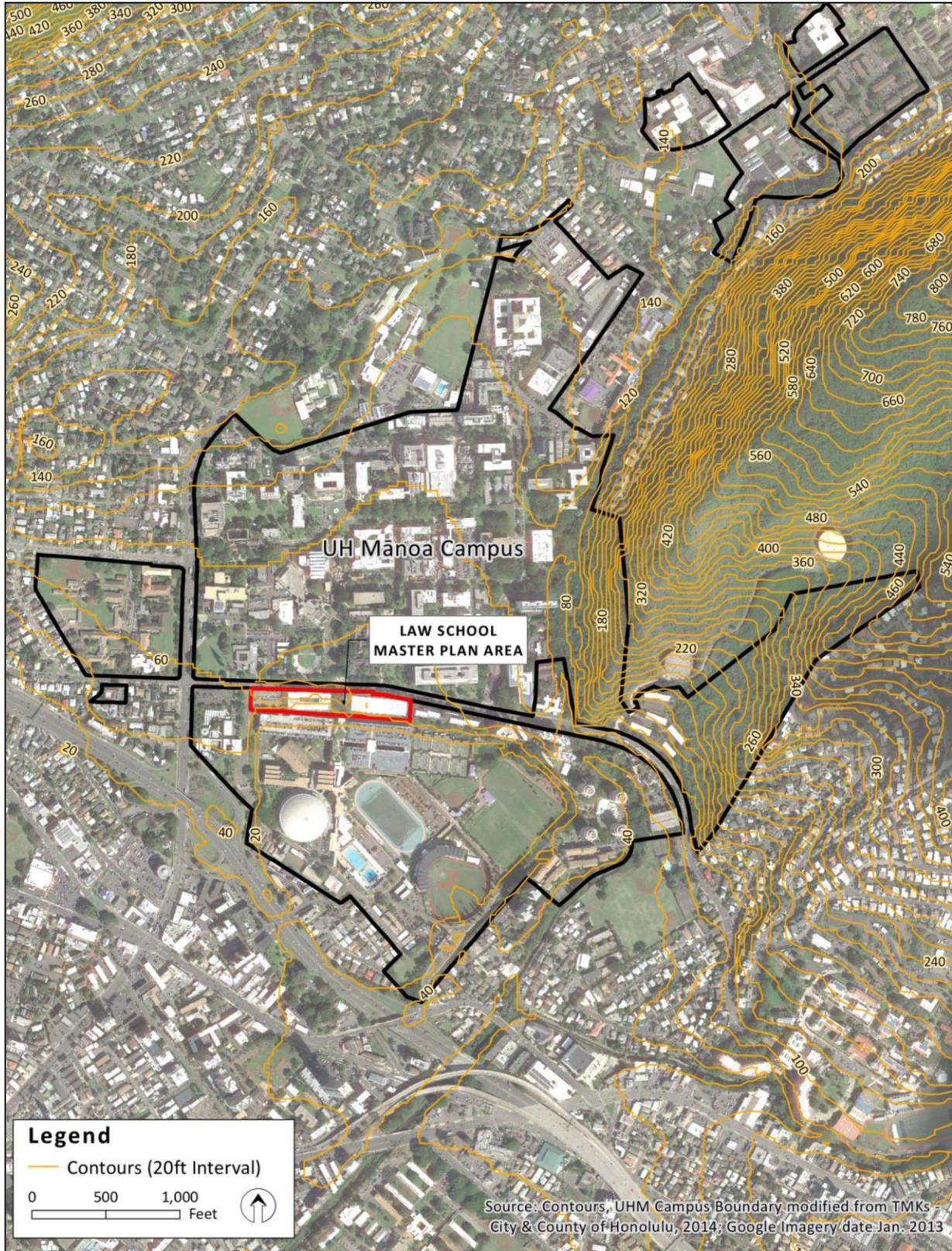
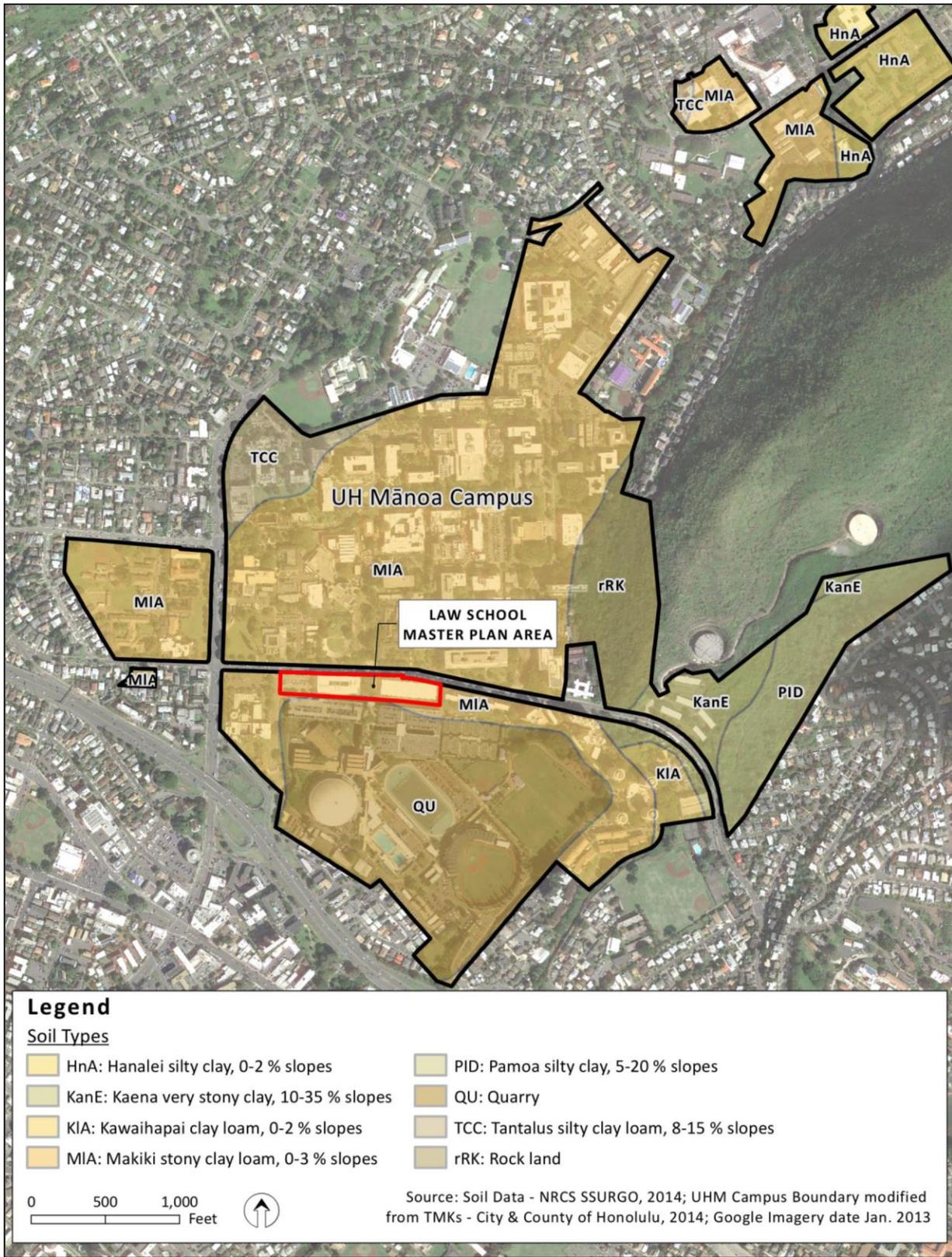


FIGURE 3.1: USGS Topography Map

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**FIGURE 3.2: Soil Classification**

### 3.4 FLOOD AND NATURAL HAZARDS

**Existing Conditions** – The project site is located in Zone X or area outside of the 500-year flood according to the National Flood Insurance Rate Map (FIRM) dated April 2011 (*Figure 3.3*). The project site was not directly affected by the 25-year storm event that flooded a portion of the upper UHM Campus in October 2004. According to the U.S. Army Corps of Engineers “Hydrology and Hydraulics Study, Flood of October 30, 2004, Mānoa Stream” dated November 15, 2006, the flooding was caused by blockages in Mānoa Stream and an inadequate channel capacity between Kahaloa Drive and Woodlawn Drive.

Hurricanes are tropical storms that attain a minimum speed of 74 mph. The general season for hurricanes is between the months of June to December. The movement pattern of these systems can be erratic and unpredictable. The major hazards posed by a hurricane include violent winds, torrential rainfall, flooding, storm surge, and high surf.

The majority of earthquakes in Hawai‘i are directly related to volcanic activity on the Island of Hawai‘i. The entire City and County of Honolulu lies in a seismic zone designated as 2A. Under the International Building Code (IBC) seismic provisions, a Zone 2A area could experience seismic activity between .075 and .10 of the earth’s gravitational acceleration (g-force).

**Anticipated Impacts and Mitigation Measures** – In general, tsunamis and earthquakes impose no major constraints on the project. Floods are also unlikely to impact the project based upon the location of the project. The impacts of natural hazards such as earthquakes, high winds, and hurricanes are addressed in the design and construction of the campus facilities, all of which are in compliance with relevant building codes in force at the time of design and construction.

Risk from earthquakes, hurricanes, and floods will be mitigated through continued adherence to local building codes during design and construction. The University has adopted a System-wide Emergency Operations Plan to be implemented whenever a disaster strikes; the UH Civil Defense Coordinator is responsible for the implementation of this Plan. Additionally, with the Mānoa Watershed Project, the U.S. Natural Resources Conservation Service (NRCS) is investigating flood mitigation and stream restoration issues. The University will help to develop and review recommendations and to monitor implementation, and assist with coordinating improvements that would affect the UHM Campus, and any that specifically affect the Law School site. The proposed improvements will be designed to handle anticipated storm water flows and all facilities will be designed to comply with current codes.

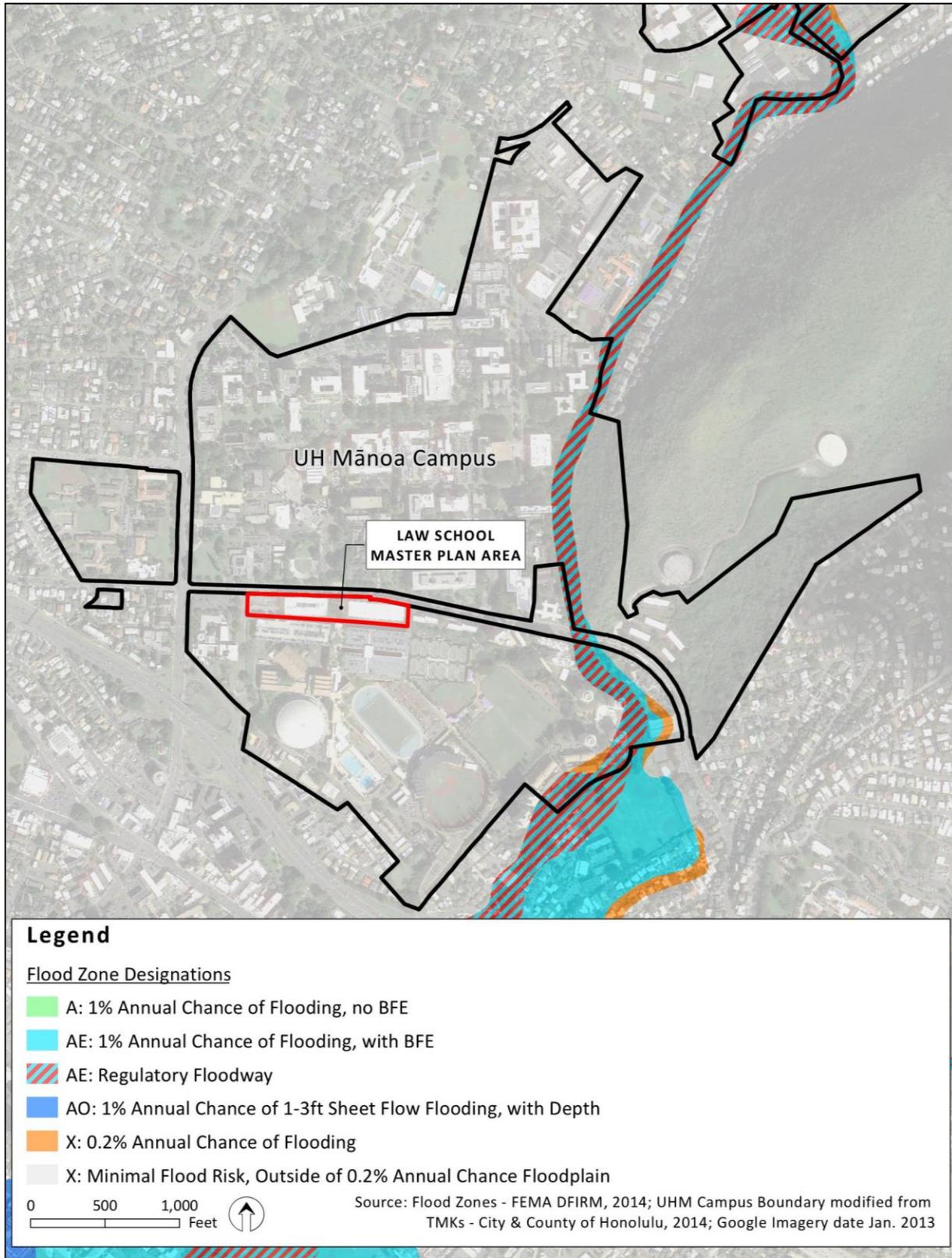


Figure 3.3 Flood Insurance Rate Map

### 3.5 AIR QUALITY

**Existing Conditions** - Consistent trade winds regularly blow from a northeasterly direction, creating conditions for excellent air quality over the islands because the prevalent wind directions moves generated air pollutants on land to the southwest out to the open ocean. Present air quality in the Mānoa Campus area is mostly affected by motor vehicles, with carbon monoxide being the most abundant of the pollutants emitted. Exhaust from laboratories, mechanical rooms, etc., are isolated and dispersed through systems that meet air quality standards.

**Anticipated Impacts and Mitigation Measures** – There will be two types of short-term air quality impacts that will result from the proposed construction project: 1) fugitive dust generation and 2) on-site/off-site emissions from moving construction equipment and commuting construction workers. Long-term impacts to air quality from Law School-related traffic are expected to be minimal. Localized vehicular emissions at the site are not anticipated to significantly increase.

Air quality monitoring can be implemented if needed by the University, County, or State to ensure compliance with State Ambient Air Quality Standards. Strict compliance with State and County pollution control requirements, such as dust-watering programs and covering dirt-hauling trucks will mitigate fugitive dust from construction activities. On- and off-site emissions from construction equipment and workers can be controlled, as appropriate, by the use of proper equipment and restricting working hours. Proposed measures to improve traffic flow within Zone 17 parking lot should offset some of the localized emissions increases.

### 3.6 NOISE

**Existing Conditions** - The ambient noise levels around the Mānoa Campus and Law School site are typically consistent with noise levels found in urbanized residential areas. A 1989 Noise Impact Study (Y. Ebisu & Associates, 1989) discussed existing and anticipated noise issues on the Mānoa Campus and found ambient noise levels did not exceed guidelines set by the Department of Health.

**Anticipated Impacts and Mitigation Measures** – The proposed Law School Master Plan facilities are not likely to result in an increase in ambient noise levels on the UHM Campus. However, significant amounts of noise will be generated during the construction period. No extraordinary mitigation measures are proposed at this time since the noise generated by current and proposed activities is not expected to exceed allowable levels. Construction activities will be monitored by the University and State to comply with the provisions of the regulations for community noise control. The contractor will be required to obtain a noise permit if the noise levels from construction activities are expected to exceed the allowable levels. Heavy vehicles traveling to and from project sites will comply with the State’s administrative rules for vehicular noise control.

### 3.7 FLORA AND FAUNA

**Existing Conditions** - The vegetation on the Mānoa Campus is almost entirely urban in character. There are, however, endangered or threatened trees located around the campus. None of the existing trees surrounding the proposed project site are considered to be endangered. Vegetation on the site includes monkeypod, Singapore plumeria, pink tecoma, mock orange, pīkake,

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pōhinahina, and red hibiscus. Pink tecoma is considered invasive or weedy as the seedlings sprout easily. The west wing Courtyard has the greatest diversity of plants, with emphasis on native Hawaiian species. The existing mature trees function as a unifying element, providing a green matrix that helps unify existing buildings. The Campus Heritage Plan (2009) for UHM identifies the row of monkeypod trees along the makai side of Dole Street fronting the Law School area as trees of note as they contribute to the cohesive colonnade that extends along Dole Street from University Avenue to Johnson Hall and should be protected. A monkeypod tree of note is also designated in the center of the pedestrian plaza.

One of the key elements of the 2007 LRDP Update is the development of a Landscape Master Plan (LMP), which was updated in 2012, that provides guidelines for knitting together the campus into a unified whole. The May 2012 UHM LMP Update identifies area along Dole Street and Lower Campus Road as Streetscape Landscape Zone, which calls for visual continuity, park-like environment, establishment of gateways at major access points to the campus, and human comfort. Parking for cars, bikes, and mopeds should not enter into pedestrian areas. Permeable paving should be used when conditions allow. Edges of parking lots should be visually screened with plantings or low walls. The LMP also identifies the pedestrian plaza between the east and the west wing as a Civic Landscape Zone and calls for simplicity in design, civic scale, art work, symbolic value/landmark stature, spatial continuity by using similar paving and planting materials, serving as a gathering place, and utilizing LID stormwater management strategies.

The urban character of the campus does not provide a good habitat for wildlife. The predominant fauna are introduced species, including rats, mice, mongoose, and feral cats. Typical avifauna includes Common Indian Mynah, doves, and sparrows. No rare, threatened, or endangered species are known to exist on the project grounds. However, according to the U.S. Fish and Wildlife Service (FWS), endangered Hawaiian hoary bats have been documented within the project vicinity and White fairy Terns, protected under the Migratory Bird Treaty Act of 1918, may also occur in the project area.

***Anticipated Impacts and Mitigation Measures*** – Implementation of the Master Plan will require selected removal of several trees, none of which are identified as endangered or threatened. The majority of these trees will be relocated within the Law School complex or elsewhere on campus, except for the invasive Pink tecoma trees along Dole Street at the Zone 17 parking lot, which will be replaced with monkeypod trees. Modification to the parking lot and/or relocation of the sewer line that runs parallel to Dole Street may be required to provide adequate space for the planting of monkeypod trees (*Figure 3.4*). It is expected that during construction, birds or other introduced wildlife that frequent the area will migrate to nearby undisturbed areas and return when the disturbances cease. Night time construction is not planned.

Coordination between the Facilities Management Office and University landscape architects will be required to determine the appropriate method and means for selected tree removal and, where feasible, relocation areas on-campus. Efforts will be made to preserve and protect mature trees in the surrounding area during construction. Specific mitigation measures for tree preservation during construction include:

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- Existing trees should be monitoring weekly and irrigated as needed during construction.
- The root zone of all trees must be protected. The root zone is defined as five times the trunk diameter distance from the base of the trunk, or from the trunk to the tree dripline, whichever is greater.
- All trees to remain should have protective chain link or construction fencing on a secure footing placed 10' beyond the tree dripline wherever possible.
- A tree protection drawing should be submitted with project plans. The drawing should detail the protective fencing and identify the existing trees to remain, trees to be removed, and trees to be relocated, including species, trunk diameter and canopy diameter.
- A construction staging area should be specified. Construction materials/equipment/ personal vehicles should not be placed near the root zone of trees to avoid soil compaction. Additionally, construction debris and liquid materials should not be dumped around the root zones of existing trees and shrubs.
- No lime or other soil treatment should be applied without the consent of a University of Hawaii Landscape Manager.
- There should be no grade change within a minimum of ten feet of the trunk of the existing trees, and preferably none within the entire root zone.
- When trenching, roots larger than 2 inches in diameter should not be severed without first consulting a University Landscape Manager.
- Trenching under roots is preferable to root cutting. However, if cutting is necessary, roots should be cut cleanly and not torn.
- Trenching within a tree's root zone should be avoided. However, if it is necessary, hand digging should be used within the tree's root zone.

Landscape elements such as a landscaped plaza, entryway, parking lot, courtyards, and possibly a green roof planned for the Law School complex will enhance the overall campus landscape and help to support the University's desire for an integrated and fluid landscape. The Law School Master Plan will also comply with tree canopy coverage goals and no net loss of tree cover or species as specified in the LRDP.

Best practices will be implemented to minimize impacts to Hawaiian hoary bats and White fairy Terns. Disturbance to woody plants greater than 15 feet tall will be avoided to the possible extent during the bat birthing and pup rearing season, from June 1-September 15. In the circumstance that these trees will be disturbed during that period, an experienced biologist will examine the trees for the presence of White fairy Terns and Hawaiian hoary bats. Outdoor lighting will be shielded to reduce the impact to nocturnal flying native birds. The project will utilize full cutoff outdoor lighting fixtures. Refuse containers such as dumpsters and outdoor trashcans will have lids or closing mechanism so that they will not become food source for mongoose, rodents, cats or other wildlife predators. Impact on wildlife in the project area by feral cats, is not anticipated. However, if the issue arises, the University will work with the Hawaiian Humane Society to address the feral cat issue.

### **3.8 UTILITIES AND INFRASTRUCTURE**

The following paragraphs discuss three important infrastructure systems, namely the drainage system, the wastewater system, and the potable water system. Master planning for these three

systems is ongoing, with campus wide plans under preparation by R.M. Towill beginning in 2013. The following discussions were informed by data collected as part of the campus infrastructure master planning process, as well as from the utilities and infrastructure assessments prepared as part of the Law School Master Plan by Belt Collins Hawai'i Ltd. (2008) and the Preliminary Engineering Report (PER) prepared for the CLOC building by Group 70 International, Inc in December 2014 (*Appendix A*).

### 3.9.1 Potable Water System

**Existing Conditions** – The UHM Campus is served by the City Board of Water Supply (BWS) system. There are several water meters on campus that connect to the BWS system. The Law School buildings are serviced by the BWS's 180-foot elevation system, off of a 2-inch meter and a 2.5-inch lateral to a BWS 12-inch line in Dole Street. A major water line connection to the BWS system that serves the Lower Campus is located at the northwest corner of Zone 17 Parking Lot. Water pressures on-site range from 40 to 50 pounds per square inch (psi) or 30 psi during peak periods, which is below the minimum pressure allowed by BWS under peak hour flow conditions. The Law School buildings have a domestic water booster pump system. The existing irrigation system is operational but in poor condition and should be replaced. The existing Law School Building does not have a fire sprinkler system. Fire hydrants are located at the northeast corner of the existing Law School west wing on the makai side of Dole Street and at the northwest corner of the west wing on the mauka side of Dole Street. Hydrants appear to be publicly owned by BWS. Privately owned and maintained fire hydrants are also located on Lower Campus Road at the ground level of the parking structure, makai of the site. Existing hydrants around the site provide adequate water supplies.

**Anticipated Impacts and Mitigation Measures** – The Law School Master Plan project is not anticipated to significantly increase the overall water demand for UHM. There is adequate capacity in the existing BWS system to serve the project requirements. Water service to the new CLOC building will be provided through the existing plumbing or via a new lateral connection to the 12-inch BWS main in Dole Street. However, the existing on-site water pressures are inadequate and would likely require a domestic water booster pump system. A new irrigation system will be required and a booster pump may be required for the irrigation system as well. Any new connections to the Board of Water Supply system will require a new meter. A backflow assembly on a new domestic service lateral is not expected to be required for CLOC. Sprinklers for the existing building and/or new building will be provided if required by applicable building codes and based upon CLOC's size, design, and configuration.

Campus-wide improvements will be implemented in the next 5 to 10 years to improve overall water service to UHM. In order to correct the inadequacies of the existing system, R.M. Towill recommended three water system upgrades, including upsizing the existing lines and addition of a new line. The goal of the University is to reduce water consumption by 10% annually through water conservation measures to meet Leadership in Energy and Environmental Design (LEED) standards, which will be incorporated into development plans for the Law School site and other projects around the Mānoa campus. The Law School project will provide a water supply approved by the City, capable of supplying the required fire flow for fire protection.

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Pink Tecoma at Zone 17 Parking Lot along Dole Street



Monkeypod Trees at Dole Street



Monkeypod Tree on Ewa End of West Wing



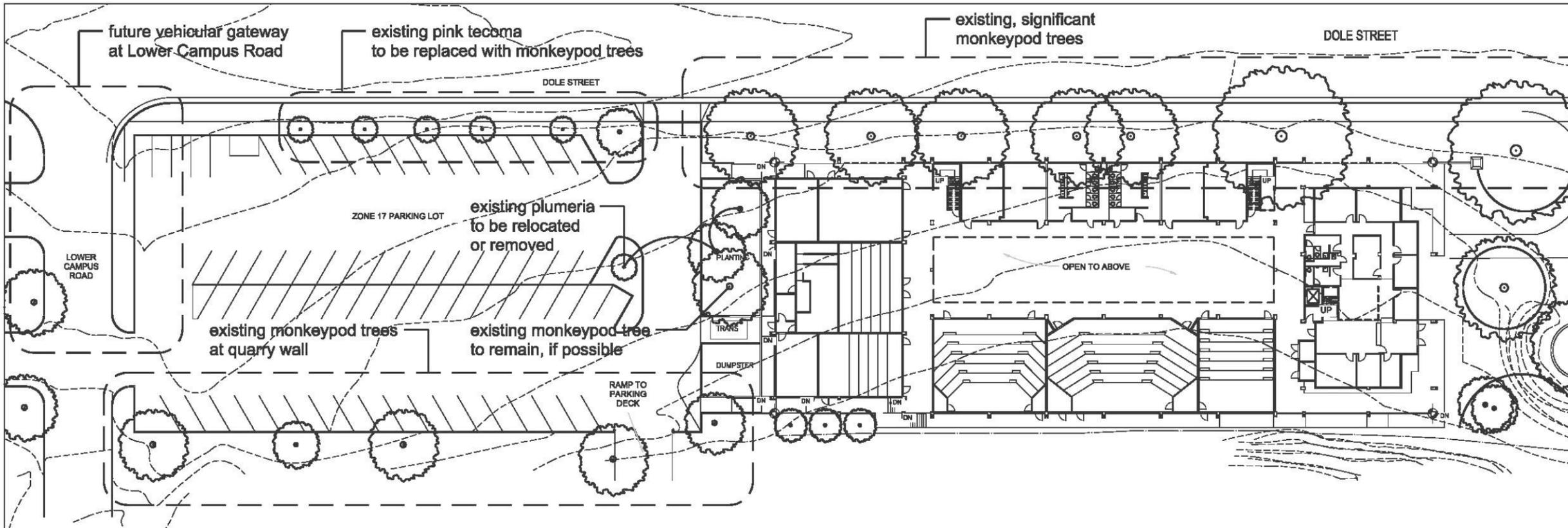
Singapore Plumeria on Ewa End of West Wing



Plumeria in Zone 17 Parking Lot



West Wing Courtyard



Future Vehicular Gateway at Lower Campus Road



Monkeypod Trees at Quarry Wall



View of Round Top



View of Wa'ahila Ridge



Partial View of Diamond Head

FIGURE 3.4 Landscape Diagram

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### 3.8.2 Wastewater System

**Existing Conditions** – The UHM wastewater needs are served by a combination of City and private gravity wastewater collection systems. The existing Law School buildings appears to be served via a 6-inch lateral located on the mauka face of the building, which discharges to an existing City sewer manhole located on UH property within the planting area along the sidewalk on Dole Street. A 6-inch city sewer line runs west to another city manhole located in the Zone 17 parking lot, and an 8-inch city sewer line runs north from this manhole to connect to an existing deep drop structure on an existing 60-inch City reinforced concrete pipe (RCP) sewer line, flowing east to west in Dole Street. Per discussions with the City and County of Honolulu and based upon the Draft UH Sewer Master Plan by R.M. Towill, sewer capacity in the Dole Street system does not appear to be an issue. Additionally, an existing privately owned sewer force main is located on the far west side of the CLOC project site along the western edge of the Zone 17 Parking lot. This force main is a major line conveying flows from the Lower Campus.

UH Facilities and Maintenance Office and Law School staff indicates that wastewater odors are often present in the Zone 17 parking lot, which may be coming from the City's sewer system. Odors seem to be present where the force main from the Lower Campus discharges into an existing manhole in the Zone 17 Parking Lot prior to gravity discharge into the City system.

**Anticipated Impacts and Mitigation Measures** – Sewer service for the Law School Master Plan is not expected to be significantly impacted. The expected increase in sewer flow is minimal for the size and type of the building addition proposed. A sewer capacity availability request will be required at the appropriate time. Existing sewer systems, including the 6-inch and 8-inch City lines located mauka of the existing Law School buildings should be sufficient to serve the proposed project. A new lateral connection for the CLOC building, directly to the City-owned line in the Zone 17 Parking Lot, will be required. The existing sewer lines on-site will be protected and maintained in place to the maximum extent possible, including the lateral for the existing Law School west wing and the existing force main located in Lower Campus Drive and portions of the Zone 17 parking lot. A filter will also be installed as part of the sewer system improvement to address the odor issue.

### 3.8.3 Drainage System

**Existing Conditions** – The UHM campus is part of the Mānoa watershed. Large quantities of off-site drainage from portions of Mānoa Valley are conveyed via the City's drainage system through and around the UHM Campus. However, record drawings show no piped storm drain connections to the City's system from the Law School Building.

According to the PER prepared for the CLOC building in 2014, existing site runoff from the Law School appears to primarily sheet flow towards the rear of the site where it is directed by an existing concrete curb to a recently installed trench drain and drain inlet near the bridge connecting the Zone 17 Parking Lot and the Parking Structure. The inlet and trench drain were installed under Phase 1B of the Lower Campus Quarry Wall Stabilization Project in 2008. The runoff is released from the trench drain and inlet, down a concrete swale leading to a rock energy dissipater.

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The existing Law School buildings appear to contain downspouts located on the exterior face of the columns at the perimeter of the structure. The downspouts facing Dole Street appear to be piped out towards the street via 4-inch drain pipe under the mounded planted area between the building and the street. Runoff flows over the sidewalk in specific spots near the discharge points. Downspouts facing the parking structure makai of the site appear to be collected via 8-inch drain pipe and are discharged through two outlets within the existing CRM wall at the top of the existing rock face. The remainder of runoff from the Zone 17 Lot is conveyed via surface flow and allowed to drain down the rock face, as previously described. A sub-drain system along the mauka and makai edges of the building was also shown on record drawings, and appears to discharge similarly to the roof drains to Dole Street and to the makai rock face.

The drainage runoff estimated from the proposed CLOC building is approximately 3.42 cubic feet per second (cfs), based on a 10-year recurrence interval, 1-hour duration rainfall.

***Anticipated Impacts and Mitigation Measures*** – The disturbed area of the site is expected to be less than one acre. The LID treatment Best Management Practices (BMPS) from DPP will not be required. Altogether, the project is not anticipated to have significant long-term impacts on campus drainage. The building extensions will be in areas that are already paved. Building slabs and paved areas will be set close to existing grades to minimize excavation and embankment, thus retaining the campus' existing drainage patterns. Proposed mitigation measures for the project and overall UHM Campus detailed below will help to prevent future flooding and impacts to the existing drainage system.

Grading and drainage will mimic existing conditions, as existing grades on site are generally flat with moderate slopes in some areas. Dole Street will remain at the high end of the site, while the area within the reconfigured parking lot and CLOC will drain from mauka to makai. Proposed grades will be designed to direct stormwater runoff away from buildings and structures, and grades will accommodate required accessibility, as determined by ADA guidelines.

New drainage infrastructure will be installed to support the new CLOC building and reconfigured Zone 17 parking lot. Improvements are expected to include, but not limited to: catch basins and drain inlets, storm drainage piping, sub drains, retaining wall drains, and new storm drain connections to private or public systems. Stormwater from roof drains will be collected and conveyed via new infrastructure surrounding the building.

Special consideration will be given to the existing rock face makai of the project site and drainage infrastructure will be installed to minimize storm water impacts to the existing rock face's stabilization. Any construction near or adjacent to this rock face will be limited and improvements will be carefully designed by a structural and geotechnical engineer.

LID improvements and BMPs will be provided where practical and feasible to support sustainability, improve stormwater quality, and manage stormwater quantity. Based upon preliminary soils information, infiltration may be suitable for the site. However, because the site is close to an existing rock face and because the subgrade within the Zone 17 Parking lot area consists of significant rock formations, infiltration in close proximity to the stabilized rock face will likely be infeasible due to the difficulty in breaking apart the rock and protecting the existing

slope. In this case, biofiltration and detention of stormwater runoff may be applicable. This could be accomplished through vegetated swales or planter boxes.

Additional areas to install LID BMPs may also be available at the ground level of the adjacent parking lot to the south. Additionally, rainwater catchment and reuse for irrigation purposes may be incorporated as a potential LID opportunity, as well as an educational opportunity for UH students to understand the importance and practicality of rainwater harvesting.

### 3.9 ELECTRICAL AND COMMUNICATIONS

**Existing Conditions** – Electrical service for the project area is provided by Hawaiian Electric Company (HECO). Hawaiian Telcom provides telephone service, and Oceanic Cable, Inc. provides cable TV by underground cables. The entire UHM Campus is serviced by these providers. The campus electrical distribution system at the University consists of 12.47kV primary electrical circuits that feed the various buildings on campus via step-down pad-mounted transformer that provide service to the buildings. The west wing of the Law School is fed from primary circuits from electric manhole 1.03, located mauka of the west wing along Dole Street. The primary circuits terminate at a pad-mounted transformer located between the west wing and the Zone 17 parking lot. The transformer provides electric service to a metering/ distribution switchboard located in west wing utility room. The University's telecommunications distribution system consists of two independent systems. The first system is the original site distribution system, which is utilized primarily for public utility services. The second system was installed in 1990, which now provides the majority of the fiber optic backbone for the campus.

The existing telecommunications services to the west wing of the Law School are extended from communications manhole 1.03 and telephone manhole 1.03, located mauka of the west wing along Dole Street. The service entrance cables terminate in a cabinet located in the west wing utility room. The 1990 system's site infrastructure includes an existing communications ductline routed through the driveway entering the Zone 17 parking lot from Dole Street terminating at 1990 manhole 200, located in the Zone 17 parking lot near the gate that separates the Zone 17 parking lot from the Zone 20 parking structure. Service to the Law School Building is provided from the 1990 system from 1990 manhole 200. The fiber optic cables that currently provide service to the west wing have adequate capacity to provide high speed access to the west wing and the CLOC.

In addition to providing telecommunications service to the west wing, this ductline is the main communications trunk for the buildings on the Lower Campus. This ductline needs to remain in service during construction to maintain telecommunications service to the Lower Campus. UH ITS is amenable to the construction of an elevated structure over the ductline provided that service access to the manhole is maintained.

**Anticipated Impacts and Mitigation Measures** – The proposed project will impact the demand for electrical, telephone, and cable services; however, there is adequate capacity to support the project with building service improvements by the UHM IT Facilities and the service providers. CLOC may be provided electrical service through extending the circuits through new duct lines from an existing electric manhole located along Dole Street or through new duct lines from an existing electric manhole located in the adjacent music building parking lot. The manhole along

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Dole Street would involve trenching within City and County of Honolulu right of way. New manholes and vaults would be required in either scenario.

Telecommunications services for the CLOC will need to be extended from both the old system and the 1990 system. Underground ducts could be extended from the existing 1990 manhole 200 in the Zone 17 parking lot to provide connectivity from the 1990 system to the CLOC. New ducts from the old system will need to be extended from either existing manhole groups along Dole Street or in the adjacent music building parking lot.

Existing telecommunication and electrical utilities may require relocation towards the southwest corner of the existing Law Building where several manholes and transformers were located at the exterior of the building and within the Zone 17 Parking Lot, depending on the final configuration of the new building.

Any necessary off-site improvements required to provide the additional services will be the responsibility of HECO, Hawaiian Telcom, and Oceanic Cable, Inc. Required project connections to the services systems will be coordinated with the respective service providers to minimize any potential disruption of service on campus or in adjacent areas to the campus.

### 3.10 TRAFFIC

A traffic assessment was prepared by Austin, Tsutsumi & Associates, Inc. in October 2015 for the Law School Master Plan, which focused on the proposed CLOC building (*Appendix B*).

**Existing Conditions** – Manual turning movement traffic counts and field observations were conducted at University Avenue/Dole Street intersection, Dole Street/Lower Campus Road intersection, Dole Street/Pedestrian Crosswalk, and Dole Street/Law School parking lot driveway on Saturday April 25 and Thursday April 30, 2015. The weekday AM and PM peak hours of traffic were determined to occur between 7:15AM to 8:15AM and 4:00PM to 5:00PM, respectively. Special event observations and data collection were done following a UH Men's Volleyball game which recorded the second-highest attendance for the season at 6,120 people. The peak period for exiting vehicles following a special event was determined to be from 9:30 PM to 10:30 PM.

Currently the University Avenue/Dole Street intersection operates at an overall LOS D(E) during the AM(PM) peak hours of traffic with overcapacity conditions for the westbound left-turn movement during the PM peak hour of traffic.

All movements at the Dole Street/Lower Campus Road and Dole Street/Pedestrian Crosswalk intersections currently operate at LOS B or better during the AM and PM peak hours of traffic. However, the analysis results do not reflect the congested traffic conditions observed in the field. Field observations revealed that vehicles from both approaches at the Dole Street/Lower Campus Road intersection had difficulty crossing this intersection due to limited storage space as a result of the spill back from University Avenue.

Highway Capacity Manual analysis could not be performed at the studied intersections for the special event, as temporary traffic control and special duty officers were used to direct traffic. At

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the University Avenue/Dole Street intersection, special duty officers maintained queue lengths similar to peak hour conditions for all approaches to the intersection while restricting north and southbound left-turn movements. Westbound left-turn queues typically spilled back to the Dole Street/Lower Campus Road intersection throughout the entire egress duration following the game. At the Dole Street/Lower Campus Road intersection following the special event, Lower Campus Road egress queue lengths typically spilled back from the intersection reaching the parking structure and spilling up the parking levels. The Dole Street/UH Law School Parking Lot Driveway is the main egress point for the upper levels of the parking garage via the bridge that connects the Law School parking lot directly to the roof level of the garage. Vehicles utilizing this egress point are restricted to right-out movements only with the queue length spilling back into the garage, wrapping down two levels.

Zone 17 parking lot has been used as a “drop off” by UH students and staff. Vehicles often queued up to make a left turn back on to Dole Street. Vehicles also tend to speed out on to Dole Street. These vehicles cause traffic congestions within the parking lot and raises pedestrian safety issues.

**Anticipated Impacts and Mitigation Measures** - As a result of the new CLOC building, approximately 35 existing parking stalls within the UH Law School parking lot will be removed. Displaced vehicles will be relocated to the adjacent parking structure. In addition, access to the existing Law School Driveway fronting Dole Street will be restricted to maintenance vehicles, special guests, and egress following special events. The new CLOC building will add approximately 35(46) AM(PM) trips to the surrounding roadways. Peak hour impacts to existing delay will be marginal but are anticipated to reduce LOS at select movements as a combined result of de-facto growth rates and project generated traffic.

The LRDP 2007 Update PRU outlines proposed mitigation strategies at the University Avenue/Dole Street intersection to alleviate anticipated congestion in year 2017. The proposed mitigations are broken down into two phases. Phase 1 consists reconfiguring 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. Phase 2 consists of incorporating three (3) exclusive through lanes and two (2) exclusive right-turn lanes, with the right-most lane directly connecting to the H-1 Freeway Westbound Off-Ramp. In addition, the eastbound approach to the Dole Street/Lower Campus Road intersection will be modified to incorporate an exclusive through lane, a share through/right-turn lane, and an exclusive right- turn lane. Implementation of the above phases would significantly improve intersection operations for the University Avenue/Dole Street intersection. With these improvements, overall LOS would remain at LOS D(E) during the AM (PM) peak hours of traffic, with notable reductions to intersection delay.

The proposed Law School improvements will not have an impact on special events traffic.

The Master Plan is proposing circulation reconfiguration to the Zone 17 parking lot by having one access/egress point off of Lower Campus Road. Access to the Zone 17 parking lot from Dole Street will be restricted to maintenance vehicles as well as egress vehicles following special events. A ‘Do Not Block’ pavement striping will also be installed along Lower Campus Road fronting the existing Zone 17 parking lot entrance. These improvements will mitigate congestions from ‘drop off’ vehicles and increase pedestrian safety along Dole Street.

### 3.11 SOCIO-ECONOMIC CHARACTERISTICS

**Existing Conditions** – The communities adjoining the UHM Campus beyond its mauka and ewa borders (Mānoa and Lower Mānoa, respectively) are largely older and stable neighborhoods or large single-family residences. Many of the homes were constructed in the early 1900s and are maintained in good condition. Wa’ahila Ridge, Mānoa Stream, and private and public educational and recreational facilities border the campus on the Koko Head side. The H-1 Freeway and the Mō’ili’ili residential and business communities border the campus on the makai side. Mānoa is generally considered a very desirable place to live, and home values are high. Many UHM students, faculty, and staff live in the surrounding communities.

**Anticipated Impacts and Mitigation Measures** – The further development of the UHM Campus with the Law School Master Plan project and other projects identified in the 2007 LRDP update is not expected to adversely impact property values around the campus. As in the past, major developments on campus have had no measurable negative impact on property values. The project will create short-term benefits as a result of design and construction employment. Upon completion, the proposed improvement will have beneficial long-term social and economic impacts including increased opportunities for the UHM campus through the success of the Law School clinical and other programs and its ability to provide world leading research and education. No specific socio-economic mitigation actions are recommended.

### 3.12 PUBLIC SERVICES

**Existing Conditions** – The following describes a variety of public services available on and around the UHM Campus, which also includes services to the Law School site. These include Fire Protection, Security, Medical Emergencies, Solid Waste Management, and Accessibility for Persons with Disabilities:

- **Fire Protection:** The Honolulu Fire Department has four stations in proximity to the campus. First response for medical and fire emergencies at the project site and the surrounding area are provided by the Mānoa Fire Station located on East Manoa Road. Current University policy calls for access to fire apparatus, water supply and building construction to be in conformance with existing relevant codes and standards.
- **Security:** All routine patrols and surveillance are provided by the University’s Department of Public Safety (DPS). The Honolulu Police Department is called when situations arise that are beyond the capabilities of UHM OPS or when arrests are required.
- **Medical Emergencies:** Routine and emergency medical services are provided by the University’s Student Health Service (USHS). If a situation arises that is beyond USHS’s capabilities, the case is referred to the patient’s doctor and/ or to local hospitals. Numerous major hospitals and clinics are also in relative proximity to the UHM Campus. Prompt attention is available to patients in medical emergencies. The nearest emergency hospital, Kapi’olani Medical Center is located approximately 1.6 miles from the project site, taking an average response time of 5-7 minutes.

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- **Solid Waste Management:** Refuse is collected and disposed by University personnel at County transfer stations or landfills. Most of the “green waste” from the UHM Campus is composted and is not disposed as refuse. Recycling programs exist on campus and are managed by separate schools and programs.
- **Accessibility for Persons with Disabilities:** Decades ago, the UHM Campus embarked on a program to remove barriers for persons with disabilities. During this time, the University has removed barriers from many scattered locations throughout the campus based on very specific needs. While measurable progress has been made, the UHM Campus still strives to improve its efforts to become an institution that is more user friendly to persons living with disabilities.

***Anticipated Impacts and Mitigation Measures*** – The following paragraphs describe how a range of public services will be impacted and, if necessary, mitigated by the proposed Law School Master Plan project:

- **Fire Protection:** Fire access for the Law School buildings will continue to be provided off of Dole Street. Existing hydrants around the site provide adequate water supply. Sprinklers will be provided if required by applicable building codes. Current fire protection codes will be met and the University will continue to coordinate with the Fire Department. Fire access and water supply system for the project will be designed to meet National Fire Protection Agency (NFPA) 1, Uniform Fire Code, 2006 requirements and all additional amendments as part of the Hawai'i Administrative Rules (HAR) Title 12, Subtitle 7, Chapter 45.2.
- **Security:** Proposed improvements, such as the construction of malls, paths, and plazas that will accompany building projects like the Law School Master Plan, are expected to improve student and staff safety in the evenings. Emergency phones, orientation programs, and increased surveillance have been implemented and continue to be improved by the University. The improvements mentioned above will encourage the use of routes that are more heavily traveled, better lit, and more easily patrolled.
- **Medical Emergencies:** The proposed project will not impact the handling of medical emergencies on the UHM Campus. The Kapi'olani Medical Center and the Student Health Center will continue to function in its present locations and will be accessible to the Law School area. No mitigation is proposed.
- **Solid Waste Management:** Solid waste is collected in dumpsters that are hauled away by private contractors. Implementation of the Law School Master Plan will generate additional solid waste; however, recycling efforts will be made as programs have been implemented on a building by building basis. Construction of the new CLOC building will generate construction waste. With a construction waste management plan, approximately 50-75% of construction waste could be diverted from landfill. The nature of the waste that will be generated by the construction of the proposed project will be minimized by emphasizing full use of materials and recycling, and proper disposal of all solid waste.

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- **Accessibility for Persons with Disabilities:** Overall, the Law School Master Plan project will improve the network of accessible routes that connect to all parts of the UHM Campus. Improvements to the existing Law School buildings with the addition of the CLOC building will be in conformance with the provisions of the American with Disabilities (ADA) Act, which been incorporated into the City's Building Code. During construction, several stalls will be relocated for users with disabilities and a temporary ramp will be constructed to ensure ADA-required access for individuals requiring assistance to access the building.

### 3.13 ARCHAEOLOGICAL RESOURCES

**Existing Conditions** – As the proposed Law School Master Plan project is classified as a “state project,” it is subject to a historic preservation review process under the auspices of Hawai'i Revised Statutes, §6E-8. Under §6E-8(a), before the University can commence with this project, it needs to afford the State of Hawai'i, Department of Land and Natural Resources, State Historic Preservation Division (SHPD) an opportunity to review the effect of Law School Master Plan project on known or potential historic properties.

In May 2008, an *Archaeological Literature Review and Field Inspection Report for the University of Hawai'i at Mānoa Long Range Development Plan Project* was completed by Cultural Surveys Hawai'i (CSH). This study was designed to address archaeological site types and locations and to provide for future recommendations for archaeological work to be completed. The goal was to identify, if possible, a comprehensive report of known cultural resources and historic properties and to provide recommendations for the University as related to the State of Hawai'i's historic review process.

In the May 2008 study, the Area of Potential Effect (APE) consisted of the entire approximately 304-acre campus. The findings of this study identified several past studies that documented historic properties around and within the boundaries of the campus. (*Figure 3.8*) Specific sites that have been previously assessed as eligible for the Hawai'i Register of Historic Places (HRHP) include:

1. The historic core of the campus (State Inventory of Historic Properties [SIHP] No. 50-80-14-1352), consists of Hawai'i Hall, George Hall, Dean Hall, Gartley Hall, Crawford Hall, Varney Circle, Founder's Gate, Andrew's Outdoor Amphitheater, Wist Hall and the Pineapple Research Center. These historic structures were added to the HRHP in 1984.
2. Kānewai Cultural Garden (SIHP No. 50-80-14-4498), consisting of modern surface features (irrigation ditches feeding into taro pond fields) overlying centuries-old deposits consistent with a long history of gardening at this spot along the Mānoa Stream. Subsurface testing (archaeological excavation), radiocarbon dating and pollen analysis by International Archaeological Research Institute, Inc. demonstrate use of the area as a taro lo'i from the middle 1400s, and perhaps earlier. It is also important to state the nearby “Dole Street burials” documented by CSH in 1991 are reburied on the grounds of the Center for Hawaiian Studies.
3. SIHP No. 50-80-14-4191, a traditional-style presumably pre-contact-era burial discovered during construction activities at Keller Hall (Smith and Kawachi 1991).

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Additionally, the following historic properties located within the boundaries of the UHM campus have not been previously assessed for eligibility for the HRHP:

1. Koana Cave, which has apparently never received a site number designation (see recommendations below), has yielded human skeletal remains (accessioned by the Bishop Museum in the 1960s), and probably contains as yet undiscovered historically-significant cultural materials consistent with habitation and/or gardening, in addition to more human skeletal remains.
2. Hipawai Heiau was designated by McAllister (1933) as “Site 63,” that is, SIHP No. 50-80-14-63, but no archaeological observations were made since the site was reported as “torn down” earlier by Thrum. CSH archaeologists may have identified a remnant section of stone wall associated with this heiau, however, as discussed in some detail above, this feature is located just outside the boundaries of the UH property.

In addition to the aforementioned historic properties located on the UHM campus, two areas in the Wa’ahila Ridge portion of the campus containing possible rock shelters were identified during the course of the subject field inspection. Additional testing (controlled archaeological excavations) would be needed to more accurately determine whether these possible rock shelters contain any historically-significant cultural materials.

***Anticipated Impacts and Mitigation Measures*** – Archaeological records indicate that there have been limited past discoveries of human remains in the vicinity of the UHM campus. The largest discovery was along Dole Street near Kānewai, where 18 iwi kūpuna were discovered during trenching by the Board of Water Supply. However, the most notable find within the same soil context as the Law School site was the discovery of partial remains of a single kūpuna at Keller Hall (SIHP No. 50-80-14-4191). It is not clear if this burial was in situ or a secondary context that could have been attributable to original construction activity of Keller Hall or some other near vicinity construction. Review of the complete report for this burial discovery did not indicate any specific information of the burial context that could provide input to the probability of future discoveries on the campus grounds. In review of the 2008 CSH study, none of the recorded archaeological sites are on or near the Law School site.

There are no surface archaeological features or sites within the property. Construction activities that have occurred on or near the Law School site in recent years (i.e., construction of the new School of Architecture and Bachman Hall, trenching for a new College of Education water line) yielded no evidence of burials or archaeological resources. Preliminary evidence suggests that this area may not be a high risk area for the future potential of discovering unknown burial encounters.

A preliminary consultation meeting with SHPD occurred on November 6, 2015. SHPD determined that subsurface investigation would be required for the project. Applicant will work closely with SHPD in determining trenching locations. The draft EA will be submitted to SHPD for their review and comment.

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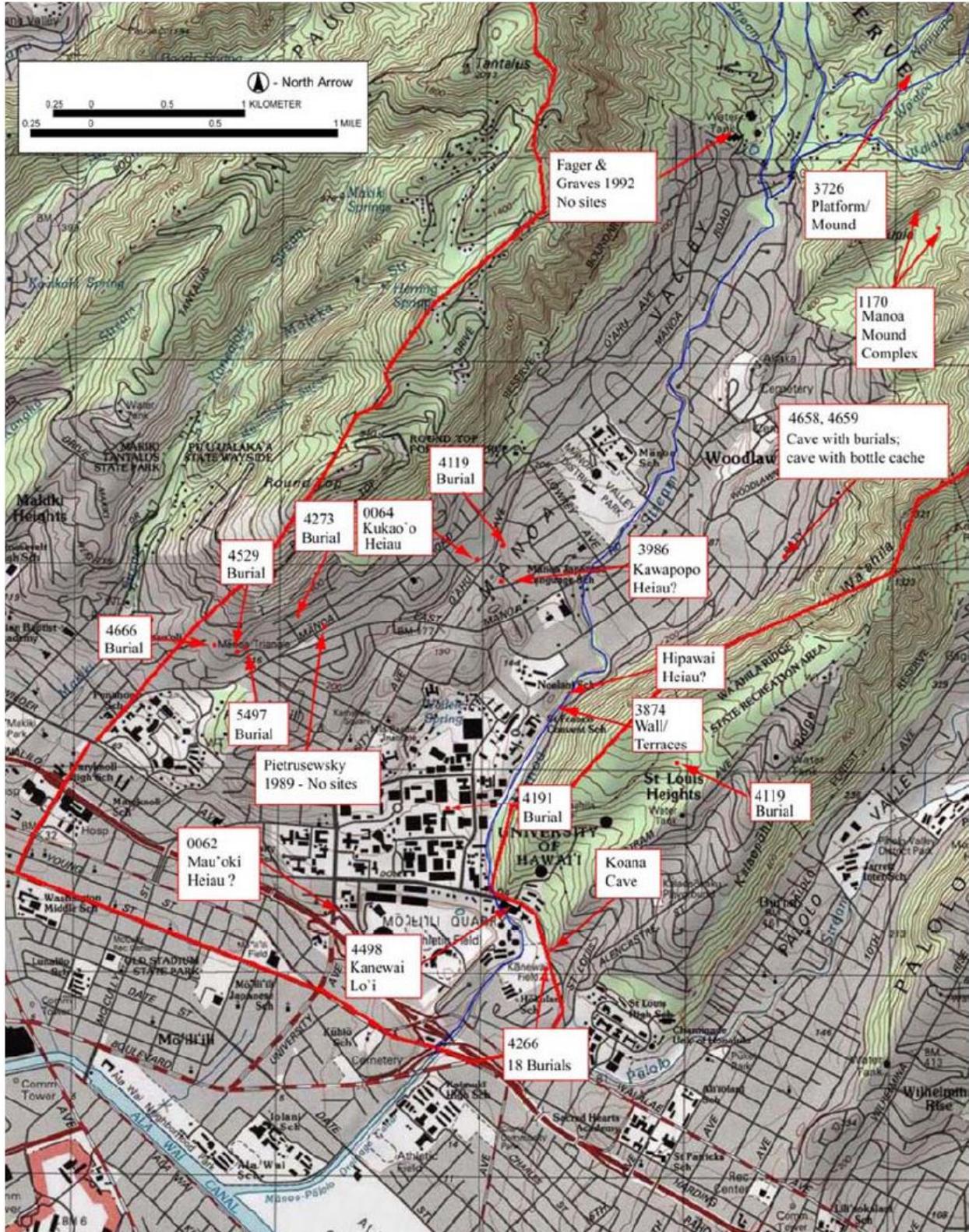


FIGURE 3.7 Previously identified archaeological sites in Mānoa Ahupua'a (Cultural Surveys Hawai'i, Inc.)

### 3.14 HISTORIC RESOURCES

**Existing Conditions** - The two existing Law School long, rectangular, concrete buildings were built around early 1980. The earth-berm walls and high windows reflect the contemporary design for the 1980s.

The Heritage Center at the UH School of Architecture published the Campus Heritage Report (CHR) in 2008 to identify heritage resources on the UHM campus for long-range planning purposes. The CHR includes a detailed inventory and data base of architectural and landscape features for the University of Hawai'i Mānoa campus and the adjacent East-West Center buildings and grounds. The report includes narrative description and physical examination of approximately 75 historic buildings; a survey and inventory of the University's botanic collection of specimen trees and shrubs; documentation of several designed landscapes and landscape features; and condition inventory of all plant materials on the campus.

The CHR utilized the National Register Criteria for Evaluation to assess the value and significance of historic resources on the UHM Campus. These criteria are set forth under 36 Code of Federal Regulations 60 (National Register of Historic Places), Section 60.4, as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded or may be likely to yield, information important in prehistory or history.

The Law School buildings were not identified as key buildings for consideration as historically significant based on the CHR.

**Anticipated Impacts and Mitigation Measures** - Law School buildings are not listed on the State Historical Register. Under the US Department of the Interior, National Park Service (NPS) guidelines, a property less than 50 years can be considered as historically significant only if the property is of "exceptional importance," or if it is an integral part to a historic district that is eligible for listing in the National Register of Historic Places. The Law School buildings were not identified as key buildings for consideration as historical significant under the National Register Evaluation Criteria according to the CHR. Under HRS §6E-2, a historic property is defined as "any building, structure, object, district, area, or site, including heiau and underwater site, which is over fifty

years old.” Accordingly, the Law School buildings also do not meet the basic legal definition of a historic property under State law. No mitigation is proposed at this time.

### 3.15 CULTURAL RESOURCES

**Existing Conditions** – A *Cultural Impact Assessment* was completed by Cultural Surveys Hawai‘i, Inc. (CSH) for the UH LRDP. For this study, the Area of Potential Effect (APE) consisted of the entire approximately 304-acre campus.

One of the requirements for the Law School project is compliance with the State of Hawai‘i environmental review process under Chapter 343, HRS, which requires consideration of a proposed project’s effect on traditional cultural practices. Through document research and cultural consultation efforts, the CSH report provided preliminary information that was applicable to the assessment of the Law School Master Plan project and its potential impacts to cultural practices.

Hawaiian organizations, agencies, and community members were contacted during the original assessment for the UH LRDP Update in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the campus and the vicinity. Organizational members or representatives were consulted and included SHPD, the Office of Hawaiian Affairs (OHA), Hui Mālama I Nā Iwi Kūpuna o Hawai‘i Nei, faculty members of the Kamakakūokalani Center for Hawaiian Studies, the Mānoa Heritage Center, the Mānoa Neighborhood Board, Ho‘okahe Wai Ho‘oulu ‘Āina, and Mālama o Mānoa.

As pertinent to the Law School Master Plan project area and its planned programmatic objectives and outreach outcomes, the noteworthy findings and applicable recommendations from this study include the following:

1. Given its abundant natural resources, including streams that feed into the main Mānoa stream and several pūnāwai (fresh-water springs), Mānoa Valley has been an attractive place to settle and garden since periods of early settlement. Lower Mānoa Valley, within which the campus is located, represents the prime wet-taro-growing area and agricultural heartland of the entire valley.
2. Mānoa is exceedingly rich in place names, wahi pana (legendary or storied places) and associated mo‘olelo (oral histories), reflecting the valley’s elevated cultural and historical significance to Kanaka Maoli. Important mo‘olelo focus on Mānoa’s many pūnāwai, which are directly associated with two primary akua, Kāne and Kanaloa. These springs include Kānewai (location of the current Kānewai Cultural Garden), Hualani, Wailele, the latter of which includes the area of the C-MORE project and the present day athletic field of the Mid-Pacific Institute and associated with Kūka‘ō‘ō Heiau, Punahou (a.k.a. Kapunahou), Ka‘aipū, Wa‘aloa and Waiakeakua. The valley is also home to many pu‘u (hills, mountains), peaks, ridges and caves, all with associated mo‘olelo; these include Wa‘ahila Ridge (which defines the eastern border of the valley) and its numerous peaks. Finally, Mānoa is also associated with a variety of other mo‘olelo, including “Pikoi the Rat Killer,” “Maluae and the Underworld,” and “The Woman Who Died and Came Back to Life;” as well as famous events and people of the early historic era, including Kamehameha I, Ka‘ahumanu and Boki.

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3. The archaeology of lower Mānoa is somewhat problematic in that most of the campus was developed before historic preservation awareness and laws were in place; thus many or most surface level sites and features once present in the project area have been destroyed and/or damaged by being covered with sediments and structures. Before these historic impacts, however, the campus undoubtedly contained a patchwork of gardens, including many lo'i (stone terraces) and 'auwai (irrigation ditches), and house sites, including many small stone enclosures, terraces and platforms. Undoubtedly, there are still subsurface cultural deposits within the campus containing significant historic and cultural resources.
4. Burials have been documented near Keller Hall and along Dole Street, immediately adjacent to the Kānewai Cultural Garden and Kamakūokalani Center for Hawaiian Studies. The latter burials, representing the remains of at least 18 individuals, have been interpreted as a traditional Hawaiian cemetery. It is possible that more burials are located in subsurface deposits within portions of the University campus area.
5. Community consultation conducted for the CSH study yielded the following:
  - a. Many participants voiced concern about the possibility of encountering as-yet undiscovered cultural and historic sites, including most importantly, human skeletal remains and burials in subsurface deposits. One participant also pointed out that the burial site preserve near Keller Hall, which used to be marked by a ginger plant, is no longer being maintained.
  - b. A few participants stated that existing undeveloped areas, including ridges and valley slopes, should not be developed or impacted in any way, given the already significant loss of such natural portions of the campus and given the importance of retaining a Hawaiian sense of place and landscape integrity. This concern about preserving the last undeveloped portions of the campus extends specifically to the Wa'ahila Ridge area.
  - c. Many participants voiced concerns about future buildings and projects being more harmoniously designed and integrated into the natural surrounding and themes inherent to the valley. It is important to note that this type of concern is fundamentally a cultural one for Hawaiians, in particular, whose world view and deeper philosophical and spiritual beliefs are based on key cultural values and concepts such as pono (in this case, "right ways" of doing things) and lōkahi ("harmony"), among other related concepts (e.g., mālama 'āina, or "taking care of the land").
  - d. A few participants talked about the importance of understanding and incorporating Hawaiian language words, phrases, and concepts that extends beyond the superficial (e.g., naming buildings).
  - e. Many participants talked about the importance of using native plants in future projects.
  - f. The Wa'ahila Ridge area is an important natural and cultural resource, containing trails, native plants, and other significant sites and features (e.g., possible rock shelter and overhangs).

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- g. A few participants provided detailed accounts of well-documented mo'olelo, wahi pana, and other cultural sites in Mānoa.
- h. Participants questioned the State's record of protecting and preserving important cultural sites in Mānoa, including heiau that have been damaged or compromised by recent construction projects.
- i. Dr. Daviana McGregor pointed out that there are many significant and commemorative trees on campus that should be systematically catalogued in order to ensure their protection during future development of the campus.

***Anticipated Impacts and Mitigation Measures*** – The proposed design seeks to create a harmonious balance within the built environment. Early consultation and coordination with SHPD administration and staff is ongoing to ensure that known concerns to potential historic properties are addressed. Additionally, other parties of interest, including OHA, have been and will continue to be consulted for their input on all elements of the proposed project and will be asked to provide specific recommendations related to measures for cultural resources. As appropriate, recommended measures by SHPD will be addressed when its final determination is provided.

Naming of key elements of the Master Plan, such as the CLOC building, the moot court, the renovated library, and the café, could be considered to honor the traditional and cultural legacy of the project area. Further opportunities to highlight and showcase the area's rich legacy through interpretative programs and artistic elements will be considered.

Discussions are ongoing with the University's Landscape Architect to ensure the appropriate measures are taken to preserve existing significant trees and mature landscapes. Future landscaping will include a programmatic element that utilizes native landscaping appropriate for the area.

### **3.16 VISUAL AESTHETIC RESOURCES**

***Existing Conditions*** - The 304-acre UHM campus, strategically located at the mouth of Mānoa Valley, is a significant part of the ahupua'a of Mānoa and Waikīkī. Mānoa Stream, which runs along the Diamond Head side of the campus, is the natural feature connecting the mauka and makai portions of the ahupua'a and is the source of the waters that feed the makai lands with their "Waikīkī" (spouting waters). Wa'ahila Ridge, which with Mount Tantalus frames the mouth of the Valley, is the Diamond Head boundary of the campus.

Given its significance within the ahupua'a, the campus inherits a major kuleana as a steward of the lands of Waikīkī. This kuleana takes many forms; its most obvious responsibility related to the land is to preserve and enhance the natural systems of the ahupua'a to the extent possible. The land has functioned with certain patterns since time immemorial and while these patterns have been modified over time, the land and its ecological values will be lost if proper stewardship practices are not continued.

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In the Hawaiian tradition, geographic orientation is often based on being able to see mountains, the sea, and prominent land forms. Thus views of the mountains and sea are visual assets of the campus.

Located above the quarry rim in the Lower Campus, the view of Diamond Head can be seen from the Law School complex.

***Anticipated Impacts and Mitigation Measures*** - With the UH LRDP 2007, Update an opportunity exists for the Mānoa Campus to become a more cohesive campus during the planning period. Key sites such as the existing Law School are identified for development during this time. Design of the Law School complex building in the Lower Campus will contribute towards providing a greater aesthetic and functional wholeness to the campus as outlined in the LRDP.

In exercising its kuleana, responsibility, and authority, UHM, through the LRDP, will maintain and enhance the natural patterns of the ahupua'a. The campus, even with its extensive development, is envisioned to be an entity that makes positive ecological contributions to its ahupua'a and the City of Honolulu. UHM is guided by the LRDP to minimize its negative impact on its neighbors while increasing its accessibility to the larger community. With the objective of sustainability adding to the beauty of the valley with large and small usable, landscaped, open spaces and with environmentally responsible buildings and facilities, the LRDP envisions the campus seamlessly transitioning from the mauka residential valley into the more urban and commercial districts of Mō'ili'ili and McCully. Where practicable, views of the mountains and sea will be preserved and others recaptured.

As planned for in the UH LRDP, the improvements and expansion of the Law School complex will enhance the gateway to the Lower Campus. In order to respect the existing buildings, the project will maintain the two-story height and will not negatively impact existing views.

### **3.17 POTENTIAL CUMULATIVE AND SECONDARY IMPACTS**

The proposed Law School Master Plan is one of the seventeen (17) new buildings and/or building expansion projects included in the UH LRDP 2007 Update for the Mānoa Campus. The LRDP focuses on projects that are on the Capital Improvement Program and/or are anticipated for development within 5-10 years.

As the university continues to improve the campus grounds with new buildings and projects detailed in the LRDP, opportunities for enhanced education and campus life experience will be afforded to students, faculty, and staff. With a recent increase in academic education and community outreach needs, additional resources on campus will help to grow existing programs such as the Law School programs. Improvement of the Mānoa Campus will help to improve the overall image of UH, attracting students from home and abroad. The creation of projects like those listed in the LRDP will bring about new opportunities in education and research and may encourage national and international investments needed to expand existing industries in the state.

Construction activity during the proposed project will generate direct employment as well as indirect and induced employment in construction-related industries. For long-term operations, the

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new building may require additional employees, including faculty and staff, as well as additional goods and services from related businesses.

Section 4.0

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ALTERNATIVES TO THE PROPOSED PROJECT



## **4.0 ALTERNATIVES TO THE PROPOSED PROJECT**

This section evaluates alternatives to the proposed project described in *Section 2.0*. The following provides a discussion of the alternatives to the proposed project.

### **4.1 NO-ACTION ALTERNATIVE**

The no-action alternative is the baseline against which all other alternatives are measured. This analysis essentially presents the details of the future site and program conditions that will most likely result should the proposed project not proceed.

The no-action alternative will result in no improvements to the Law School complex. While the selection of this alternative would mean that State lands, funds and human resources would not be expended on the project, it would also mean that the numerous substantial benefits expected to accrue from the project would not be realized since the project would not be implemented.

The no-action alternative also means that UHM would become disadvantaged in the national and global competition with other similar institutions. Needed academic and hands-on facilities for effective law education to recruit quality faculty and graduate students would not be built and will contribute to the decline in competitiveness. Disadvantage community residents will also have limited access to legal consultation and services.

Due to Hawai'i's geographic location, the Law School is well situated to offer unique specialty law programs related to Hawai'i, Asia, and the Pacific not offered elsewhere. These programs will not be able to expand without the improvements. The no-action alternative would diminish UHM's capability to continue to thrive as the flagship University that offers Hawai'i and Asia-Pacific focused law education.

### **4.2 ALTERNATIVE LOCATIONS FOR THE PROPOSED PROJECT**

The alternative location option would consider construction of an additional Law School facility at a different location on the UHM campus. An alternative location other than the existing Law School site would require development on open space or areas designated for other uses. Alternative locations are not currently allowed for Law School expansion according to the LRDP. Existing space on the Mānoa campus is very limited and open space are restricted for other campus needs. Law students and faculty would have to travel to classes and programs at different locations on campus, resulting in loss of time, synergy, and operational inefficiency. Collaborations among students and faculty would also be lessened. The Law Library is a critical component of the law program, thus, locating additional facility at a different location would degrade students and faculty ability to easily access these critical resources. The existing Law School is located on Dole St., which is easily accessed from University Ave. and King St., from outside the campus. Locating additional Law School facility at a different location on the UHM campus will not provide convenient access to the Law School outreach programs to the community.

This alternative is likely to result in a loss of program quality and result in a decline in reputation needed to provide competitive programs and facilities comparable to peer.

### 4.3 ALTERNATIVE DESIGN

The Planned Review Use (PRU) process of the City and County of Honolulu serves as a guideline for new facilities on campus. Alternative designs for the Law School Master Plan have been considered based upon specified guidelines outlined in the 2008 PRU.

The original consideration for the Law School expansion, especially to the west wing, was to construct additional floor areas expanding the West Wing building footprint further ewa on the Zone 17 parking lot. This design theme was not chosen, however, because it would impact the transformer, the telecom manholes at the bridge end of Zone 17 parking lot drive, the IT fiber duct line to the Lower Campus located under the Zone 17 parking lot drive directly ewa of the West Wing, and would require the removal of large monkeypod shade trees at the ewa end of the West Wing. The existing west wing also presents a continuous, long façade without much setback from Dole Street. Expanding the west wing footprint continuously 'Ewa would create an unpleasant scale architecturally.

Among the alternative designs considered, a freestanding building within Zone 17 parking lot that connects back to the West Wing with a bridge structure described in *Section 2.0* and *3.0* has been determined to be the best use of the available space and best fit for the site constraints. The project meets the design criteria set by the 2007 LRDP.

Section 5.0

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APPLICABLE LAND USE PLANS AND POLICIES



## 5.0 APPLICABLE LAND USE PLANS AND POLICIES

An important consideration in evaluating the potential impacts of a proposed action on the environment is how it may conform or conflict with approved or proposed land use plans, policies, and controls for the affected area. The Law School Master Plan's consistency with applicable land use policies set forth in Hawai'i State Land Use Law, the Hawai'i State Plan, the 2050 Sustainable Plan, the Coastal Zone Management Program, the City and County of Honolulu's General Plan, the Primary Urban Center Development Plan, the applicable provisions of the Land Use Ordinance, Special Management Area and Plan Review Use are discussed. Further, the UH Mānoa Long Range Development Plan (LRDP) provides the planning framework for the proposed project.

### 5.1 HAWAII STATE LAND USE DISTRICT BOUNDARIES

Under the Chapter 205, HRS, all lands of the State are to be classified in one of four categories: urban, rural, agricultural, and conservation lands. The State Land Use Commission (LUC), an agency of the State Department of Business, Economic Development, and Tourism (DBEDT) is responsible for the standards and determining the boundaries of each district (Chapter 205-2(a), HRS). The LUC is also responsible to administer all requests for district reclassifications and/or amendments to district boundaries, pursuant to Chapter 205-4, HRS, and the Hawai'i Administrative Rules, Title 15, Chapter 15 as amended.

#### Discussion

The Law School is situated within the State-designated Urban district (*Figure 1.5*). The proposed uses within the property are consistent with urban design guidelines and permitted activities and require no district reclassification or boundary amendment.

### 5.2 HAWAII STATE PLAN

The Hawai'i State Plan establishes a statewide planning system that provides goals, objectives, and policies that detail property directions and concerns of the State of Hawai'i. Priority guidelines relating to the economy, education, and the physical environment will be discussed as they relate to the Law School Master Plan. It is the goal of the State, under the Hawai'i State Planning Act (Chapter 226, HRS), to achieve the following:

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i present and future generations.
- 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.
- Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life (Chapter 226-4, HRS).

The objectives and policies of the State Plan that are pertinent to the Law School Master Plan are discussed below.

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**Economy: General**

The objectives for planning the State's economy include increasing and diversifying employment opportunities to provide a better economic quality of life for Hawai'i's people. It is also the objective of the State to create a diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands. It is the policy of the State to:

- Promote Hawai'i as an attractive market for environmentally and socially sound investment activities that benefit Hawai'i's people.
- Seek broader outlets for new or expanded Hawai'i business investments.
- Expand existing markets and penetrate new markets for Hawai'i's products and services (HRS, Chapter 226-6).

**Discussion**

The project will provide an impetus for future economic growth in legal education and practice. Design plans include the expansion of existing educational and community outreach facilities. The development of these facilities provides a gathering place for scholars, jurists, legal practitioners, and others in the field to share new ideas and principles as applicable to the world of legal practice.

**Socio-Cultural Advancement: Education**

It is the objective of the State to adequately provide a variety of education opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations. It is the policy of the State to:

- Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.
- Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.
- Provide appropriate educational opportunities for groups with special needs.
- Provide higher educational opportunities that enable Hawai'i's people to adapt to changing employment demands.
- Emphasize quality educational programs in Hawai'i's institutions to promote academic excellence.
- Support research programs and activities that enhance the education programs of the State (HRS, Chapter 226-21).

**Discussion**

The Law School provides opportunities to enhance personal development and educational opportunities for the legal profession. Educational programs are accessible to students who would like to further their education in a number of specializations such as business, environmental, Native Hawaiian, and Pacific-Asian laws.

Collaborative efforts with visiting faculty and scholars will continue to create new educational experiences to equip UH law students with the ability to adapt in a global market.

### 5.3 HAWAII STATE FUNCTIONAL PLANS

The State Functional Plans implement the Goals, Objectives, Policies and Priority Guidelines of the Hawai'i State Plan. The Functional Plans provide the connection between State programs and State policy. Twelve functional plans have been adopted by the State Legislature, which includes the areas of Agriculture, Conservation Lands, Education, Energy, Health, Higher Education, Historic Preservation, Housing, Recreation, Tourism, Transportation and Water Resources. The Functional Plans are designed to address issues pertaining to physical resource needs and development. The functions and activities of the UH Law School are required to be in conformance with these functional plans. The proposed Law School Master Plan was not a specific implementing action within the functional plans. However, the spirit and intent of the plans as related to higher education will be respected.

### 5.4 HAWAII COASTAL ZONE MANAGEMENT PROGRAM

The Coastal Management Program (CMP) is a comprehensive state plan that establishes and enforces standards and policies to guide the development of public and private lands within the coastal areas. In the State of Hawai'i, the CMP is articulated in the State Coastal Zone Management (CZM) Law (Hawai'i Revised Statutes, Chapter 205A). The Hawai'i CZM Law charges the counties with designating and administering Special Management Areas (SMA) within the State's coastal areas. Any "development," as defined by the CZM Law, that is located within the SMA requires a SMA Use Permit.

#### Discussion

The property is situated outside of the SMA and as such does not require an additional review under State CZM and County SMA rules.

### 5.5 2050 SUSTAINABLE PLAN

The Hawai'i 2050 Sustainability Plan as a long-term strategy has as its main goals and objectives respect for culture, character, beauty, and history of the state's island communities; balance among economic, community, and environmental priorities; and an effort to meet the needs of the present without compromising the ability of future generations to meet their own needs.

The 2050 Plan delineates five goals toward a sustainable Hawai'i accompanied by strategic actions for implementation and indicators to measure success or failure. The goals and strategic actions that are pertinent to the Law School Master Plan are as follows.

**Goal One:** Living sustainably is part of our daily practice in Hawai'i.

#### *Strategic Actions:*

- *Develop a sustainability ethic.*
- *Conduct ongoing forums and cross-sector dialogue to promote collaboration and progress on achieving Hawai'i's sustainability goals.*
- *Continually monitor trends and conditions in Hawai'i's economy, society and natural systems.*

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**Goal Two:** Our Diversified and globally competitive economy enables us to meaningfully live, work, and play in Hawai'i.

*Strategic Actions:*

- *Develop a more diverse and resilient economy.*
- *Increase the competitiveness of Hawai'i's workforce.*

**Goal Three:** Our natural resources are responsibly and respectfully used, replenished, and preserved for future generations.

*Strategic Actions:*

- *Reduce reliance of fossil (carbon-based) fuels.*
- *Conserve water and ensure adequate water supply.*
- *Increase recycling, reuse and waste reduction strategies.*
- *Provide greater protection for air, and land-, fresh water- and ocean-based habitats.*
- *Research and strengthen management initiatives to respond to rising sea levels, coastal hazards, erosion and other natural hazards.*
- *Develop a comprehensive environmental mapping and measurements system to evaluate the overall health and status of Hawai'i's natural ecosystems.*

**Goal Four:** Our community is strong, healthy, vibrant and nurturing, providing safety nets for those in need.

*Strategic Actions:*

- *Strengthen public education.*

**Goal Five:** Our Kanaka Maoli and island cultures and values are thriving and perpetuated.

*Strategic Actions:*

- *Honor Kanaka Maoli culture and heritage.*

### Discussion

The UH Law School is committed to perpetuating Hawai'i's culture and environment. This is represented through focus on the values exemplified by former Chief Justice William S. Richardson, the Law School mission statement, and the certificate offerings in both environmental law and Native Hawaiian law. The Law School Master Plan will help strengthen legal education and practice in Hawai'i and enhance community outreach programs.

The project design of the Law School will incorporate green building design using water saving features and energy saving features such as photovoltaic panels and a green roof. The project also integrates Hawaiian culture through the use of native plants and landscaping elements that are representative of the natural and cultural landscape of the area. Themes and visions of the LRDP such as a globally connected Hawaiian place of learning, leadership, and service are also key components that are integrated in the planning and design of the Law School Master Plan.

## **5.6 CITY AND COUNTY OF HONOLULU GENERAL PLAN**

Adopted by resolution in 1977, the General Plan for the City and County of Honolulu sets forth the long-range objectives for the general welfare and prosperity of the people of O'ahu and broad policies to attain those objectives. The General Plan provides objectives and policies intended to guide and coordinate City land use planning and regulation, and budgeting for operations and

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capital improvements. Provided below are the applicable objectives and policies of the City and County of Honolulu General Plan.

The objectives and policies of the City and County of Honolulu General Plan that are pertinent to the Law School Master Plan are discussed below.

**Natural Environment**

Objective A: To protect and preserve the natural environment.

*Policy 10: Increase public awareness and appreciation of O'ahu's land, air, and water resources.*

Discussion

The new facility will allow UH Law School to continue its commitment and service in the development of programs pertaining to Native Hawaiian and environmental law through the partnerships with community organizations, as well as local and federal governmental agencies. The Ka Huli Hu Environmental Programs include clinics that connect law students with rural and underserved communities to provide legal services on pressing environmental and native rights issues.

**Physical Development and Urban Design**

Objective E: To create and maintain attractive, meaningful, and stimulating environments throughout O'ahu.

*Policy 5: Require new developments in stable, established communities and rural areas to be compatible with the existing communities and areas.*

Discussion

The design of the improvements at the Law School will maintain the character and style of the existing buildings in the area. For example, the extensions to the East and West Wing buildings will be limited to two-stories tall. Design guidelines will strive to seek harmony among elements of the built and natural environments of the Mānoa Campus through design, detail, and selection of color and materials used in creating appropriate balance and scale of the island's facilities.

**Health and Education**

Objective B: To provide a wide range of educational opportunities for the people of O'ahu.

*Policy 1: Support education programs that encourage the development of employable skills*

*Policy 2: Encourage the provision of informal educational programs for people of all groups.*

*Policy 5: Facilitate the appropriate location of learning institutions from the preschool through the university levels.*

Objective C: To make Honolulu the center of higher education in the Pacific.

*Policy 1: Encourage continuing improvement in the quality of higher education in Hawai'i.*

*Policy 2: Encourage the development of diverse opportunities in higher education.*

*Policy 3: Encourage research institutions to establish branches on O'ahu.*

Discussion

As previously stated, existing and future educational programs will continue the commitment of the Law School to a high standard of academic excellence within Hawai'i the Pacific. Programs offered at the Law School will provide expanded knowledge and expert capabilities relative to the legal profession. Planned programmatic development of outreach and educational programs will enhance the Law School's role as a leading law institution across the Pacific.

**5.7 CITY AND COUNTY OF HONOLULU PRIMARY URBAN CENTER  
DEVELOPMENT PLAN**

The City and County of Honolulu Primary Urban Center (PUC) includes the communities from Wai'alaie-Kahala to Pearl City. It is the most populated part of the State of Hawai'i and is O'ahu's largest employment center. In keeping with the policies of the general plan, the PUC is planned to efficiently accommodate more intensive commercial, governmental, residential and recreational functions in a manner that safeguards and adds to the existing amenities of the city's urban environment.

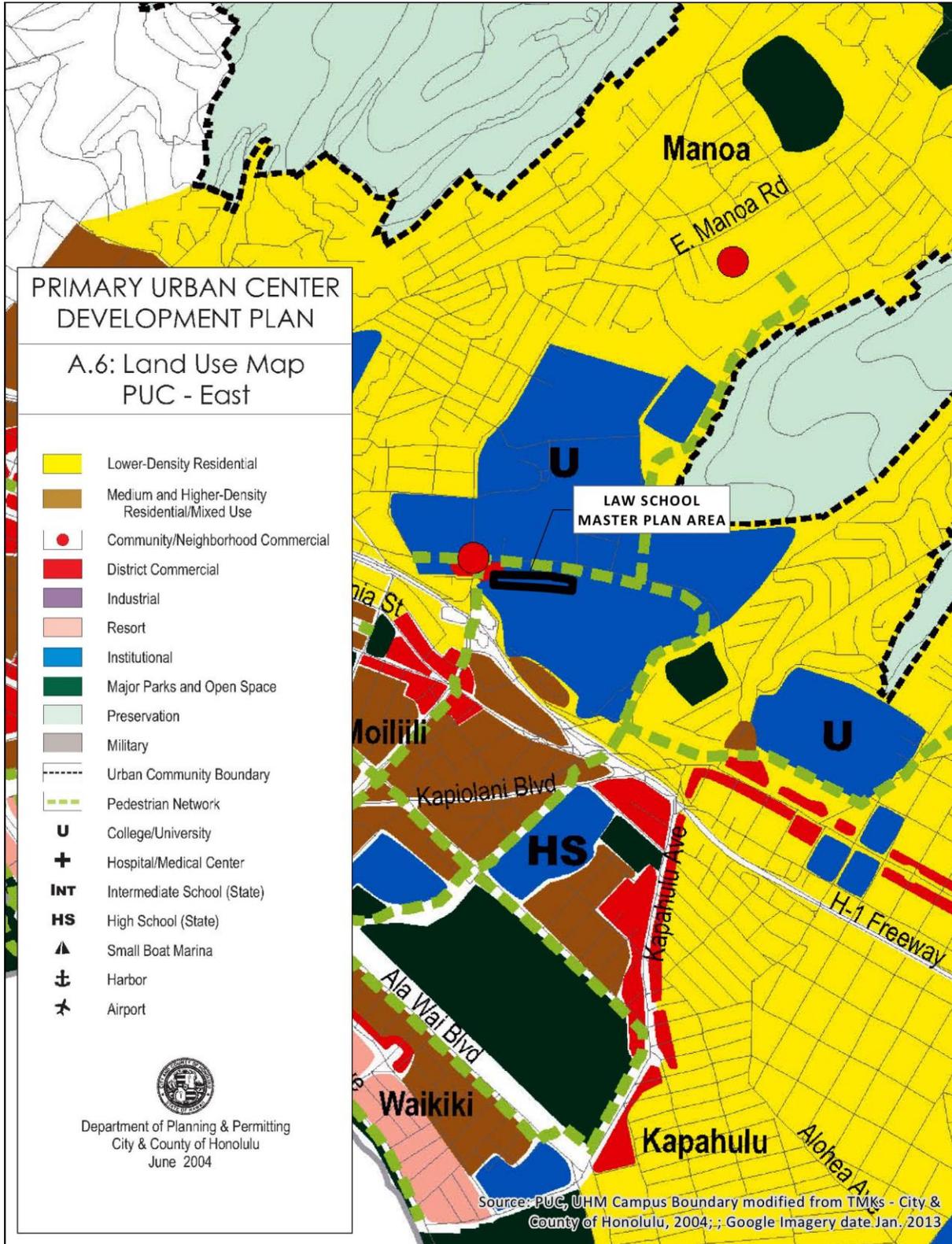
The Development Plan for the PUC describes the desired urban character and the significant natural, scenic, and cultural resources. It includes general guiding principles for the PUC and area specific guiding principles for campuses that detail appropriate land uses. The Law School Master Plan is located in the PUC (*Figure 5.1*). The applicable guiding principles are listed below.

- 1) Provide usable open space. Zoning requirements and bonus provisions for open space associated with larger office buildings should specify design guidelines for usable plazas, parks, and arcades. Key elements of open space are enclosure, shade, seating, and location at street level.
- 2) The PUC Development Plan also identifies UHM as institutional use.

Discussion

All campuses located in the PUC, such as UHM, contribute to the urban open space network. Visible landscaped grounds at UHM demonstrate the use of design guidelines that provide key elements of usable open space. The proposed Law School Master Plan will continue to honor the value of usable open space through its landscape improvements in the pedestrian plaza and primary walkway along Dole Street. The Master plan is also consistent with the PUC's designated use for the area as institutional.

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 LAW SCHOOL MASTER PLAN  
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**Figure 5.1 Primary Urban Center Development Map, Department of Planning and Permitting City and County of Honolulu, June 2004.**

## 5.8 CITY AND COUNTY OF HONOLULU LAND USE ORDINANCE GUIDELINES

The purpose of the County Land Use Ordinance (LUO) is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the O'ahu General Plan and Development Plans. The LUO is intended to provide reasonable development and design standards. These standards are applicable to the location, height, bulk and size of structures, yard areas, off-street parking facilities, and open spaces, and the use of structures and land for agriculture, industry, business, residences, or other purposes (Revised Ordinance for the City and County of Honolulu, Chapter 21).

### Discussion

The Law School is located on the UHM Campus, which is zoned as Residential District (R-5 and R-7.5) (*Figure 1.3*). Pursuant to the City's Land Use Ordinance, the use of these zoning districts for University facilities is permitted provided a Plan Review Use (PRU) has been approved by the City Council.

In 2009, Resolution 09-341 was passed by City Council allowing implementation of the 2007 UHM LRDP, which includes the Law School Expansion project.

## 5.9 PLAN REVIEW USE

The purpose of the Plan Review Use (PRU) is to establish a review and approval mechanism for uses of a permanent and institutional nature which, because of characteristics fundamental to the nature of the use, provide essential community services but which could also have a major adverse impact on surrounding land uses.

The intent is that the design and siting of structures and landscaping, screening, and buffering for these uses can be master planned so as to minimize any objectionable aspects of the use or the potential incompatibility with other uses permitted in the zoning district.

The general provisions for a PRU are that a master plan, spanning at least five years, shall be submitted and shall be reviewed and commented upon by all applicable city, state and federal planning and development agencies. The proposed master plan shall encompass the entirety of all lots for which the PRU is applied. The master plan may consist of both existing and future development; future development in the plan shall indicate general height and bulk concepts, land expansion, landscaping, setbacks, and buffering of adjacent parcels.

The master plan shall be approved by City Council Resolution. Only uses and structures in the approved master plan shall be permitted on the subject lots. Density, height, and yards shall be determined by taking into consideration the surrounding land use, adopted land use policy, and applicable zoning regulations. Parking, loading, and sign requirements shall be specified in the approval of the plan.

Subsequent to City Council approval, the Director of the Department of Planning and Permitting shall approve drawings before building permits are issued, in accordance with the approved plan.

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While the director may approve minor amendments to the plan, other proposed amendments to an approved plan shall require Council approval.

Discussion

In 1989, a PRU was approved for the original LRDP for the five-year Master Plan for the expansion of the UHM Campus (City Council Resolution No.89-411, CD-2, as amended). A major modification to the Master Plan to increase the seating capacity of the Special Events Arena was adopted in 1992 (Resolution No. 92-286) to accommodate the development of the Stan Sheriff Center. A major modification to the master plan was also approved for the redevelopment of Frear Residence Hall by Resolution No. 06-255, CD-1. In 2009, Resolution 09-341 was passed by City Council allowing implementation of the 2007 UHM LRDP Update, which includes plans for expanding the Law School.

**5.10 THE UNIVERSITY OF HAWAII AT MĀNOA STRATEGIC PLAN 2011-2015**

The University of Hawaii at Mānoa Strategic Plan, 2011-2015 is responsive to focusing on achieving key strategic goals for the University. The Law School Master Plan advocates the following goals and objectives of the University of Hawaii at Mānoa's Strategic Plan:

- Goal 1: A Transformative Teaching and Learning Environment
  - Objective 3: Increase student success.
  - Objective 4: Promote a Hawaiian Place of Learning
- Goal 2: A Global, Leading Research University.
  - Objective 1: Promote faculty and student research and scholarship.
  - Objective 3: Improve research infrastructure

Discussion

The Law School Master Plan promotes the goals of the University of Hawaii at Mānoa Strategic Plan by providing resources to carry out its educational programs, research, and training opportunities. The Master Plan will support increased student success through infrastructure improvements that will transform the existing Law School into a place more conducive to learning, research, and community outreach. The school's Ka Huli Ao Center for Excellence in Native Hawaiian Law, one of the leading programs in law, culture, and justice for Native Hawaiians and other Pacific and Indigenous peoples, will also continue to fulfill the University's goal of promoting a Hawaiian Place of Learning.

**5.11 LONG RANGE DEVELOPMENT PLAN (LRDP), UNIVERSITY OF HAWAII AT MĀNOA 2007 UPDATE**

The 2007 Update to the LRDP for the University of Hawaii at Mānoa is based on planning principles established in the 1987 UHM LRDP. Its purpose is to update the Plan to reflect current and upcoming educational priorities by planning for future buildings and projects in the next 5-10 years. The Update also addresses current space and activity needs on campus while incorporating several new themes and visions developed through collaboration with administration and constituent bodies associated with UHM.

The Law School Master Plan is considered to be one of the capital improvement priorities of the University as it is included in the updated LRDP. This project maximizes the existing space by

building additions or extensions for enhanced learning and working environments for Law faculty and students. The Law School Master Plan advocates the following themes and visions of the UH LRDP:

### 5.11.1 Major Themes of the LRDP Update

1. Globally Connected Hawaiian Place of Learning, Leadership and Service  
*This theme envisions the campus as a physically appropriate Hawaiian place as it functions as a global center of learning, leadership and service.*

#### Discussion

The Law School Master Plan will serve the purposes of addressing the space needs of the growing enrollment and implementing the long-term vision of the School. The improvements to the Law School will enhance the Hawaiian identity of the campus through selected landscaping elements that promote a cultural and natural landscape while integrating with the surrounding built environment. In addition, the project will align with traditional Hawaiian values of *mālama ʻāina* through proper planning techniques such as water-saving landscaping practices and the installation of rooftop photovoltaic panels. Renovation of the existing planters with new native plantings will create a welcoming and pleasant outdoor experience, making the pedestrian plaza an inviting place to work and study.

2. Livable Urban Campus  
*This theme envisions a lifestyle for faculty, students, researchers, staff, and visitors which is available in urban communities, which attract young, intellectually, and physically active students and experienced faculty and research members who are seeking a good quality of life.*

#### Discussion

The Law School Master Plan will add to the urban campus lifestyle by supporting themes of a live, learn, work, and play environment described in the LRDP. The renovated Law School buildings will better integrate and distribute its functions, providing pleasant meeting/learning/working spaces, courtyards, and café for students, faculty and visitors. This type of project design available in an urban community will attract students and faculty who desire a good quality of life. The proposed CLOC will also provide better services to visitors and communities.

3. Outdoor Spaces for Living and Learning  
*This theme envisions the spaces between buildings as either “outdoor rooms” functioning in concert with indoor spaces as venues for education, social gathering, recreation, contemplation, unprogrammed uses, or as outdoor corridors.*

#### Discussion

The Law School Master Plan will promote functional use of an existing open space. The proposed design elements include an indoor-outdoor café and landscape improvements to the pedestrian plaza. Together, the improvements to the Law School will provide improved spaces for outdoor meetings, study, and gathering.

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4. UHM – Leader in Environmental Sustainability  
*This theme envisions the campus as a laboratory, model, and institutional leader for sustainable practices.*

Discussion

Sustainable design and energy efficiency are incorporated as a supporting theme for the design of the Law School Master Plan. The project is designed with a fully integrated approach as it attempts to meet the LEED standards, and other aspects of sustainability. Energy and water saving features, and perhaps the incorporation of renewable energy technologies are a few aspects of the sustainable design planned for the project. Additionally, green roofs and photovoltaics are proposed for the roof/penthouse of the building. The project is expected to be designed to achieve LEED Silver certification.

**5.11.2 LRDP Plan Book C: Makai Campus**

Plan Book C, Makai Campus, is one of the design elements specific to an area of the Mānoa Campus contained in the UH LRDP. The Makai Campus site contains the existing Law School where the Law School Master Plan is proposed (*Figure 5.2*). The UH LRDP's plans for the Makai Campus include elements of the Law School Master Plan as an educational priority and future project. Design criteria for the Law School expansion are discussed below.

1. The bunker-like quality of the existing facilities may be modified to appear to be more open and accessible.

Discussion

The Law School Master Plan includes selective interior and exterior renovations to both the East Wing and West Wing buildings and the pedestrian plaza in between, creating more continuity and an aesthetic appeal between buildings.

2. The existing Library structure was originally built to accommodate a second level. It is anticipated that this may allow for a functioning connection at the second level to connect the two sides of the existing complex.

Discussion

The proposed project includes expanding the existing Library with the addition of a second floor and a connector bridge between the Library and the West Wing.

3. The courtyard between both existing buildings may be modified but should be retained.

Discussion

The project will retain the existing pedestrian plaza between both Law School buildings, while improving signage and landscaping features.

4. The complex should be expanded with its location at a gateway location reflected in design. The heavy pedestrian traffic between the quarry parking structure and Dole Street

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must be fully accommodated. The existing large canopy trees should be retained as much as possible.

Discussion

The Law School complex will be expanded at its current location. The exterior improvements will enhance its location as the gateway to the Lower Campus. A second floor will be added to the East Wing. A new CLOC building will be added to the west of the West Wing with a connector bridge. The public entry facing the Zone 17 parking lot will be improved and modernized to give a new “face” to the Law School. A dignified, secure, attractive, and welcoming entry, drop-off, and reception area will be created. Landscape improvements, which include large monkeypod trees planted along Dole Street will help mark this as primary entry to Lower Campus. The Master Plan also improves the overall pedestrian experience through the utilization of plants that will fit with the existing landscape and renovations to the existing pedestrian plaza space.

5. The complex should be coordinated with any development on the upper deck of the parking structure.

Discussion

The bridge to the Lower Campus parking structure and its circulation pattern will remain generally the same.

6. The expansion of the complex should create a significant and functional entrance for Law School students and faculty that includes space for trees.

Discussion

The public entry facing the Zone 17 parking lot will be improved and modernized to give a new “face” to the Law School. A dignified, secure, attractive, and welcoming entry, drop-off, and reception area will be created. Existing trees located to the west of the West Wing will remain in place. Additional landscape features and trees will be provided.

7. The existing mature monkeypod trees along Dole Street and the open ground space should be retained.

Discussion

Existing monkeypod trees within the Law School complex will be retained. Additional monkeypod trees will also be planted.

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LAW SCHOOL MASTER PLAN  
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Figure 5.2 UHM 2007 LRDP Update, Lower Campus Master Plan

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Section 6.0

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FINDINGS SUPPORTING ANTICIPATED  
DETERMINATION



## 6.0 FINDINGS SUPPORTING ANTICIPATED DETERMINATION

### 6.1 ANTICIPATED DETERMINATION

After reviewing the significance criteria outlined in Chapter 343, Hawai'i Revised Statutes (HRS), and Section 11-200-12, State Administrative Rules, Contents of Environmental Assessment, the proposed action has been determined to not result in significant adverse effects on the natural and human environment. A Finding of No Significant Impact (FONSI) is anticipated for this project.

### 6.2 REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The potential impacts of the planned development of the Law School Master Plan have been fully examined and discussed in this Draft Environmental Assessment. As stated earlier, there are no significant environmental impacts expected to result from the proposed action. This determination is based on the assessments of criterion (1) to (13), as discussed below.

(1) *Involve an irrevocable loss or destruction of any natural or cultural resources.*

As detailed in *Section 3.0* of this report, the project does not involve any known permanent loss or destruction of existing natural or cultural resources. Although there is a selection of trees that will need to be removed and relocated, coordination between the University Landscape Architect and the applicant will be ongoing to determine where these trees can be relocated.

There are no known surface historic resources within or near the project area. Subsurface investigation will be performed to determine if any subsurface historic property is present within the project area.

In general, if any cultural, historic or archaeological resources are encountered during pre-planning and construction related activities, the State Department of Land and Natural Resources (DLNR), Historic Preservation Division (SHPD) and other parties of interest will be notified and the proper handling of these resources will be conducted in strict compliance with the applicable historic preservation and burial laws.

(2) *Curtail the range of beneficial uses of the environment.*

The Law School Master Plan is part of greater efforts at UHM to improve the facilities and overall image of the University system's largest and oldest campus. The proposed activities will not preclude the range of beneficial uses of the environment. Implementation of the Law School Master Plan will help to optimize the current uses of the site by enhancing outreach programs and educational experiences at the University. Upon completion of this project, the site is anticipated to continue to be compatible with the improvements in the surrounding environment and character within the immediate area of the campus and in Mānoa in general.

(3) *Conflict 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.*

**University of Hawai'i at Mānoa  
Law School Master Plan**

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**Draft Environmental Assessment AFONSI**

The proposed activities do not conflict 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.

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

Short-term economic benefits anticipated during construction and landscaping will include direct, indirect, and induced employment opportunities and multiplier effects –but not at a level that would generate significant expansion. Additionally, the project will improve social welfare by providing a space for knowledge creation in the field of law and legal services opportunities for the community.

(5) *Substantially affects public health.*

The project is not expected to substantially affect public health. However, there will be temporary short-term impacts to air quality emanating from possible dust emissions and temporary degradation of the acoustic environment in the immediate vicinity resulting from the construction activities. Since the project is expanding and building upon existing Law School infrastructure, arrangements will be made to minimize effects to on-going classes in the area. Construction related impacts of noise, dust, and emissions will be mitigated by compliance with the State Department of Health's Administrative Rules regulating these activities.

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

The approval will not have substantial secondary impacts, such as population changes or effects on public facilities. Overall impacts to public facilities are minor and insignificant as construction activities have occurred on campus for many years, and are viewed as a part of existing conditions and the organic evolution of the campus.

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

The proposed Master Plan will not involve a substantial degradation of environmental quality. The primary improvements to the project area include expanding the East Wing to add a second floor structure; creating a two-story Community Legal Outreach Center on a portion of the Zone 17 parking lot; creating connector bridges between buildings; constructing a café at the East Wing; and remodeling planters and landscaping. These improvements would not create impacts to known natural or cultural environmental resources.

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

The Law School Master Plan is a small part of the overall improvements adopted in the LRDP for the Mānoa Campus. However, the project is not a precursor for other future actions.

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

The current area of the existing Law School buildings does not contain any identified rare, threatened, or endangered species of terrestrial fauna or avifauna. However, according to FWS

endangered Hawaiian hoary bat have been documented within the project vicinity. Protected White fairy Terns may also occur in the project area. Best practices will be implemented to minimize impacts to these species.

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

General short-term impacts associated with construction of the facility have been identified in this EA. Mitigation measures outlined in the EA will be applied during the on-going construction at the Law School. No detrimental long-term impacts to air, water, or acoustic quality are anticipated with the proposed improvement. The approval will not detrimentally affect air or water quality or ambient noise levels.

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

The UHM Law School lies within Zone X (outside 500-year flood zone) and lies outside of the designated tsunami zone. Proposed improvements to the existing Law School buildings will comply with necessary design requirements and building codes.

(12) *Substantially affects scenic vistas and view-planes identified in county or state plans or studies.*

The proposed project entails the expansion of the existing East Wing building, construction of a two-story Community Legal Outreach Center, and connector bridges. Mountain view-planes from Dole Street looking makai into the entrance of the Law School are currently limited. The visual access to the mountains from roadways and within the campus will not be impacted by the project.

(13) *Require substantial energy consumption.*

The additional 60,000 sf of building area would increase power consumption needs of the UHM Campus and the Mānoa area. Energy saving features will be incorporated such as the use of photovoltaic panels, energy efficient lighting, and systems for air-conditioning, and water heating to minimize actual consumption from fossil fuel based sources. The project will use the latest in green building design and is expected to achieve a minimum level of LEED Silver.

### **6.3 SUMMARY**

Based on the above findings, the improvements proposed in the Law School Master Plan are not anticipated to have significant socio-economic or environmental impacts and a Finding of No Significant Impact is anticipated. The Environmental Assessment recommends mitigation measures to alleviate impacts when identified.

The Law School Master Plan is consistent with the Hawai'i State Land Use District Boundaries; the Hawai'i State Plan and Functional Plans; the Hawai'i Coastal Zone Management Plan, the City's General Plan and Development Plan; the City's Zoning Ordinance; the University's Strategic Plan and Long Range Development Plan.

**University of Hawai'i at Mānoa  
Law School Master Plan**

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The proposed Law School Master Plan will provide improvements that will have beneficial effects on the UHM Campus and the surrounding neighborhoods. The proposals would improve the quality of building design, create a more cohesive and inviting “sense of place” at the Law School, and improve the overall student, faculty, staff, and visitor experience.

Section 7.0

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LIST OF REFERENCES



## 7.0 LIST OF REFERENCES

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Section 8.0

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LIST OF AGENCIES, ORGANIZATIONS AND  
INDIVIDUALS RECEIVING COPIES OF THE EA



University of Hawai'i at Mānoa  
Law School Master Plan

Draft Environmental Assessment AFONSI

## 8.0 LIST OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS RECEIVING COPIES OF THE EA

| Respondents and Distribution  | Pre-Consultation | Pre-Consultation Comments Received | Received Draft EA | Comments Received | Receiving Final EA/<br>FONSI |
|---|------------------|------------------------------------|-------------------|-------------------|------------------------------|
| <b>Federal Agencies</b>   |                  |                                    |                   |                   |                              |
| U.S. Fish and Wildlife Service  | X                | X                                  | X                 |                   |                              |
| <b>State of Hawai'i Agencies</b>  |                  |                                    |                   |                   |                              |
| Department of Accounting and General Services (DAGS)                                  | X                | X                                  | X                 |                   |                              |
| Department of Agriculture (DOA)   | X                |                                    | X                 |                   |                              |
| Department of Business, Economic Development and Tourism (DBEDT)                      | X                |                                    | X                 |                   |                              |
| Department of Business, Economic Development and Tourism (DBEDT), Energy Division     | X                |                                    | X                 |                   |                              |
| Department of Business, Economic Development & Tourism (DBEDT), Office of Planning    | X                | X                                  | X                 |                   |                              |
| Department of Defense (DOD)   | X                |                                    | X                 |                   |                              |
| Department of Education (DOE)   | X                |                                    | X                 |                   |                              |
| Department of Hawaiian Homelands (DHHL)   | X                |                                    | X                 |                   |                              |
| Department of Health (DOH)  | X                | X                                  | X                 |                   |                              |
| Department of Human Services (DHS)  | X                | X                                  | X                 |                   |                              |
| Department of Labor and Industrial Relations (DLIR)                                   | X                | X                                  | X                 |                   |                              |
| Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife    | X                | X                                  | X                 |                   |                              |
| Department of Land and Natural Resources (DLNR), Land Division                        | X                | X                                  | X                 |                   |                              |
| Department of Land and Natural Resources (DLNR), State Historic Preservation Division | X                |                                    | X                 |                   |                              |
| Department of Transportation (DOT)  | X                | X                                  | X                 |                   |                              |
| Hawaii Housing Finance and Development Corporation (HHFDC)                            | X                |                                    | X                 |                   |                              |
| Office of Hawaiian Affairs (OHA)  | X                | X                                  | X                 |                   |                              |
| University of Hawai'i Environmental Center  | X                |                                    | X                 |                   |                              |
| Office of Environmental Quality Control (OEQC)  | X                |                                    | X                 |                   |                              |

**University of Hawai'i at Mānoa  
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| <b>Respondents and Distribution</b>         | <b>Pre-Consultation</b> | <b>Pre-Consultation Comments Received</b> | <b>Received Draft EA</b> | <b>Comments Received</b> | <b>Receiving Final EA/FONSI</b> |
|---|-------------------------|---|--------------------------|--------------------------|---------------------------------|
| <b>City and County of Honolulu</b>          |                         |   |                          |                          |                                 |
| Board of Water Supply (BWS)                 | X                       | X   | X                        |                          |                                 |
| Department of Community Services (DCS)      | X                       | X   | X                        |                          |                                 |
| Department of Design and Construction (DDC) | X                       | X   | X                        |                          |                                 |
| Department of Environmental Services (DES)  | X                       | X   | X                        |                          |                                 |
| Department of Facility Maintenance (DFM)    | X                       |   | X                        |                          |                                 |
| Department of Planning and Permitting (DPP) | X                       | X   | X                        |                          |                                 |
| Department of Parks and Recreation (DPR)    | X                       | X   |                          |                          |                                 |
| Department of Transportation Services (DTS) | X                       | X   | X                        |                          |                                 |
| Honolulu Fire Department (HDF)              | X                       | X   | X                        |                          |                                 |
| Honolulu Police Department (HPD)            | X                       | X   | X                        |                          |                                 |
| <b>Community Groups and Associations</b>    |                         |   |                          |                          |                                 |
| Neighborhood Board No. 7, Mānoa             | X                       |   | X                        |                          |                                 |
| Mālama O Mānoa                              | X                       |   | X                        |                          |                                 |

## APPENDICES

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Appendix A

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PRELIMINARY ENGINEERING REPORT



## PRELIMINARY ENGINEERING REPORT

FOR

### William S. Richardson School of Law Community Legal Outreach Center (CLOC) at the University of Hawai'i at Manoa

Honolulu, Oahu, Hawai'i  
TMK: 2-8-029:001

December 3, 2014

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## I. INTRODUCTION

The purpose of this report is to provide an overview of the preliminary engineering design for the University of Hawai'i William S. Richardson School of Law's proposed project, the Community Legal Outreach Center (CLOC). The CLOC project will consist of a new office building extension or standalone building for the Law School, and will provide much needed classroom, office, and meeting spaces for the Law School and the clinics that they run. The project is located at the University of Hawai'i Campus in Manoa, within the City and County of Honolulu, on the island of Oahu. The project is being developed by the University of Hawai'i. This report evaluates the existing site conditions and defines requirements for roadway, water, wastewater, and drainage utilities along with other site improvements.

## II. PROPOSED PROJECT

### A. Location

The Community Legal Outreach Center (CLOC) project site is on the campus of the William S. Richardson School of Law at the University of Hawai'i at Manoa (TMK 2-8-29: 001, University of Hawai'i, Lower Campus, State of Hawai'i). The entire Law School Campus comprises approximately 3.7 acres, encompassing the "main" classrooms/administration building (West Wing) and the Law Library (East Wing), the Zone 17 Parking Lot, and the campus pedestrian plaza between the East and West Wings. The Law School Campus is bounded by Dole Street (city) on the mauka side, Lower Campus Road (private) on the Ewa side, a nearly vertical drop of the quarry rock wall face and a multi-story parking structure on the makai side and Johnson Hall, a three-story student dormitory building on the Diamond Head side.

The CLOC project will be located at the Ewa end of the West Wing.

Refer to **Figures 1 and 2** for Vicinity and Location Map respectively.

### B. Project Description

The Community Legal Outreach Center is proposed to be located within the Zone 17 Parking Lot. The project will provide additional usable office and educational spaces for the Law School through a new building as well as minor tenant improvements in the existing building. Occupancy of the CLOC building would be estimated to be around 100-150 people, including faculty, staff, students, and community members, and consist of approximately 7,450 SF of office space over two stories. The new building will also be connected to the West Wing by a bridge structure. Exterior site improvements are expected to support the new building and tenant improvement.

The CLOC project will provide critically needed space for the Law School's community outreach programs and clinical programs such as the Elder Law Program, Hawai'i Innocence Program, Veterans Assistance Clinic, Small Business Clinic, Native Hawai'ian Rights Clinic, and Immigration Law Clinic.

Refer to **Figure 3** for a Preliminary Site Plan

## III. EXISTING CONDITIONS

### A. Topography

The entire existing Law School Campus site is relatively flat and slopes gently from mauka to makai, with Dole Street at the highest elevation along the project's entire frontage. Slopes on the site range from 2% to 5%.

The area in the Zone 17 Parking Lot, ewa of the West Wing, slopes from mauka to makai, with an approximate 5-8 foot difference in elevation from Dole Street to the makai side of the site. Elevations in the Zone 17 Parking Lot range from 60 feet to 55 feet above mean sea level (MSL) with an average slope of 2%.

An existing steep slope consisting of a stabilized rock face is located along the entire makai edge of the site and is part of an abandoned quarry.

### B. Soil Conditions and Geotechnical Exploration

Based upon site soils information from available GIS (Geographical Information Systems) data, soils consist of Makiki Sandy Clay Loam (MIA), with 0%-3% slopes around the Law School West Wing, which are moderately permeable and not significantly compacted. The rock wall adjacent to the parking structure contains soil classified as Quarry (QU), and this wall was stabilized under Phase 1B of the Lower Campus Quarry Wall Stabilization Project in 2008. This entire site is underlain by fracture weathered basalt and is considered permeable.

Refer to **Figure 4**, Soils Map

See the geotechnical report performed for the CLOC project by Hirata and Associates for additional information.

### C. Existing Infrastructure:

#### 1. Site Area

Existing Site Area: Approximately 2.50 acres

See **Figure 6A** for an Existing Site and Utility Plan.

#### 2. Roads

- Dole Street (City) to the north: 2 lanes in each direction going east/west.
- Lower Campus Road (Private) to the west: 2 lanes in each direction going north/south.

Vehicular access to the site consists of an entry into the Zone 17 Parking Lot through the driveways on Lower Campus Road and Dole Street, or via a vehicular bridge linking the Zone 17 Parking Lot and the adjacent Parking Structure makai of the existing Law School Campus. Currently, vehicular access via the vehicular bridge is limited to exiting the structure only, and is only allowed for special events or sporting events, through an official agreement between UH and the City. The only exit out of the Zone 17 Parking lot is through the driveway on Dole Street near the corner of the existing Law School West Wing.

#### 3. Parking

Existing parking for the Law School Campus is located within the Zone 17 Parking Lot and the parking structure to the south. The Zone 17 Parking Lot holds 67 total parking stalls; two of them are ADA stalls.

The parking structure located on the makai side of the quarry wall has a capacity of approximately 3,000 cars. When there is a large sporting event, the gate between the parking

deck and Zone 17 is opened to allow vehicular egress across the bridge and through the Zone 17 lot. Left turns onto Dole St. are prohibited during this time.

#### 4. Pedestrian

Pedestrian access is provided via public (City) and private sidewalks along roadways surrounding the site. Additionally, stairs and elevators from the adjacent parking structure serve an existing pedestrian bridge/plaza area that extends from the arena to Dole Street in between the Law School West Wing and the Law Library. Site stairs and ramps are located near the existing Law School West Wing to accommodate for moderate grade changes at the site. Pedestrian access is also available from the adjacent parking structure via the vehicular bridge connecting the Zone 17 Parking Lot and the parking structure though not intended for pedestrian use.

#### 5. Fire Access

Dole Street provides fire access to the existing Law School Building. Based on drawings provided by the University, the existing building is within 150 feet of the street, which is a typical Honolulu Fire Department (HFD) access requirement. Upon initial review of the site, HFD noted that HFD vehicular fire access would be provided to the existing building via Dole Street and not from the existing parking structure on the makai side of the site. HFD also acknowledged that the existing standpipes on the top level of the parking structure deck are to service the parking deck only and are not part of the Law School Building fire-fighting plan, but also noted that these could be used to serve the makai side of the Law School Building at HFD's discretion.

The existing vehicle bridge between Zone 17 lot and parking structure does not conform to HFD standards for fire truck access as it is not considered a fire access route.

Fire hydrants are located at the northeast corner of the existing Law School West Wing on the makai side of Dole Street and at the northwest corner of the West Wing on the mauka side of Dole Street. Hydrants appear to be publicly owned by the Board of Water Supply (BWS). Privately owned and maintained fire hydrants are also located on Lower Campus Road at the ground level of the parking structure, makai of the site.

#### 6. Site Runoff and Drainage

Existing runoff from the site appears to primarily sheet flow towards the rear of the site where it is directed by an existing concrete curb to a recently installed trench drain and drain inlet near the vehicular bridge connecting the Zone 17 Parking Lot and the Parking Structure. The inlet and trench drain were installed under Phase 1B of the Lower Campus Quarry Wall Stabilization Project in 2008. Runoff is discharged from the trench drain and inlet, down a shotcrete swale constructed over the rock face leading to a rock energy dissipater at the bottom of the slope, which was also constructed as part of the 2008 slope stabilization project.

An existing mounded planter area between Dole Street and the existing Law School Building appears to capture or direct runoff away from the existing building and off to the sides near the walkway between the Law School and Law Library, and the Zone 17 Parking Lot.

- **Building Drainage:**

The existing Law School Building appears to contain downspouts located on the exterior face of the columns at the perimeter of the structure. The downspouts facing Dole Street appear to be piped out towards the street via 4-inch drain pipe under the mounded planted area between the building and the street. Downspouts appear to discharge at the base of the mounded planted area and send concentrated flow towards Dole Street. Runoff flows over the sidewalk in specific spots near the discharge points.

Downspouts facing the parking structure makai of the site appear to be collected via 8-inch drain pipe and are discharged through two outlets within the existing CRM wall at the top of the existing rock face. The remainder of runoff from the Zone 17 Lot is conveyed via surface flow and allowed to drain down the rock face, as previously described.

A sub-drain system along the mauka and makai edges of the building was also shown on record drawings, and appears to discharge similarly to the roof drains to Dole Street and to the makai rock face.

According to the Flood Insurance Rate Map (FIRM) the site currently is located within flood zone X (Beyond 500 Year Flood Plain). Refer to **Figure 5** for a Flood Zone map.

- **Drainage Calculations:**

Based on hydrologic calculations, the existing drainage runoff estimated from the anticipated CLOC site is approximately 3.42 cubic feet per second (cfs), based on a 10-year recurrence interval, 1-hour duration rainfall.

See **Table 1** for Preliminary Drainage Calculations (Existing Conditions)

#### 7. Sewer Systems

The existing Law School Building appears to be served via a 6-inch lateral located on the mauka face of the building, which discharges to an existing city sewer manhole located on UH property within the planting area along the sidewalk on Dole Street. A 6-inch city sewer line runs west to another city manhole located in the Zone 17 Parking Lot, and an 8-inch city sewer line runs north from this manhole to connect to an existing deep drop structure on an existing 60-inch City reinforced concrete pipe (RCP) sewer line, flowing east to west in Dole Street. Per discussions with the City and County of Honolulu and based upon the Draft UH Sewer Master Plan by R.M. Towill, sewer capacity in the Dole Street system does not appear to be an issue.

Additionally, an existing sewer force main, privately owned, is located on the far west side of the project site along the western edge of the Zone 17 Parking Lot. This force main is a major line conveying flows from the Lower Campus. The main should be protected and maintained in place.

- **Wastewater Odor:**

During conversations with UH FMO and Law School staff, it was noted that odors are often present within the Zone 17 Parking Lot, which may be coming from the City's sewer system. Odors seem to be present where the force main from the Lower Campus discharges into an existing manhole in the Zone 17 Parking Lot prior to gravity discharge into the City system. Further investigation with the Department of Environmental Services is needed to determine the source of the odor, and potential mitigation measures. If the odor is from UH's private sewage systems, measures should be taken as part of the CLOC project to address the odor.

#### 8. Water Systems

The existing Law School Building appears to be fed off of the Board of Water (BWS) Supply's 180' system within the area. Water pressures on-site range from 40 to 50 psi (30 psi during peak demand periods). Dan Furuya with UH Manoa's Facility Management Office (FMO) indicated the Law School Building/Law Library has low water pressure and the buildings have a domestic water booster pump system. The Law School Building appears to be served off of a 2-inch meter, and a 2-1/2-inch lateral from a BWS 12-inch line in Dole Street.

Additionally, a major water line connection to the BWS system is located at the northwest corner of the Zone 17 Parking Lot, and consists of a meter vault, a 2-inch x 8-inch FM meter and a

reduced pressure backflow device. Per discussion with UH FMO staff, this connection is one of the major service feeds for the Lower Campus, and the main line heads downhill within Lower Campus Drive from this location. This service should be protected and maintained in place.

• **Irrigation:**

An existing irrigation system serves the Law School Building with the existing point of connection located between the Law School Building and Law Library. The existing system is operational, per UH Facilities staff, but a new system to replace it would be desirable.

**9. Other Utilities**

Refer to the electrical, telecom, and mechanical sections of the previously prepared Architectural Design Program report for additional information on site utilities.

• **Electrical Distribution Systems:**

The campus electrical distribution system at the University consists of 12.47kV primary electrical circuits that feed the various buildings on campus via step-down pad-mounted transformer that provide service to the buildings.

The West Wing of the Law School is fed from primary circuits from electric manhole 1.03, located mauka of the West Wing along Dole Street. The primary circuits terminate at a pad-mounted transformer located between the West Wing and the Zone 17 parking lot. The transformer provides electric service to a metering/ distribution switchboard located in West Wing utility room.

• **Telecommunication Systems:**

The University's telecommunications distribution system consists of two independent systems: The first system is the original site distribution system which is utilized primarily for public utility services. The second system was installed in 1990 which now provides the majority of the fiber optic backbone for the campus.

The existing telecommunications services to the West Wing of the Law School are extended from communications manhole 1.03 and telephone manhole 1.03, located mauka of the west wing along Dole Street. The service entrance cables terminate in a cabinet located in the West Wing utility room.

The 1990 system's site infrastructure includes an existing communications ductline routed through the driveway entering the Zone 17 parking lot from Dole street terminating at 1990 manhole 200, located in the Zone 17 parking lot near the gate that separates the Zone 17 parking lot from the Zone 20 parking structure. Service to the Law School Building is provided from the 1990 system from 1990 manhole 200

In addition to providing telecommunications service to the West Wing, this ductline is the main communications trunk for the buildings on the lower campus. This ductline needs to remain in service during construction to maintain telecommunications service to the Lower Campus. UH ITS is amenable to the construction of an elevated structure over the ductline provided that service access to the manhole is maintained.

The fiber optic cables that currently provide service to the West Wing have adequate capacity to provide high speed access to the West Wing and the CLOC.

• **HVAC:**

The Law School Campus includes a single-story Law Library, a 2-story classroom/office building (West Wing), and a detached central chilled water plant. The Law Library (Phase 1) was built first in around 1981, and the classroom building was built as Phase 2 in around

1982. The detached central chilled water plant was constructed with the Phase 1 Law Library. Both buildings are air conditioned by the central chilled water plant located at the base of the (quarry) rock cliff to the south of the Law School complex. Reference drawings provided by the University indicate a 1998 project that modified the central plant to an air cooled plant from a water cooled plant.

• **Building Plumbing:**

The existing domestic plumbing system includes domestic cold water, sanitary waste, vent and storm drain systems. There is no hot water in the facility except for recently installed, stand-alone hot water heaters in the downstairs courtyard restrooms (this project has been pending completion since winter 2013 per FMO review).

• **Gas Systems:**

Gas lines appear to be located in Dole Street under or near the makai sidewalk. The gas lines are owned by Hawai'i Gas and should be protected and maintained in place.

**10. Pavements**

The Zone 17 Parking Lot consists primarily of asphalt pavement with concrete curbs creating planter islands within the lot. Curbs also are located against the planters adjacent to the existing Law School Building. Concrete ramps and sidewalks surround the existing Law School Building, and a concrete pedestrian plaza is located between the Law School Building and the Law Library.

Asphalt pavements within the Zone 17 Lot appeared distressed in multiple areas and showed signs of alligator cracking. Concrete pavements surrounding the site for pedestrian walkways appeared to be cracked and/or discolored in some areas.

**IV. PROPOSED CONDITIONS**

As previously noted, the Community Legal Outreach Center (CLOC) will provide additional usable office and educational spaces for the Law School through a new building in the Zone 17 parking lot, as well as minor tenant improvements in the existing building. The CLOC building would consist of approximately 7,450 SF of office space over two stories. The new building will also be connected to the West Wing by a bridge structure and exterior site improvements are expected to support the new building and tenant improvement. Refer to **Figure 3 and Figure 6B** for a Preliminary Site Plan

**A. Proposed Infrastructure**

**1. Disturbed Site Area**

Expected Disturbed Area = Less than 1.00 acre

See **Figure 6B** for a Proposed Site and Utility Plan.

**2. Roadways**

The project may require minor improvements to the existing driveway on Dole Street from the Zone 17 Parking Lot depending on the final configuration of CLOC. Possible improvements to the existing driveway entrance /exit on Lower Campus Road from the Zone 17 Parking Lot may also be required. Major off-site roadway improvements are not expected, but minor curb / gutter and pavement repair will be required.

Vehicular access from the Parking Structure to Dole Street via the existing vehicular bridge shall be protected and maintained in place as the driveway will continue to function as an exit route for the parking structure during special events or sporting events.

Vehicular access to the parking structure deck may be expanded to the CLOC addition users to provide additional parking that will be lost due to the construction of the new building, but special consideration will be needed to determine adequate access requirements as the bridge is too narrow to support two-way traffic.

### 3. Parking

Parking stalls will be removed within the Zone 17 Parking Lot to allow for the development of CLOC. The CLOC project could result in the potential loss of approximately 25-30 parking stalls (of 67 parking stalls). The UHM Long Range Development Plan (LRDP) anticipated much of the Zone 17 parking stalls removed as part of the Law School expansion, so the loss of stalls is acceptable. Re-configuration of parking and traffic circulation within Zone 17 is allowed.

Internal circulation of the Zone 17 lot will be revised and a new entry/drop off for the building will be constructed. The Law School has expressed a desire to create a welcoming and distinguished entry experience.

As suggested by the University, additional parking may be provided on the top deck of the adjacent parking structure.

Visitor stalls and Americans with Disability Act (ADA) stalls will be provided near the new building entrance, as there are currently none near the existing building.

### 4. Pedestrian Access

Pedestrian access will continue to be provided via public and private sidewalks surrounding the site. Concrete sidewalks and stairs may be replaced as needed. Additional ramps and stairs may be required as there is a moderate grade difference at the site.

Additionally, the plaza connecting the Parking Structure to the Law School area will continue to be used as the major pedestrian connector between Lower Campus and the Main Campus.

### 5. Fire Access

Based upon the preliminary site plan shown in **Figure 3**, fire access for CLOC will continue to be provided off of Dole Street, as in existing conditions for the existing West Wing. Existing hydrants around the site provide adequate water supplies. Sprinklers for the existing building and/or new building will be provided if required by applicable building codes and based upon CLOC's size, design, and configuration. The existing Law School Building does not have a fire sprinkler system, but may require retrofit due to the CLOC.

Further coordination with the Honolulu Fire Department (HFD) will be required as the design progresses.

Fire access and water supply system requirements for the project will be designed based upon the State Fire Code: National Fire Protection Agency (NFPA) 1, Uniform Fire Code, 2006 and all additional amendments as part of the Hawai'i Administrative Rules (HAR) Title 12, Subtitle 7, Chapter 45.2. Additional requirements are noted in the BWS Water System Standards dated 2002. At this time, based upon the above referenced standards, the following criteria will be met in terms of adequate fire access and water supplies for the proposed CLOC addition:

- Provide an adequate fire apparatus roadway for every facility or portion of a facility where any portion of said structure is located more than 150-feet from fire apparatus access as measured by an approved route around the exterior of the facility.
- Road Width = Unobstructed 20-feet.
- Road Vertical Clearance = Unobstructed 13-feet and 6-inches.
- Surface = Capable supporting 73,000 lbs and constructed with an all-weather material.
- Turning Radius = 42-foot minimum on outside front wheel. 28.4-foot minimum on inside rear wheel.
- Dead Ends = Provide appropriate turnaround (cul-de-sac or hammerhead).
- Maximum Grade = 19%
- Key Boxes = If fire access roadway is gated or locked at any time.
- Signage = Required for entire length of roadway.
- Provide an adequate fire water supply, capable of supplying the required fire flow as determined by BWS Standards. On-site, private hydrants may be required for facilities where any portion of the structure is located more than 150-feet from a water supply on a fire apparatus access road.
- Provide 2,000 gpm for 2 hours with a residual pressure of 20 psi for on-site hydrants.
- Hydrant spacing at 250-feet (on public roadways).
- Fire Department Connections (FDCs) for sprinkler systems should be placed on the address side of the building and within 50 feet of an adequate water supply / fire hydrant.

### 6. Erosion Control

Sufficient Best Management Practices for erosion control on site shall be installed and maintained during construction.

### 7. Site Grading and Drainage Systems

Grading and drainage will mimic existing conditions, as existing grades on site are generally flat with moderate slopes in some areas. Dole Street will remain at the high end of the site, while the area within the reconfigured parking lot and CLOC will drain from mauka to makai. Proposed grades will be designed to direct stormwater runoff away from buildings and structures, and grades will accommodate for required accessibility (as determined by ADA guidelines).

#### • Proposed Drainage Infrastructure

New drainage infrastructure will be installed to support the new building and reconfigured Zone 17 Parking Lot. Improvements are expected to include (and are not limited to): catch basins and drain inlets, storm drainage piping, sub drains, retaining wall drains, and new storm drain connections to private or public systems. Roof drains will be collected and conveyed via new infrastructure surrounding the building.

Additionally, per conversations with UH Facilities staff, flooding has occurred between the Law Library and Law School West Wing in the pedestrian plaza that connects the Central Campus with the Lower Campus via the upper deck of the parking structure. Drainage may be addressed here if project budget and scope allows.

#### • Drainage near Rock Wall

Special consideration will be given to the existing rock face makai of the project site and drainage infrastructure will be installed to minimize storm water impacts to the existing rock face's stabilization. Any construction near or adjacent to this rock face should be limited and improvements should be carefully designed by a structural and geotechnical engineer.

- **Low Impact Development Potential Improvements**

The disturbed area of the site is expected to less than 1 acre and new Low Impact Development (LID), Best Management Practices (BMPs), from the City and County of Honolulu, Department of Planning and Permitting (DPP) will not be required.

However, LID improvements and BMPs will be installed where practical and feasible, based upon UH's desire to support sustainability, improve stormwater quality, and manage stormwater quantity. The proposed CLOC will reduce impervious surfaces on the site, as asphalt parking stalls will be replaced with the building and surrounding landscaping area.

Bio-retention and infiltration of storm water runoff may be utilized for LID, if technically feasible on the site. Based upon preliminary soils information, infiltration may be suitable for the site. However, because the site is close to an existing rock face and because the subgrade within the Zone 17 Parking Lot area consists of significant rock formations, infiltration in close proximity to the stabilized rock face will likely be infeasible due to the difficulty in breaking apart the rock and protecting the existing slope, per UH Facilities staff. In this case, bio-filtration and detention of storm water runoff only may be applicable. This could be accomplished through vegetated swales or planter boxes.

Additional areas to install LID BMP's may also be available at the ground level of the adjacent parking lot to the south, in areas identified on a Draft Final LID Opportunities Plan by R.M. Towill and Arup for the entire UH Manoa campus. Additionally, rainwater catchment and reuse for irrigation purposes were proposed by UH staff as a potential LID opportunities, as well as an educational opportunity for UH students to understand the importance and practicality of rainwater harvesting.

See **Table 2** for Preliminary Drainage Calculations (Proposed Conditions)

## 8. Sewer Systems

Sewer service for the site is not expected to be significantly impacted. The expected increase in sewer flow is minimal for the size and type of building addition proposed. A sewer capacity availability request will still be required at the appropriate time.

Existing sewer systems, including the 6-inch and 8-inch City lines located mauka of the existing Law School building should be sufficient to serve the proposed project. A new lateral connection for the building addition, directly to the City-owned line in the Zone 17 Parking Lot, will be required.

Proposed work shall protect and maintain in place the existing sewer lines on-site to the maximum extent possible, including the lateral for the existing Law School West Wing and the existing force main located in Lower Campus Drive and portions of the Zone 17 Parking Lot.

See **Table 3** for Preliminary Wastewater Calculations (Proposed Conditions)

- **Wastewater Odor**

Sewer odors have been noted to be of concern for UH staff, and appropriate measures shall be taken to reduce odors within the private sewer system. The construction of the CLOC addition may allow for some sewer services to be relocated and/or upgraded reducing odors.

## 9. Water Systems

Water service for the new building will be provided through either the existing Law School building's plumbing or via a new lateral connection to the existing 12-inch BWS main in Dole Street. Domestic water demands, determined by the plumbing engineer, will dictate the adequacy of the existing building's system or if a new connection will be required. As previously mentioned, water pressures near the site have been measured around 40-50 psi (30 psi during peak demand periods), which may be insufficient for the building addition. A domestic water booster pump system may be required.

Any new connections to the Board of Water Supply system will require a new meter. A backflow assembly on a new domestic service lateral is not expected to be required for CLOC.

Irrigation will be required for the project. Due to low pressures, a booster pump may be required for the irrigation system. Per conversation with UH Facilities staff, a new irrigation system is desired due to the condition of the existing system.

See **Table 4** for Preliminary Water Demand Calculations (Proposed Conditions)

## 10. Other Utilities

Refer to the electrical, telecom, and mechanical sections of the previously prepared Architectural Design Program report for additional information on proposed site utilities.

- **Electrical and Telecommunication Distribution Systems:**

CLOC may be provided electrical service through extending the circuits through new ductlines from an existing electric manhole located along Dole Street or through new ductlines from an existing electric manhole located in the adjacent music building parking lot. The manhole along Dole Street would involve trenching within City and County of Honolulu right of way. New manholes and vaults would be required in either scenario.

- **Telecommunication Systems:**

Telecommunications services for the CLOC will need to be extended from both the old system and the 1990 system. Underground ducts could be extended from the existing 1990 manhole 200 in the Zone 17 parking lot to provide connectivity from the 1990 system to the CLOC. New ducts from the old system will need to be extended from either existing manhole groups along Dole Street or in the adjacent music building parking lot.

- **Utility Relocations:**

Existing telecommunication and electrical utilities may require relocation towards the southwest corner of the existing Law Building where several manholes and transformers were located at the exterior of the building and within the Zone 17 Parking Lot, depending on the final configuration of the new building.

- **HVAC:**

The preliminary cooling load calculations for the West Wing, Law Library, and CLOC Addition resulted in a total cooling load, with the CLOC addition, of 214 tons. The existing central chilled water plant has an estimated total capacity of 250 tons. Therefore, it appears the existing chilled water plant has adequate capacity for the CLOC addition. However, the existing chilled water plant equipment was installed in 1998 and is approximately 14 years old. The equipment is air cooled and is most likely at the end of its useful life, and the actual operational condition is unknown. Based upon this information, cooling via the existing chiller plant or via stand-alone units on the roof of CLOC are both feasible options and depends on verified capacity at the chiller plant.

**11. Pavement**

New asphalt and concrete pavements are expected to support the project, including new on-site asphalt driveways and parking areas, as well as new on-site and off-site concrete sidewalks, driveway aprons, and pedestrian pathways.

Pavement design sections shall be provided by a licensed geotechnical engineer and be based upon proper soil investigations within the boundaries of the site.

**V. CONCLUSION**

The proposed improvements for this project will be designed in accordance with the applicable rules and regulations of the City and County of Honolulu. Existing and future utilities will provide adequate potable water, wastewater conveyance and storm drainage management for the Project. Based on this study, the project is expected to have no adverse effects on existing facilities and the surrounding environment.

**TABLES**

**1. Preliminary Drainage Calculations (Existing Conditions)**

| Existing Conditions        |             |                                 |
|----------------------------|-------------|---------------------------------|
| C-value                    | 0.88        |                                 |
| Time of Concentration (Tc) | 6.2         | minutes                         |
| Rainfall Intensity (I)     | 5.2         | inches/hour                     |
| Total Area (A)             | 0.75        | acres                           |
| <b>Q (existing)</b>        | <b>3.43</b> | <b>cfs (cubic feet per sec)</b> |

**2. Preliminary Drainage Calculations (Proposed Conditions)**

| Proposed Conditions        |             |                                 |
|----------------------------|-------------|---------------------------------|
| C-value                    | 0.80        |                                 |
| Time of Concentration (Tc) | 6.2         | minutes                         |
| Rainfall Intensity (I)     | 5.2         | inches/hour                     |
| Total Area (A)             | 0.75        | acres                           |
| <b>Q (proposed)</b>        | <b>3.12</b> | <b>cfs (cubic feet per sec)</b> |

**3. Preliminary Wastewater Calculations (Proposed Conditions)**

| Proposed Conditions            |              |   |
|--------------------------------|--------------|---|
| Maximum Occupancy (Est.)       | 150          | People  |
| Shifts Per Day                 | 2            | Building is open 24 hours a day but not expected to be heavily utilized at night. |
| Wastewater Per Capita Day      | 20           | gallons per day (gpd)   |
| <b>Average Wastewater Flow</b> | <b>6,000</b> | <b>gallons per day (gpd)</b>  |

*Per HAR Title 11 Chapter 62 – Wastewater Systems, Appendix F, dated January 14, 2004 And the Design Standards of the Division of Waste Management, Vol. 1, dated July 1984*

**4. Preliminary Water Demand Calculations (Proposed Conditions)**

| Proposed Conditions         |              |                              |
|-----------------------------|--------------|------------------------------|
| Wastewater Demand           | 6,000        | gallons per day (gpd)        |
| Percentage                  | 100          | %                            |
| <b>Average Water Demand</b> | <b>6,000</b> | <b>gallons per day (gpd)</b> |

*Assumed 100% of wastewater demand for water demand. Does not include irrigation.*

FIGURES



Figure 1: Vicinity Map



Figure 2: Location Map



**Parking Counts**  
Total Existing Stalls: 67  
Total Stalls after Renovation: 40  
Overall Dimensions: 52' 6" x 85'

UH Law School Outreach Center

Scheme 5A - Lower Floor



Figure 3a: Preliminary Site Plan (1<sup>st</sup> Floor)  
PROJECT #: 212067-01



UH William S. Richardson School of Law  
Community Legal Outreach Center (CLOC)

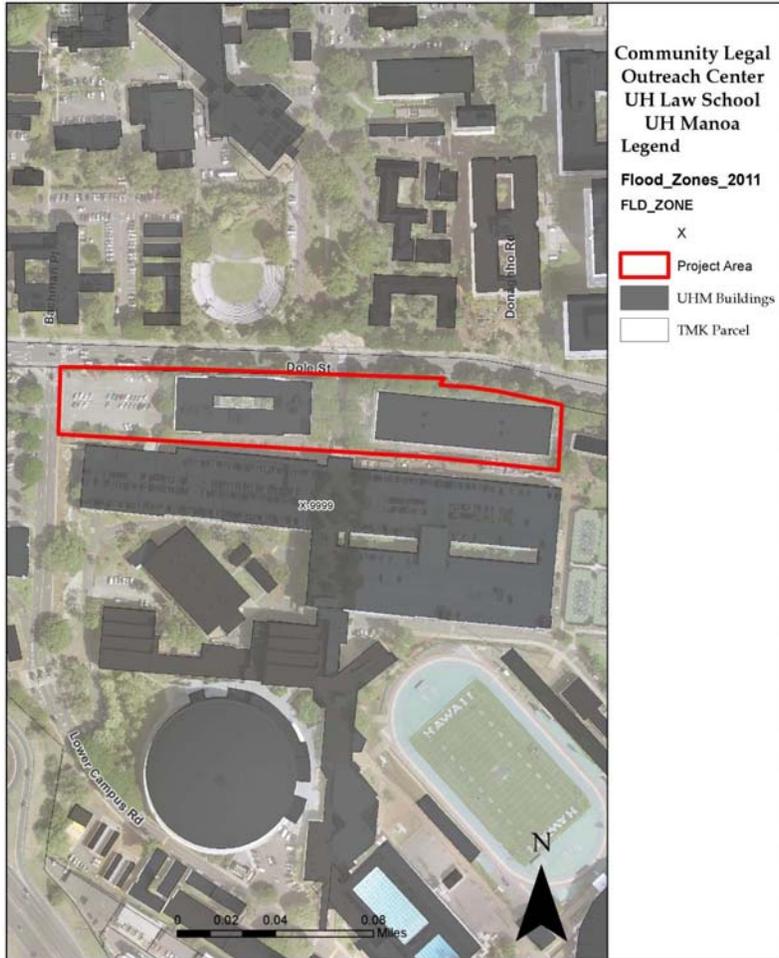
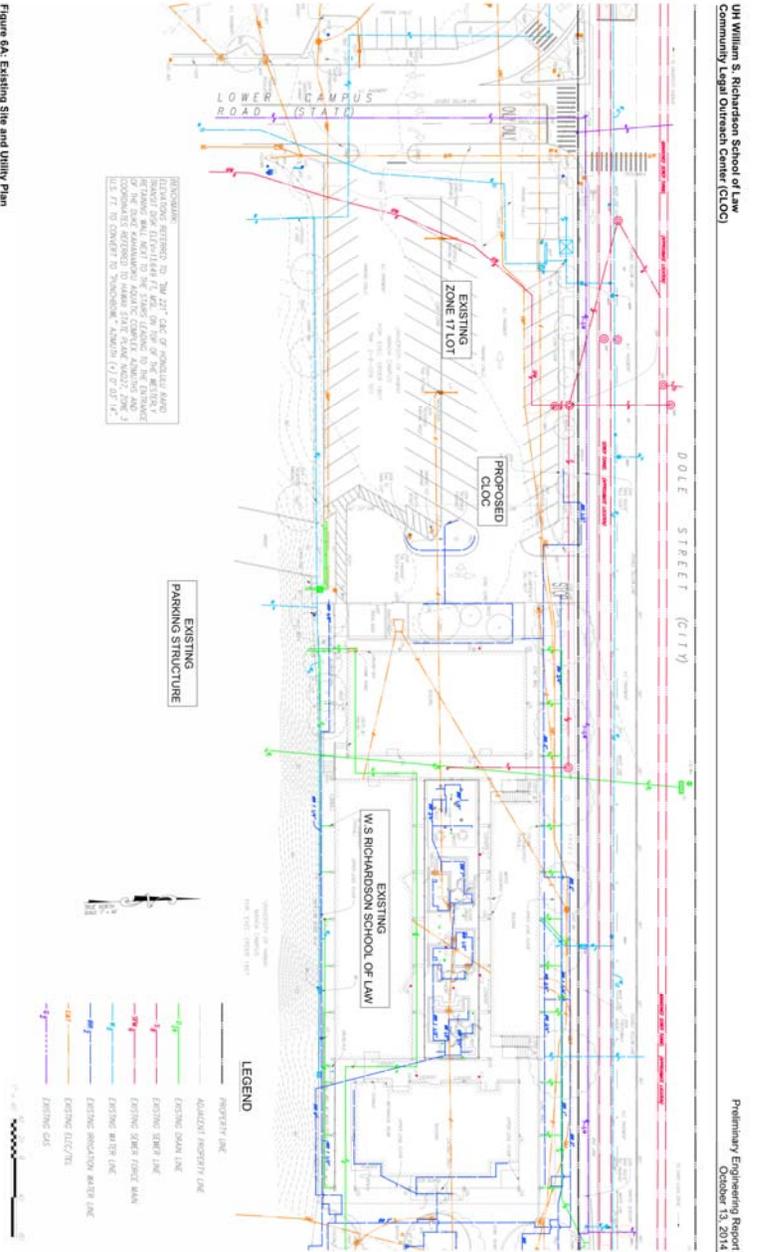


Figure 5: Flood Zone Map

Figure 6A: Existing Site and Utility Plan  
PROJECT #: 212067-01



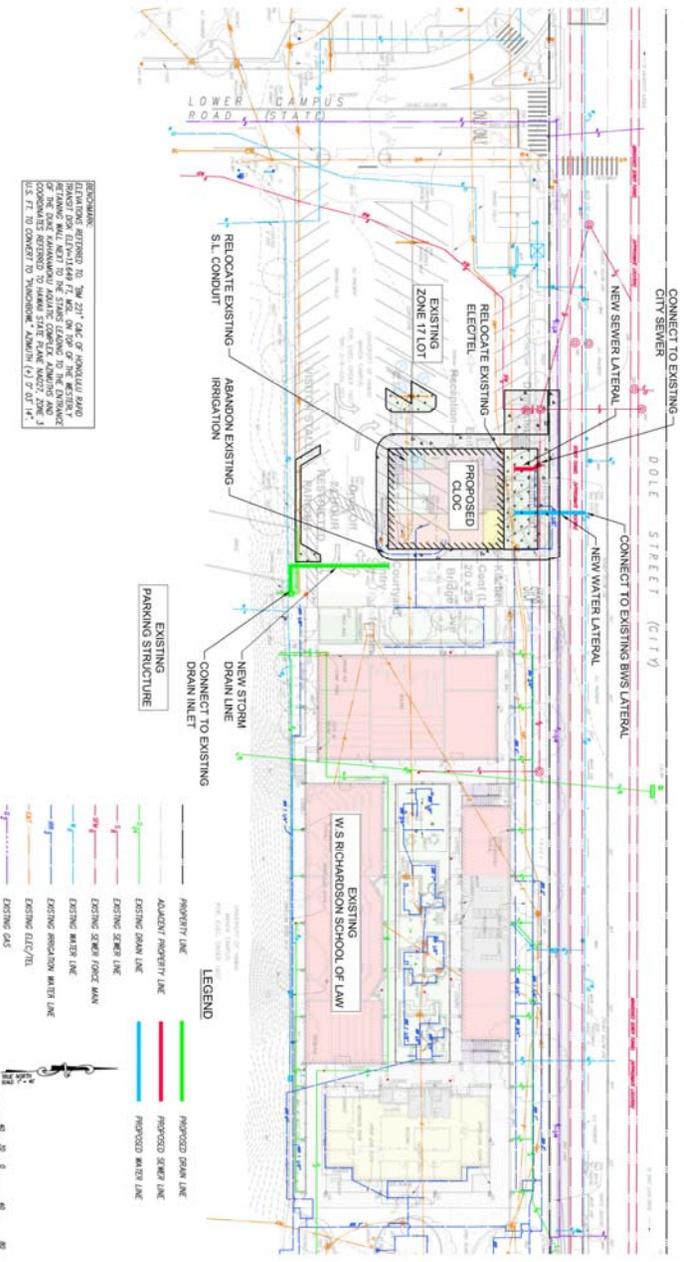


Figure 6B: Proposed Site and Utility Plan

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Appendix B  
TRAFFIC ASSESSMENT





AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS • SURVEYORS

CONTINUING THE ENGINEERING PRACTICE FOUNDED BY H. A. R. AUSTIN IN 1934

TERENCE S. AMASHIRO, P.E.

STANLEY T. WATANABE

IVAN K. MAKATSIUKA, P.E.

ADRIENNE W. L. H. WONG, P.E., LEED AP

DEANNA HAYASHI, P.E.

PAUL K. ARITA, P.E.

ERIK S. KANESHIRO, L.P.L.S., LEED AP

Mrs. Christine Ruotola  
Group 70 International, Inc.  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813

Dear Mrs. Ruotola:

**Subject: Traffic Assessment Letter for**

**The University of Hawaii Law School Improvements**  
**Honolulu, Oahu, Hawaii**

**Tax Map Key: (1) 2-8-029:001**

Austin, Tsutsumi & Associates, Inc. (ATA) has conducted a traffic assessment for the proposed west wing expansion of the University of Hawaii at Manoa, William S. Richardson School of Law (UH Law School).

### PROJECT DESCRIPTION AND STUDY SCOPE

The UH Law School is planning on expanding their existing facility by constructing a new two-story, free-standing building adjacent, and to the west of the existing west wing of the UH Law School. The new building will feature new conference rooms, utility spaces, classrooms and offices. Hereinafter, the UH Law School expansion will be referred to as the "Project". See Figure 1 for a Location Map and the proposed Project site plan.

### Existing Conditions

Manual turning movement traffic counts and field observations were conducted at the following study intersections on Saturday April 25 and Thursday April 30, 2015:

- University Avenue/Dole Street (Signalized – AM/PM peaks only)
- Dole Street/Lower Campus Road (Signalized)
- Dole Street/Pedestrian Crosswalk (Signalized – AM/PM peaks only)
- Dole Street/Law School Parking Lot Driveaway (Unsignalized – special event night only)

Based on traffic count data, the weekday AM and PM peak hours of traffic were determined to occur between 7:15 AM to 8:15 AM and 4:00 PM to 5:00 PM, respectively.

Special event observations and data collection were done following a UH Men's Volleyball game which recorded the second-highest attendance for the season at 6,120 people. The peak period for exiting vehicles following a special event was determined to be from 9:30 PM to 10:30 PM. Traffic count data is provided in Attachment A.

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AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS • SURVEYORS

Mrs. Christine Ruotola  
Group 70 International, Inc.  
November 23, 2015

### AM and PM Existing Conditions and Observations

University Avenue/Dole Street

Currently the University Avenue/Dole Street intersection operates at an overall LOS D(E) during the AM(PM) peak hours of traffic with overcapacity conditions for the westbound left-turn movement during the PM peak hour of traffic. Extensive queuing was observed on all approaches with the eastbound approach typically being the only one to clear in a single cycle. In addition, the right-most northbound right-turn lane was typically limited to using only half of its available capacity due to heavy northbound through movements queuing back past the pocket entrance.

Dole Street/Lower Campus Road & Pedestrian Crosswalk

All movements at the Dole Street/Lower Campus Road and Dole Street/Pedestrian Crosswalk intersections currently operate at LOS B or better during the AM and PM peak hours of traffic. While analysis results indicate an overall LOS B or better for all movements, in this particular instance, analysis results do not directly reflect the existing traffic conditions observed in the field. During typical weekday peak hour conditions, intersection queuing was a result of queue spill back from the University Avenue/Dole Street intersection. Field observations revealed that vehicles from both approaches at the Dole Street/Lower Campus Road intersection often had difficulty crossing this intersection due to limited storage space as a result of the spill back from University Avenue. Field observations also revealed that a drop-off/drop-off area for non-law school currently use the UH Law School parking lot as a drop-off/drop-off area for non-law school students. As a result occasional queuing was observed to occur for egress vehicles attempting to turn out onto Dole Street.

See Figure 2 for existing lane configurations, volumes and LOS.

### Special Event Conditions & Observations

Due to special event conditions, HCM Analysis could not be performed at the studied intersections as a result of temporary traffic control as well as special duty officers directing traffic flow at the University Avenue/Dole Street, Dole Street/Lower Campus Road and Dole Street/UH Law School Parking Lot Driveaway intersections. Following the completion of the volleyball game it took approximately 1 hour to clear the egress queue and remove traffic control devices, after which, the traffic signals were switched back to normal operation. University Avenue/Dole Street

Special duty officers maintained queue lengths similar to peak hour conditions for all approaches to the intersection while restricting north and southbound left-turn movements. Westbound left-turn queues typically spilled back to the Dole Street/Lower Campus Road intersection throughout the entire egress duration following the game.

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Dole Street/Lower Campus Road

Lower Campus Road egress queue lengths typically spilled back from the intersection reaching the parking structure and spilling up the parking levels. Other approaches to the intersection typically maintained conditions similar to existing with no approach queue ever spilling back to adjacent intersections.

Dole Street/UH Law School Parking Lot Driveway

The Dole Street/UH Law School Parking Lot Driveway is the main egress point for the upper levels of the parking garage via the bridge that connects the Law School parking lot directly to the roof level of the garage. Vehicles utilizing this egress point are restricted to right-out movements only with the queue length spilling back into the garage, wrapping down two levels. See Figure 3 for existing lane configurations, volumes, LOS and traffic control plans for special events as well as location of special duty officers.

#### FUTURE YEAR WITH PROJECT CONDITIONS

The UH Law School expansion will consist of a new two-story, free-standing building adjacent to the existing west wing of the Law School expected to be completed in 2016. The new building will feature conference rooms, classrooms, various utility spaces, a kitchen and additional offices totaling 7,600 square feet of gross floor area (SF GFA). As a result of the new building, approximately 35 existing parking stalls within the UH Law School parking lot will be removed and displaced vehicles will be relocated to the adjacent parking structure. In addition, 'Do Not Block' pavement striping will be installed along Lower Campus Road fronting the existing Law School parking lot entrance. Finally, access to the existing Law School Driveway fronting Dole Street will be restricted to maintenance vehicles as well as egress vehicles following special events.

#### Project Trip Generation

A review of the trip rates published by ITE in Trip Generation, 9th Edition, indicates that the Project is most closely represented by Land Use Code 715 – Single Tenant Office Building. Due to its use of office space, conference rooms, classrooms and support facilities:

| Land Use Type<br>(ITE Code)            | SF GFA | Weekday AM<br>Peak Hour |               |                | Weekday PM<br>Peak Hour |               |                |
|--|--------|-------------------------|---------------|----------------|-------------------------|---------------|----------------|
|  |        | Enter<br>(vph)          | Exit<br>(vph) | Total<br>(vph) | Enter<br>(vph)          | Exit<br>(vph) | Total<br>(vph) |
| Single Tenant Office<br>Building (715) | 7600   | 31                      | 4             | 35             | 7                       | 39            | 46             |

Table 1  
Trip Generation

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Group 70 International, Inc.  
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In addition to project trip generation quantities, a de-facto background annual growth rate of 1.5% was obtained from Hawaii Department of Transportation (HDOT) tube counts and applied to all approaches to the studied intersections to account for infill growth.

#### Project Analysis and Impact

Several select movements at the University Avenue/Dole Street intersection are anticipated to experience reductions to their LOS. Reductions to select movements can be attributed to slight increases to volumes as a result of the background growth rate applied and new Project trips. Despite reductions to operations, all intersections are anticipated to continue operating at the same overall LOS. See Figure 4 for lane configurations, volumes and

All existing facilities and services are anticipated to be maintained, including pedestrian access to the parking garage bridge as well as vehicle egress access following special events. Physical changes inferior to the UH Law School parking lot are not anticipated to adversely affect the existing special event traffic control measure laid out above in Figure 3.

Restriction of the UH Law School driveway fronting Dole Street to maintenance vehicles will reduce the number of vehicles using the area as a drop-off area for non-law school students. Reducing the number of these vehicles by restricting their access to a single location may reduce potential pedestrian-vehicle conflict as well as limit the existing egress queuing within the UH Law School parking lot during peak periods.

Relocation of 35 UH Law School parking lot stalls will be inconsequential to the availability of parking for those with passes. The existing adjacent parking structure contains adequate capacity to facilitate an additional 35 users with excess available for 'pay-per-day' users. Additionally, inclusion of 'Do Not Block' striping may locally improve traffic operation consistency at adjacent parking lot driveway.

#### PRU CONDITIONS

In the Long Range Development Plan, University of Hawaii, Manoa Campus, 2007 Update, Plan Review Use (PRU), Section 4.14 outlines proposed mitigation strategies at the University Avenue/Dole Street intersection to alleviate anticipated congestion in year 2017. The proposed mitigations are broken down into two phases. Phase 1 consists of reconfiguring 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. Phase 2 consists of incorporating three (3) exclusive through lanes and two (2) exclusive right-turn lanes, with the right-most lane directly connecting to the H-1 Freeway Westbound Off-Ramp. In addition, the eastbound approach to the Dole Street/Lower Campus Road intersection will be modified to incorporate an exclusive through lane, a share through/right-turn lane, and an exclusive right-turn lane.

Implementation of the above phases as outlined in the PRU would significantly improve intersection operations for minor approaches to the University Avenue/Dole Street intersection.

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Overall LOS would remain at LOS D(E) during the AM (PM) peak hours of traffic, with notable reductions to intersection delay. See Figure 5 for proposed lane configurations, volumes and LOS and Table 2 for an LOS summary table.

#### Conclusions

The following are the conclusions of the traffic assessment study.

- The 7,600 SF GFA expansion will add approximately 35(46) AM(PM) trips to the surrounding roadways. Peak hour impacts to existing delay will be marginal but are anticipated to reduce LOS at select movements as a combined result of de-facto growth rates and project generated traffic.
- Existing PRU mitigations outlined in the 2007 update are consistent with anticipated growth and traffic projects. Future implementation of alternatives would significantly improve minor approach operations.

Mrs. Christine Ruotola  
Group 70 International, Inc.

November 23, 2015

We appreciate the opportunity to prepare this traffic assessment for the Project. Should you require clarification, please call myself or Eric Imada at (808) 533-3646.

Sincerely,

AUSTIN, TSUTSUMI & ASSOCIATES, INC.

  
MATT K. NAKAMOTO, P.E.  
Chief Transportation Engineer

MN E1 MI

Enclosures: 1) Table 2: LOS Summary Table  
2) Figures 1-5  
3) Traffic Count Data  
4) LOS Calculations

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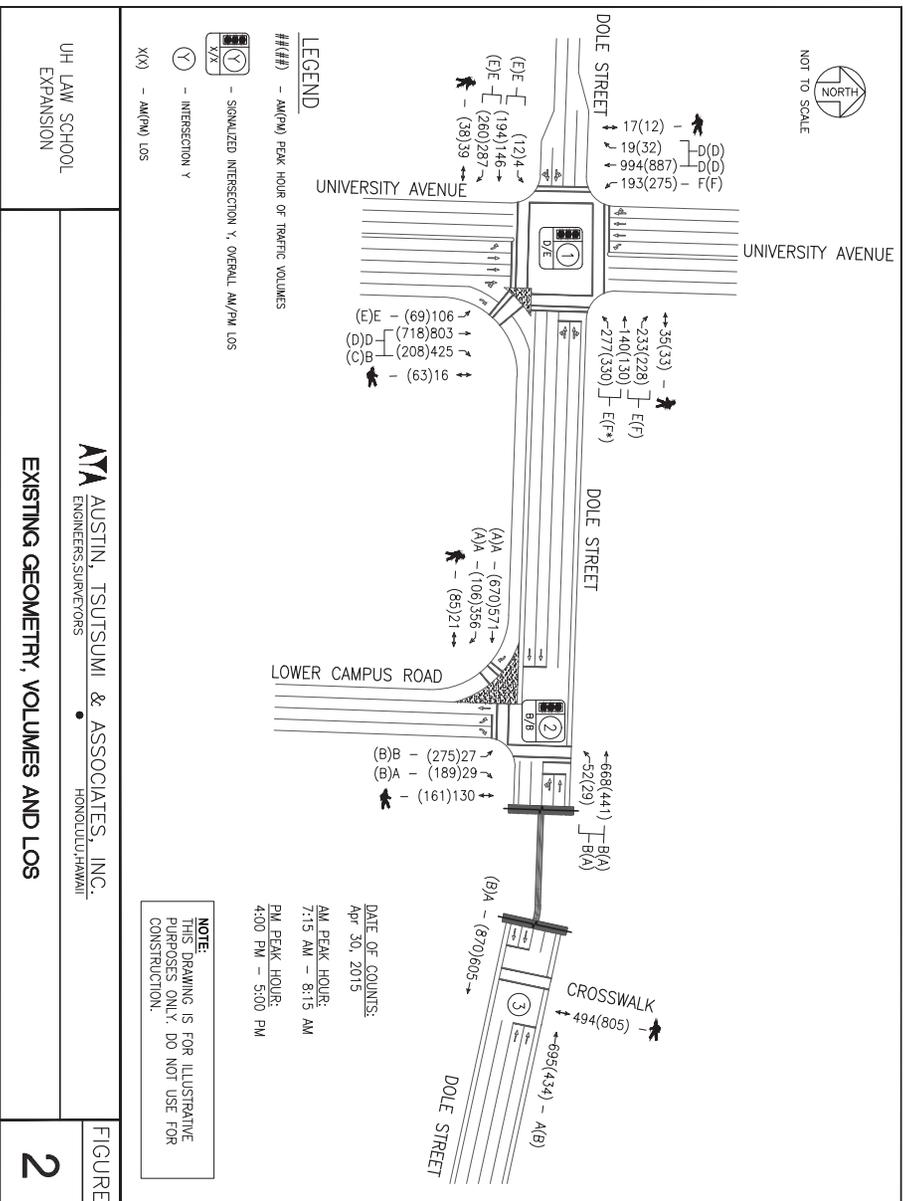
# LOS SUMMARY TABLE

TABLE 2: LOS SUMMARY TABLE  
EXISTING, WITH PROJECT 2016 WITH PROJECT AND PRO MITIGATIONS 2016 SCENARIOS

| Intersection                           | Existing Conditions |           |     |           |           |     | With Project 2016 |           |     |           |           |     | With Project and PRU Mitigations 2016 |           |     |           |           |     |
|--|---------------------|-----------|-----|-----------|-----------|-----|-------------------|-----------|-----|-----------|-----------|-----|---------------------------------------|-----------|-----|-----------|-----------|-----|
|  | AM                  |           | LOS | PM        |           | LOS | AM                |           | LOS | PM        |           | LOS | AM                                    |           | LOS | PM        |           | LOS |
|  | HCM Delay           | v/c Ratio |     | HCM Delay | v/c Ratio |     | HCM Delay         | v/c Ratio |     | HCM Delay | v/c Ratio |     | HCM Delay                             | v/c Ratio |     | HCM Delay | v/c Ratio |     |
| <b>University Avenue/Dobie Street</b>  |                     |           |     |           |           |     |                   |           |     |           |           |     |                                       |           |     |           |           |     |
| EB L/T/H                               | 56.1                | 0.50      | E   | 55.8      | 0.59      | E   | 58.1              | 0.55      | E   | 57.4      | 0.63      | E   | 51.3                                  | 0.49      | D   | 54.9      | 0.57      | D   |
| EB THRT                                | 56.3                | 0.50      | E   | 58.4      | 0.83      | E   | 28.3              | 0.54      | E   | 60.5      | 0.86      | E   | 51.4                                  | 0.48      | D   | 58.8      | 0.59      | E   |
| WB L/T/H                               | 78.6                | 0.93      | E   | 109.4     | 1.04      | F-  | 86.2              | 0.96      | F   | 135.0     | 1.12      | F-  | 58.6                                  | 0.80      | E   | 74.3      | 0.89      | E   |
| WB THRT                                | 67.4                | 0.85      | E   | 91.4      | 0.96      | F   | 72.3              | 0.88      | E   | 110.2     | 1.02      | F-  | 49.6                                  | 0.49      | D   | 55.9      | 0.62      | E   |
| NB L/T                                 | 79.1                | 0.87      | E   | 71.5      | 0.83      | E   | 84.0              | 0.88      | F   | 71.4      | 0.84      | E   | 74.9                                  | 0.87      | D   | 72.3      | 0.84      | D   |
| NB THRT                                | 44.7                | 0.69      | D   | 50.0      | 0.61      | D   | 48.1              | 0.73      | B   | 48.9      | 0.61      | D   | 42.3                                  | 0.39      | C   | 48.9      | 0.59      | D   |
| SB L/T/H                               | 18.8                | 0.42      | D   | 25.2      | 0.38      | D   | 19.8              | 0.38      | F   | 25.3      | 0.29      | C   | 21.1                                  | 0.40      | C   | 27.7      | 0.41      | F   |
| SB TH                                  | 40.8                | 0.64      | D   | 40.7      | 0.58      | D   | 42.3              | 0.65      | D   | 41.5      | 0.60      | D   | 37.2                                  | 0.62      | D   | 39.8      | 0.58      | D   |
| SB THRT                                | 41.6                | 0.64      | D   | 41.3      | 0.58      | D   | 43.3              | 0.65      | D   | 42.4      | 0.60      | D   | 38.0                                  | 0.62      | D   | 40.5      | 0.58      | D   |
| Overall                                | 50.9                | -         | D   | 62.7      | -         | E   | 52.3              | -         | D   | 69.5      | -         | E   | 43.9                                  | -         | D   | 55.2      | -         | E   |
| <b>Dobie Street/Lower Campus Road</b>  |                     |           |     |           |           |     |                   |           |     |           |           |     |                                       |           |     |           |           |     |
| EB TH                                  | 9.0                 | 0.41      | A   | 9.1       | 0.45      | A   | 8.9               | 0.40      | A   | 9.1       | 0.46      | A   | 8.7                                   | 0.38      | A   | 9.0       | 0.44      | A   |
| EB THRT                                | 0.0                 | 0.00      | A   | 0.0       | 0.00      | A   | 0.0               | 0.00      | A   | 0.0       | 0.00      | A   | 0.0                                   | 0.00      | A   | 0.0       | 0.00      | A   |
| WB TH                                  | 18.9                | 0.61      | B   | 9.0       | 0.34      | A   | 19.7              | 0.64      | B   | 9.5       | 0.35      | A   | 18.7                                  | 0.64      | B   | 9.5       | 0.35      | A   |
| WB L/T/H                               | 17.5                | 0.55      | B   | 9.4       | 0.34      | A   | 18.1              | 0.58      | B   | 9.1       | 0.33      | A   | 18.1                                  | 0.58      | B   | 9.1       | 0.33      | A   |
| NB L/T                                 | 10.5                | 0.07      | B   | 16.2      | 0.56      | B   | 10.5              | 0.08      | B   | 18.7      | 0.67      | B   | 10.5                                  | 0.08      | B   | 18.7      | 0.67      | B   |
| NB THRT                                | 0.0                 | 0.00      | A   | 12.5      | 0.29      | B   | 0.0               | 0.00      | A   | 13.4      | 0.37      | B   | 0.0                                   | 0.00      | A   | 13.4      | 0.37      | B   |
| Overall                                | 14.2                | -         | B   | 10.8      | -         | B   | 14.7              | -         | B   | 11.7      | -         | B   | 14.7                                  | -         | B   | 11.7      | -         | B   |
| <b>Dobie Street/Edgerton Crosswalk</b> |                     |           |     |           |           |     |                   |           |     |           |           |     |                                       |           |     |           |           |     |
| EB TH                                  | 3.7                 | 0.41      | A   | 14.1      | 0.67      | B   | 4.0               | 0.42      | A   | 14.5      | 0.69      | B   | 4.0                                   | 0.42      | A   | 14.5      | 0.69      | B   |
| EB THRT                                | 8.6                 | 0.78      | B   | 18.1      | 1.00      | B   | 8.3               | 0.78      | B   | 18.1      | 1.00      | B   | 8.3                                   | 0.78      | B   | 18.1      | 1.00      | B   |
| WB TH                                  | 6.3                 | 0.28      | A   | 12.8      | 0.35      | B   | 6.5               | 0.28      | A   | 13.1      | 0.36      | B   | 6.5                                   | 0.28      | A   | 13.1      | 0.36      | B   |
| WB L/T/H                               | 18.9                | 0.61      | B   | 9.0       | 0.34      | A   | 19.7              | 0.64      | B   | 9.5       | 0.35      | A   | 18.7                                  | 0.64      | B   | 9.5       | 0.35      | A   |
| NB L/T                                 | 10.5                | 0.07      | B   | 16.2      | 0.56      | B   | 10.5              | 0.08      | B   | 18.7      | 0.67      | B   | 10.5                                  | 0.08      | B   | 18.7      | 0.67      | B   |
| NB THRT                                | 0.0                 | 0.00      | A   | 12.5      | 0.29      | B   | 0.0               | 0.00      | A   | 13.4      | 0.37      | B   | 0.0                                   | 0.00      | A   | 13.4      | 0.37      | B   |
| Overall                                | 6.3                 | 0.28      | A   | 12.8      | 0.35      | B   | 6.5               | 0.28      | A   | 13.1      | 0.36      | B   | 6.5                                   | 0.28      | A   | 13.1      | 0.36      | B   |

\* Due to software and methodology limitations, analysis for this intersection was done using HCM 2000

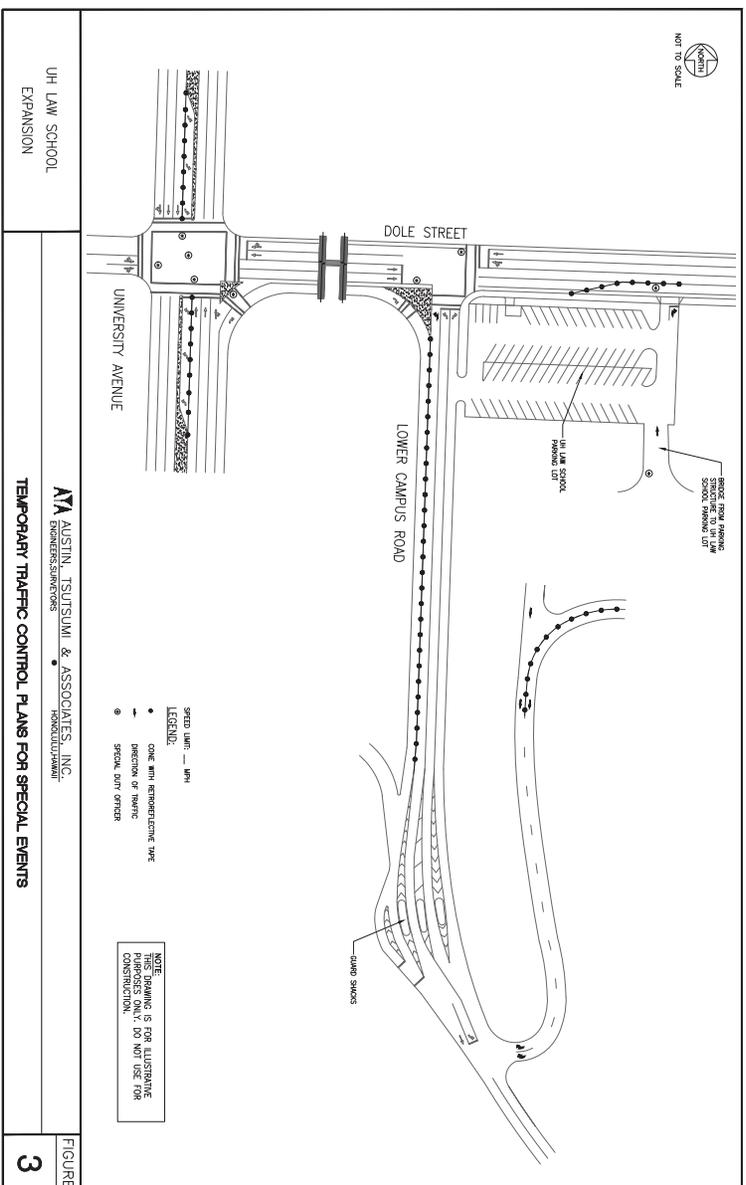




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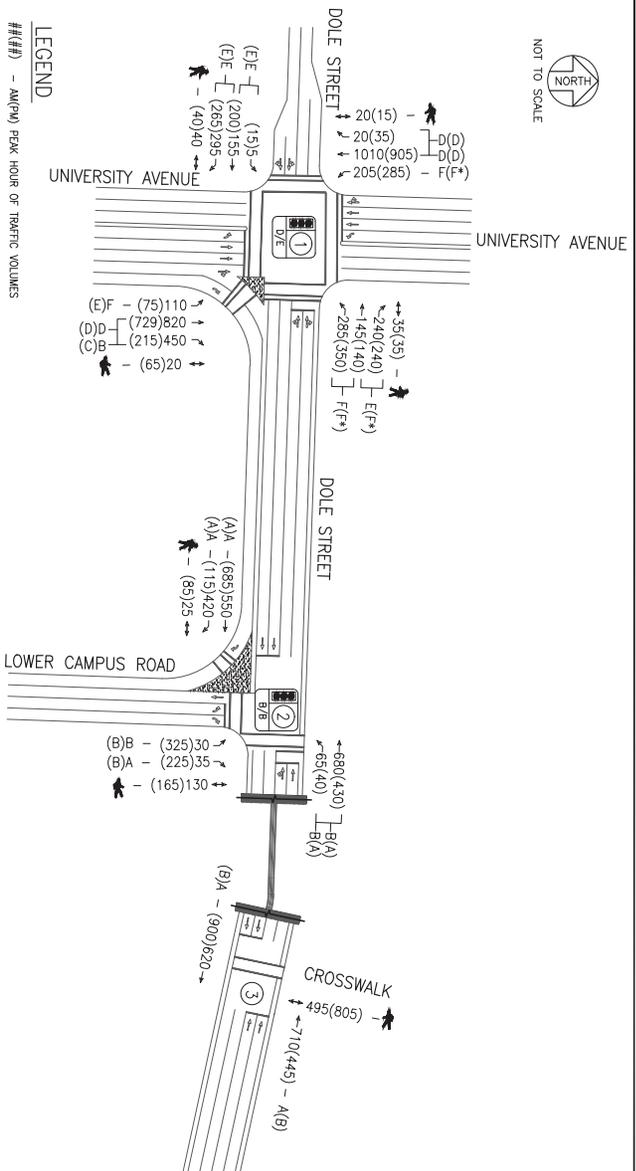
FIGURE 2



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FIGURE 3

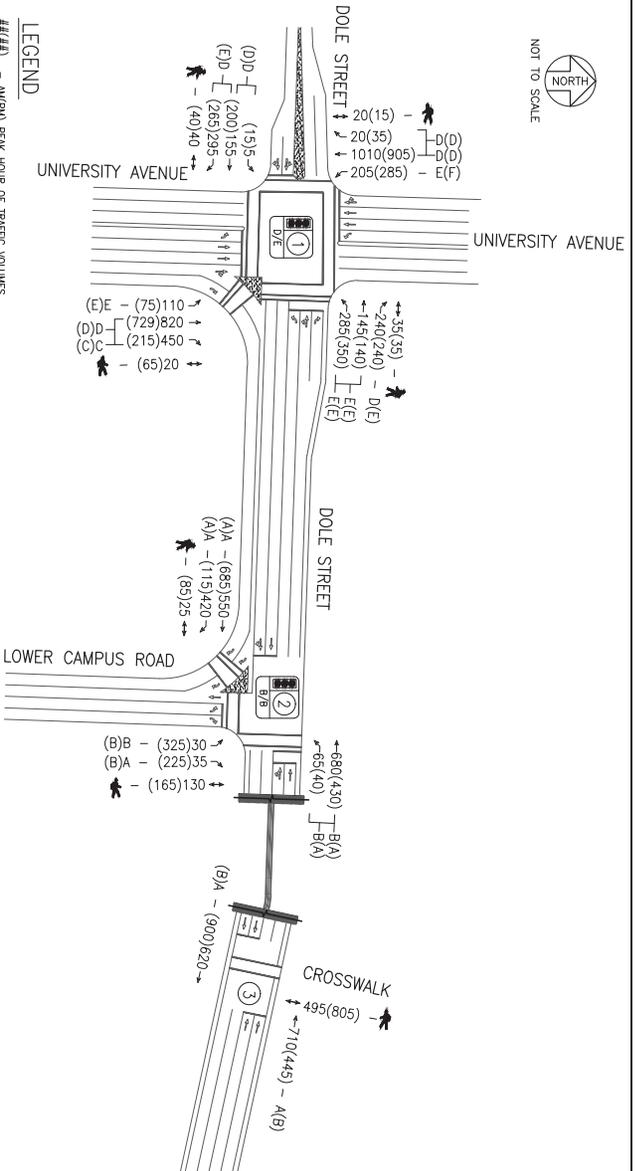


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EXPANSION

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FIGURE

4



UH LAW SCHOOL  
EXPANSION

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FIGURE

5



## TRAFFIC COUNT DATA

| Start Time  | Eastbound |      |       | Westbound |      |      | Northbound |      |      | Southbound |       |      | Inc. Total |      |
|-------------|-----------|------|-------|-----------|------|------|------------|------|------|------------|-------|------|------------|------|
|             | Left      | Thru | Right | Peds      | Left | Thru | Right      | Peds | Left | Thru       | Right | Peds |            |      |
| 06:30 AM    | 0         | 67   | 81    | 0         | 7    | 73   | 0          | 14   | 5    | 0          | 1     | 5    | 0          | 253  |
| 06:45 AM    | 0         | 76   | 82    | 0         | 4    | 124  | 0          | 37   | 9    | 0          | 5     | 2    | 0          | 339  |
| Total       | 0         | 143  | 163   | 0         | 11   | 197  | 0          | 51   | 14   | 0          | 6     | 7    | 0          | 592  |
| 07:00 AM    | 0         | 122  | 74    | 0         | 12   | 136  | 0          | 23   | 12   | 0          | 6     | 5    | 0          | 390  |
| 07:15 AM    | 0         | 138  | 76    | 0         | 7    | 185  | 0          | 35   | 6    | 0          | 8     | 4    | 0          | 459  |
| 07:30 AM    | 0         | 164  | 63    | 0         | 12   | 178  | 0          | 35   | 7    | 0          | 10    | 6    | 0          | 475  |
| 07:45 AM    | 0         | 157  | 88    | 0         | 16   | 157  | 0          | 32   | 5    | 0          | 6     | 4    | 0          | 465  |
| Total       | 0         | 581  | 301   | 0         | 47   | 656  | 0          | 125  | 30   | 0          | 30    | 19   | 0          | 1789 |
| 08:00 AM    | 0         | 112  | 129   | 0         | 17   | 148  | 0          | 28   | 9    | 0          | 5     | 7    | 0          | 455  |
| 08:15 AM    | 0         | 124  | 127   | 0         | 17   | 96   | 0          | 48   | 6    | 0          | 4     | 9    | 0          | 431  |
| Grand Total | 0         | 960  | 720   | 0         | 92   | 1097 | 0          | 252  | 59   | 0          | 45    | 42   | 0          | 431  |
| Apprch %    | 0         | 57.1 | 42.9  | 0         | 6.4  | 76.1 | 0          | 17.5 | 40.4 | 0          | 30.8  | 28.8 | 0          | 431  |
| Total %     | 0         | 29.4 | 22    | 0         | 2.8  | 33.6 | 0          | 7.7  | 1.8  | 0          | 1.4   | 1.3  | 0          | 3267 |

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File Name : AM\_Lower Campus Rd - Dole St  
 Site Code : 00000000  
 Start Date : 4/30/2015  
 Page No : 1

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Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : AM\_Lower Campus Rd - Dole St

Site Code : 00000000

Start Date : 4/30/2015

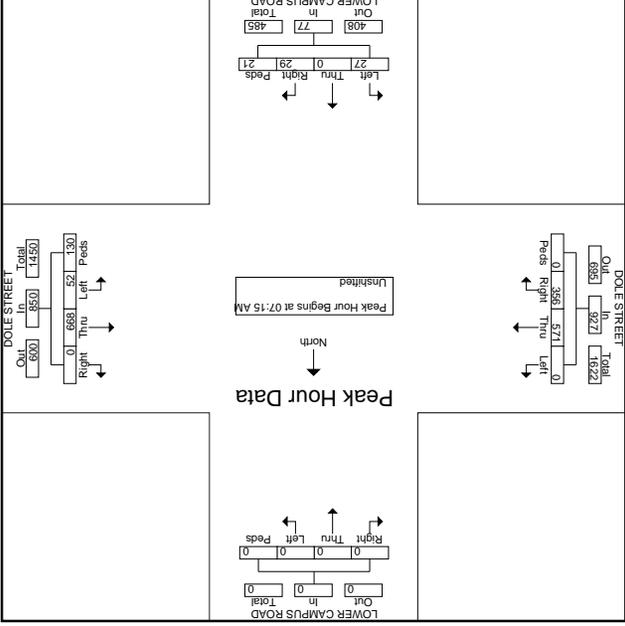
Page No : 2

| Start Time   | Eastbound |       |       | Westbound |       |       | Lower Campus Road |       |       | Lower Campus Road |       |       | Southbound |       |       | App Total | Inc. Total |
|--------------|-----------|-------|-------|-----------|-------|-------|-------------------|-------|-------|-------------------|-------|-------|------------|-------|-------|-----------|------------|
|              | Left      | Thru  | Right | Left      | Thru  | Right | Left              | Thru  | Right | Left              | Thru  | Right | Left       | Thru  | Right |           |            |
| 06:30 AM     | 0         | 0     | 0     | 0         | 0     | 0     | 0                 | 0     | 0     | 0                 | 0     | 0     | 0          | 0     | 0     | 0         | 0          |
| 07:15 AM     | 0         | 138   | 76    | 0         | 214   | 7     | 185               | 35    | 227   | 6                 | 0     | 8     | 4          | 18    | 0     | 0         | 0          |
| 07:30 AM     | 0         | 164   | 63    | 0         | 227   | 12    | 178               | 0     | 35    | 225               | 7     | 0     | 10         | 6     | 23    | 0         | 0          |
| 07:45 AM     | 0         | 157   | 88    | 0         | 245   | 16    | 157               | 0     | 32    | 205               | 5     | 0     | 6          | 4     | 15    | 0         | 0          |
| 08:00 AM     | 0         | 112   | 129   | 0         | 171   | 17    | 148               | 0     | 28    | 193               | 9     | 0     | 7          | 0     | 0     | 0         | 0          |
| Total Volume | 0         | 571   | 356   | 0         | 927   | 52    | 668               | 0     | 130   | 850               | 27    | 0     | 29         | 21    | 77    | 0         | 0          |
| % App. Total | 0         | 61.6  | 38.4  | 0         | 0     | 0     | 6.1               | 78.6  | 0     | 15.3              | 0.929 | 0.000 | 0.000      | 0.000 | 0.000 | 0.000     | 0.000      |
| PHF          | 0.000     | 0.870 | 0.690 | 0.000     | 0.946 | 0.765 | 0.903             | 0.000 | 0.936 | 0.750             | 0.936 | 0.000 | 0.725      | 0.750 | 0.837 | 0.000     | 0.000      |

Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

| Start Time  | Eastbound |      |       | Westbound |      |       | Lower Campus Road |      |       | Lower Campus Road |      |       | Southbound |      |       | App Total | Inc. Total |
|-------------|-----------|------|-------|-----------|------|-------|-------------------|------|-------|-------------------|------|-------|------------|------|-------|-----------|------------|
|             | Left      | Thru | Right | Left      | Thru | Right | Left              | Thru | Right | Left              | Thru | Right | Left       | Thru | Right |           |            |
| 06:30 AM    | 0         | 69   | 35    | 0         | 81   | 0     | 0                 | 0    | 0     | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 07:15 AM    | 0         | 150  | 0     | 0         | 110  | 0     | 171               | 0    | 189   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 07:30 AM    | 0         | 172  | 0     | 0         | 110  | 0     | 171               | 0    | 189   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 07:45 AM    | 0         | 164  | 0     | 0         | 124  | 0     | 181               | 0    | 189   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:00 AM    | 0         | 133  | 0     | 0         | 68   | 0     | 161               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154               | 0    | 174   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702               | 0    | 163   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2              | 0    | 27.4  | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180              | 0    | 108   | 0                 | 0    | 0     | 0          | 0    | 0     | 0         | 0          |



**Austin Soatumi & Associates**

501 Sumner Street, Suite 521

Honolulu, HI 96817-5031

Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : AM\_UH Crosswalk - Dole St

Site Code : 00000000

Start Date : 4/30/2015

Page No : 1

| Start Time  | Eastbound |      |       | Westbound |      |       | UH Crosswalk |      |       | UH Crosswalk |      |       | App Total | Inc. Total |
|-------------|-----------|------|-------|-----------|------|-------|--------------|------|-------|--------------|------|-------|-----------|------------|
|             | Left      | Thru | Right | Left      | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |           |            |
| 06:30 AM    | 0         | 69   | 35    | 0         | 81   | 0     | 0            | 0    | 0     | 0            | 0    | 0     | 0         | 0          |
| 07:15 AM    | 0         | 150  | 0     | 0         | 110  | 0     | 171          | 0    | 189   | 0            | 0    | 0     | 0         | 0          |
| 07:30 AM    | 0         | 172  | 0     | 0         | 110  | 0     | 171          | 0    | 189   | 0            | 0    | 0     | 0         | 0          |
| 07:45 AM    | 0         | 164  | 0     | 0         | 124  | 0     | 181          | 0    | 189   | 0            | 0    | 0     | 0         | 0          |
| 08:00 AM    | 0         | 133  | 0     | 0         | 68   | 0     | 161          | 0    | 163   | 0            | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702          | 0    | 163   | 0            | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2         | 0    | 27.4  | 0            | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180         | 0    | 108   | 0            | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154          | 0    | 174   | 0            | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702          | 0    | 163   | 0            | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2         | 0    | 27.4  | 0            | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180         | 0    | 108   | 0            | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154          | 0    | 174   | 0            | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702          | 0    | 163   | 0            | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2         | 0    | 27.4  | 0            | 0    | 0     | 0         | 0          |
| Grand Total | 0         | 1006 | 0     | 0         | 826  | 0     | 1180         | 0    | 108   | 0            | 0    | 0     | 0         | 0          |
| 08:15 AM    | 0         | 122  | 0     | 0         | 174  | 0     | 154          | 0    | 174   | 0            | 0    | 0     | 0         | 0          |
| Total       | 0         | 619  | 0     | 0         | 399  | 0     | 702          | 0    | 163   | 0            | 0    | 0     | 0         | 0          |
| Apprch %    | 0         | 54.9 | 0     | 0         | 45.1 | 0     | 39.2         | 0    | 27.4  | 0            | 0    | 0     | 0         | 0          |

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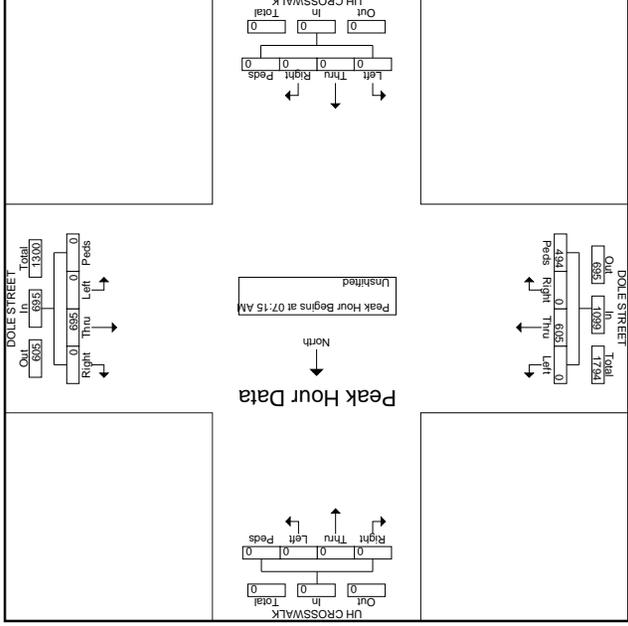
Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : AM\_UH Crosswalk - Dole St  
Site Code : 00000000  
Start Date : 4/30/2015  
Page No : 2

| Start Time   | Eastbound |      |       | Westbound |      |       | Northbound |      |       | Southbound |      |       | UH CROSSWALK |
|--------------|-----------|------|-------|-----------|------|-------|------------|------|-------|------------|------|-------|--------------|
|              | Left      | Thru | Right | Left      | Thru | Right | Left       | Thru | Right | Left       | Thru | Right |              |
| 08:00 AM     | 0         | 119  | 0     | 0         | 100  | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0            |
| 07:15 AM     | 0         | 150  | 0     | 0         | 97   | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0            |
| 07:45 AM     | 0         | 172  | 0     | 0         | 110  | 282   | 0          | 0    | 0     | 0          | 0    | 0     | 0            |
| 08:00 AM     | 0         | 119  | 0     | 0         | 163  | 288   | 0          | 0    | 0     | 0          | 0    | 0     | 0            |
| Total Volume | 0         | 605  | 0     | 0         | 494  | 1099  | 0          | 0    | 0     | 0          | 0    | 0     | 0            |
| % App. Total | 0         | 55.1 | 0     | 0         | 44.9 | 758   | 0          | 0    | 0     | 0          | 0    | 0     | 0            |
| PHF          | .000      | .879 | .000  | .000      | .758 | .954  | .000       | .000 | .000  | .000       | .000 | .000  | .956         |

Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM



| Start Time  | From East |      |      | From West |      |      | From North |      |      | From South |      |      | UH CROSSWALK |
|-------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|------|--------------|
|             | Right     | Thru | Left | Right     | Thru | Left | Right      | Thru | Left | Right      | Thru | Left |              |
| 06:30 AM    | 18        | 12   | 0    | 5         | 35   | 35   | 10         | 1    | 271  | 1          | 114  | 29   | 1            |
| 06:45 AM    | 48        | 15   | 1    | 6         | 70   | 69   | 34         | 33   | 144  | 97         | 212  | 29   | 3            |
| 07:00 AM    | 54        | 24   | 0    | 2         | 80   | 47   | 40         | 53   | 145  | 72         | 252  | 37   | 3            |
| 07:15 AM    | 82        | 35   | 0    | 0         | 6    | 123  | 57         | 43   | 177  | 96         | 235  | 32   | 6            |
| 07:30 AM    | 75        | 35   | 3    | 3         | 116  | 54   | 34         | 68   | 165  | 98         | 230  | 41   | 3            |
| 07:45 AM    | 80        | 42   | 0    | 12        | 134  | 64   | 26         | 77   | 176  | 103        | 186  | 20   | 0            |
| Total       | 291       | 136  | 3    | 23        | 453  | 222  | 143        | 270  | 663  | 369        | 903  | 130  | 12           |
| 08:00 AM    | 24        | 34   | 1    | 18        | 103  | 58   | 37         | 60   | 167  | 128        | 152  | 13   | 7            |
| 08:15 AM    | 50        | 32   | 1    | 9         | 66   | 45   | 18         | 42   | 111  | 116        | 187  | 22   | 2            |
| Grand Total | 431       | 229  | 6    | 61        | 727  | 429  | 247        | 437  | 54   | 802        | 162  | 204  | 25           |
| Apprch %    | 59.3      | 31.5 | 0.8  | 8.4       | 36.8 | 21.2 | 37.4       | 4.6  | 17.6 | 30.2       | 61.1 | 7.7  | 0.9          |
| Total %     | 6.5       | 3.5  | 0.1  | 0.9       | 11   | 6.5  | 3.7        | 6.6  | 0.8  | 12.1       | 24.5 | 3.1  | 0.4          |

Groups Printed - Unshiftd

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Honolulu, HI 96817-5031

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File Name : AM\_University Ave - Dole St  
Site Code : 00000000  
Start Date : 4/30/2015  
Page No : 1

| Start Time  | From North |      |      | From South |      |      | From East |      |      | From West |       |      | UH CROSSWALK |
|-------------|------------|------|------|------------|------|------|-----------|------|------|-----------|-------|------|--------------|
|             | Right      | Thru | Left | Right      | Thru | Left | Right     | Thru | Left | Right     | Thru  | Left |              |
| 06:30 AM    | 1          | 114  | 29   | 1          | 271  | 1    | 114       | 29   | 1    | 145       | 346   | 1289 | 1            |
| 06:45 AM    | 2          | 159  | 37   | 3          | 341  | 2    | 159       | 37   | 3    | 201       | 756   | 1896 | 2            |
| 07:00 AM    | 3          | 229  | 53   | 3          | 364  | 3    | 229       | 53   | 3    | 286       | 875   | 2191 | 3            |
| 07:15 AM    | 4          | 283  | 44   | 4          | 369  | 4    | 283       | 44   | 4    | 336       | 1005  | 2477 | 4            |
| 07:30 AM    | 6          | 278  | 62   | 6          | 372  | 6    | 278       | 62   | 6    | 348       | 1001  | 2777 | 6            |
| 07:45 AM    | 2          | 228  | 42   | 2          | 309  | 2    | 228       | 42   | 2    | 277       | 896   | 2147 | 2            |
| Total       | 15         | 1018 | 201  | 15         | 1414 | 15   | 1018      | 201  | 15   | 1247      | 3777  | 9630 | 15           |
| 08:00 AM    | 7          | 205  | 45   | 7          | 300  | 7    | 205       | 45   | 7    | 262       | 832   | 2022 | 7            |
| 08:15 AM    | 6          | 167  | 52   | 6          | 257  | 6    | 167       | 52   | 6    | 228       | 732   | 1832 | 6            |
| Grand Total | 31         | 1663 | 364  | 25         | 2653 | 31   | 1663      | 364  | 25   | 2083      | 6630  | 314  | 0.4          |
| Apprch %    | 1.5        | 79.8 | 17.5 | 1.2        | 75.2 | 1.5  | 79.8      | 17.5 | 1.2  | 75.2      | 20.83 | 31.4 | 0.4          |
| Total %     | 0.5        | 25.1 | 5.5  | 0.4        | 40   | 0.5  | 25.1      | 5.5  | 0.4  | 31.4      | 66.30 | 31.4 | 0.4          |

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File Name : GAME\_Law School Dwy - Dole St  
Site Code : 00000000  
Start Date : 4/25/2015  
Page No : 1

| Start Time  | Eastbound |      |       | Westbound |      |       | Northbound |      |       | Southbound |      |       | Inc. Total |
|-------------|-----------|------|-------|-----------|------|-------|------------|------|-------|------------|------|-------|------------|
|             | Left      | Thru | Right | Left      | Thru | Right | Left       | Thru | Right | Left       | Thru | Right |            |
| 08:15 PM    | 0         | 0    | 0     | 0         | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0          |
| 08:45 PM    | 0         | 0    | 0     | 0         | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0          |
| 09:00 PM    | 0         | 0    | 0     | 0         | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0          |
| 09:15 PM    | 0         | 0    | 0     | 0         | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0          |
| 09:30 PM    | 0         | 0    | 0     | 0         | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0          |
| 09:45 PM    | 0         | 115  | 0     | 0         | 64   | 0     | 0          | 5    | 0     | 125        | 0    | 0     | 307        |
| Total       | 0         | 113  | 0     | 0         | 64   | 0     | 0          | 5    | 0     | 125        | 0    | 0     | 307        |
| 10:00 PM    | 0         | 140  | 0     | 0         | 108  | 0     | 0          | 0    | 0     | 164        | 0    | 0     | 412        |
| 10:15 PM    | 0         | 120  | 0     | 0         | 114  | 0     | 0          | 0    | 0     | 81         | 0    | 0     | 315        |
| 10:30 PM    | 0         | 91   | 0     | 0         | 80   | 0     | 0          | 7    | 0     | 1          | 0    | 0     | 179        |
| Grand Total | 0         | 464  | 0     | 0         | 366  | 0     | 0          | 12   | 0     | 371        | 0    | 0     | 1213       |
| Approch %   | 0         | 100  | 0     | 0         | 100  | 0     | 0          | 3.1  | 0     | 96.9       | 0    | 0     | 0          |
| Total %     | 0         | 38.3 | 0     | 0         | 30.2 | 0     | 0          | 1    | 0     | 30.6       | 0    | 0     | 0          |

Groups Printed- Unshifed

File Name : AM\_University Ave - Dole St  
Site Code : 00000000  
Start Date : 4/30/2015  
Page No : 2

# Austin Soatumi & Associates

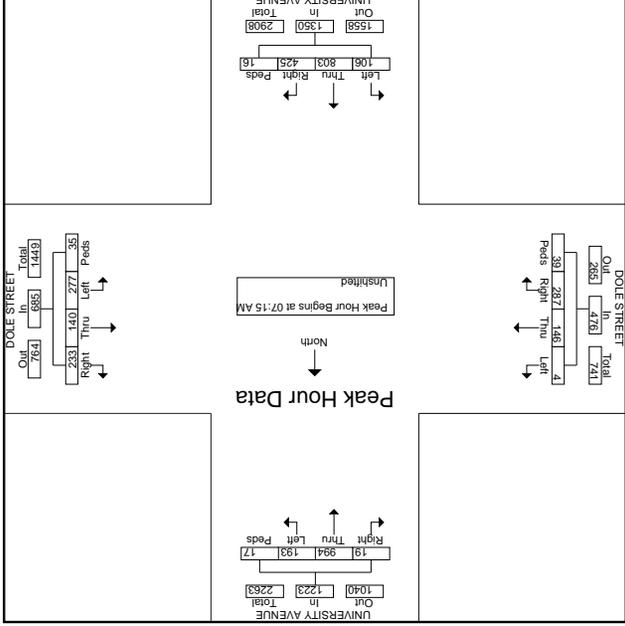
501 Sumner Street, Suite 521  
Honolulu, HI 96817-5031

Phone: (808) 533-3646 Fax: (808) 526-1267

| Start Time   | From West |      |      | From East |      |      | From South |      |      | From North |      |      | App. Total | Inc. Total |      |
|--------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|------|------------|------------|------|
|              | Right     | Thru | Left | Right     | Thru | Left | Right      | Thru | Left | Right      | Thru | Left |            |            |      |
| 07:15 AM     | 82        | 35   | 0    | 6         | 125  | 57   | 43         | 72   | 5    | 177        | 96   | 235  | 32         | 6          | 369  |
| 07:30 AM     | 75        | 35   | 3    | 3         | 116  | 54   | 34         | 68   | 9    | 165        | 98   | 230  | 41         | 3          | 372  |
| 07:45 AM     | 80        | 42   | 0    | 12        | 134  | 64   | 26         | 77   | 9    | 176        | 103  | 186  | 20         | 0          | 309  |
| 08:00 AM     | 50        | 34   | 1    | 18        | 103  | 58   | 37         | 60   | 12   | 167        | 128  | 152  | 13         | 7          | 300  |
| Total Volume | 287       | 146  | 4    | 39        | 476  | 233  | 140        | 277  | 35   | 685        | 425  | 803  | 106        | 16         | 1350 |
| % App. Total | 60.3      | 30.7 | 0.8  | 8.2       | 40.4 | 20.4 | 8.14       | 8.99 | 7.29 | 14.9       | 9.54 | 17.9 | 2.2        | 0.3        | 29.7 |
| PHE          | 875       | 869  | 333  | 542       | 888  | 910  | 814        | 899  | 968  | 968        | 830  | 854  | 646        | 571        | 907  |

Peak Hour Analysis from 07:15 AM to 08:00 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM



| Start Time   | From West |      |      | From East |      |      | From South |      |      | From North |      |      | App. Total | Inc. Total |      |
|--------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|------|------------|------------|------|
|              | Right     | Thru | Left | Right     | Thru | Left | Right      | Thru | Left | Right      | Thru | Left |            |            |      |
| 07:15 AM     | 82        | 35   | 0    | 6         | 125  | 57   | 43         | 72   | 5    | 177        | 96   | 235  | 32         | 6          | 369  |
| 07:30 AM     | 75        | 35   | 3    | 3         | 116  | 54   | 34         | 68   | 9    | 165        | 98   | 230  | 41         | 3          | 372  |
| 07:45 AM     | 80        | 42   | 0    | 12        | 134  | 64   | 26         | 77   | 9    | 176        | 103  | 186  | 20         | 0          | 309  |
| 08:00 AM     | 50        | 34   | 1    | 18        | 103  | 58   | 37         | 60   | 12   | 167        | 128  | 152  | 13         | 7          | 300  |
| Total Volume | 287       | 146  | 4    | 39        | 476  | 233  | 140        | 277  | 35   | 685        | 425  | 803  | 106        | 16         | 1350 |
| % App. Total | 60.3      | 30.7 | 0.8  | 8.2       | 40.4 | 20.4 | 8.14       | 8.99 | 7.29 | 14.9       | 9.54 | 17.9 | 2.2        | 0.3        | 29.7 |
| PHE          | 875       | 869  | 333  | 542       | 888  | 910  | 814        | 899  | 968  | 968        | 830  | 854  | 646        | 571        | 907  |

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File Name : GAME\_Law School Dwy - Dole St  
Site Code : 00000000  
Start Date : 4/25/2015  
Page No : 2

| Start Time   | Eastbound |      |       | Westbound |      |       | Northbound |      |       | Southbound |      |       |
|--------------|-----------|------|-------|-----------|------|-------|------------|------|-------|------------|------|-------|
|              | Left      | Thru | Right | Left      | Thru | Right | Left       | Thru | Right | Left       | Thru | Right |
| 09:45 PM     | 0         | 113  | 0     | 0         | 64   | 0     | 0          | 0    | 0     | 0          | 0    | 0     |
| 10:00 PM     | 0         | 140  | 0     | 0         | 108  | 0     | 0          | 0    | 0     | 0          | 0    | 0     |
| 10:15 PM     | 0         | 120  | 0     | 0         | 114  | 0     | 0          | 0    | 0     | 0          | 0    | 0     |
| 10:30 PM     | 0         | 91   | 0     | 0         | 80   | 0     | 0          | 0    | 0     | 0          | 0    | 0     |
| Total Volume | 0         | 464  | 0     | 0         | 366  | 12    | 0          | 371  | 0     | 383        | 0    | 0     |
| % App. Total | 0         | 100  | 0     | 0         | 100  | 3.1   | 0          | 96.9 | 0     | 100        | 0.0  | 0.0   |
| PHF          | .000      | .829 | .000  | .000      | .829 | .000  | .000       | .803 | .000  | .803       | .000 | .000  |

Peak Hour Analysis From 08:15 PM to 10:30 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 09:45 PM

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:45 PM   | 0    | 67   | 2     | 0    | 69         |
| Total      | 0    | 67   | 2     | 0    | 69         |

| Start Time | Left | Thru | Right | Peds | App. Total |
|------------|------|------|-------|------|------------|
| 08:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 08:45 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:00 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:15 PM   | 0    | 0    | 0     | 0    | 0          |
| 09:30 PM   | 0    | 0    | 0     | 0    | 0          |

# Austin Soatumi & Associates

501 Sumner Street, Suite 521  
Honolulu, HI 96817-5031

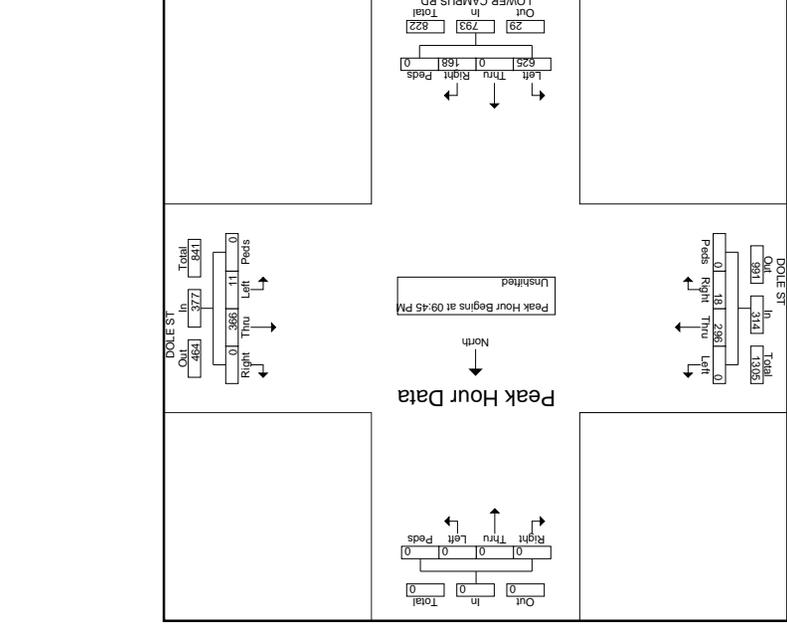
Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : GAME\_Lower Campus Rd - Dole St  
 Site Code : 00000000  
 Start Date : 4/25/2015  
 Page No : 2

| Start Time   | Eastbound |      |       | Westbound |      |       | LOWER CAMPUS RD Northbound |      |       | LOWER CAMPUS RD Southbound |      |       |
|--------------|-----------|------|-------|-----------|------|-------|----------------------------|------|-------|----------------------------|------|-------|
|              | Left      | Thru | Right | Left      | Thru | Right | Left                       | Thru | Right | Left                       | Thru | Right |
| 09:45 PM     | 0         | 67   | 2     | 0         | 69   | 3     | 0                          | 67   | 0     | 0                          | 0    | 0     |
| 10:00 PM     | 0         | 82   | 4     | 0         | 86   | 1     | 0                          | 109  | 0     | 58                         | 0    | 0     |
| 10:15 PM     | 0         | 78   | 4     | 0         | 86   | 1     | 0                          | 115  | 0     | 42                         | 0    | 0     |
| 10:30 PM     | 0         | 69   | 4     | 0         | 73   | 6     | 0                          | 61   | 0     | 22                         | 0    | 0     |
| Total Volume | 0         | 296  | 18    | 0         | 314  | 11    | 0                          | 377  | 0     | 168                        | 0    | 0     |
| % App. Total | 0         | 94.3 | 5.7   | 0         | 97.1 | 2.9   | 0                          | 78.8 | 0     | 21.2                       | 0    | 0     |
| PHF          | .000      | .902 | .563  | .000      | .913 | .438  | .803                       | .000 | .000  | .765                       | .000 | .000  |
| Total        | .000      | .902 | .563  | .000      | .913 | .438  | .803                       | .000 | .000  | .765                       | .000 | .000  |

Peak Hour Analysis from 08:15 PM to 10:30 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 09:45 PM



# Austin Soatumi & Associates

501 Sumner Street, Suite 521  
Honolulu, HI 96817-5031

Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : PM\_Lower Campus Rd - Dole St  
 Site Code : 00000000  
 Start Date : 4/30/2015  
 Page No : 1

| Start Time  | Eastbound |      |       | Westbound |      |       | LOWER CAMPUS ROAD Northbound |      |       | LOWER CAMPUS ROAD Southbound |      |       |
|-------------|-----------|------|-------|-----------|------|-------|------------------------------|------|-------|------------------------------|------|-------|
|             | Left      | Thru | Right | Left      | Thru | Right | Left                         | Thru | Right | Left                         | Thru | Right |
| 03:30 PM    | 0         | 174  | 25    | 0         | 4    | 89    | 0                            | 32   | 59    | 0                            | 24   | 28    |
| 03:45 PM    | 0         | 157  | 33    | 0         | 4    | 111   | 0                            | 30   | 51    | 0                            | 23   | 19    |
| Total       | 0         | 331  | 58    | 0         | 8    | 200   | 0                            | 62   | 110   | 0                            | 47   | 47    |
| 04:00 PM    | 0         | 172  | 19    | 0         | 8    | 106   | 0                            | 35   | 51    | 0                            | 41   | 18    |
| 04:15 PM    | 0         | 171  | 30    | 0         | 12   | 113   | 0                            | 31   | 83    | 0                            | 43   | 31    |
| 04:30 PM    | 0         | 145  | 33    | 0         | 4    | 111   | 0                            | 63   | 71    | 0                            | 54   | 26    |
| 04:45 PM    | 0         | 182  | 24    | 0         | 5    | 111   | 0                            | 32   | 70    | 0                            | 51   | 10    |
| Total       | 0         | 670  | 106   | 0         | 29   | 441   | 0                            | 161  | 275   | 0                            | 189  | 85    |
| 05:00 PM    | 0         | 158  | 21    | 0         | 1    | 110   | 0                            | 60   | 63    | 0                            | 27   | 18    |
| 05:15 PM    | 0         | 143  | 28    | 0         | 7    | 126   | 0                            | 49   | 63    | 0                            | 38   | 18    |
| Grand Total | 0         | 1302 | 213   | 0         | 45   | 877   | 0                            | 332  | 511   | 0                            | 307  | 171   |
| Approch %   | 0         | 85.9 | 14.1  | 0         | 3.6  | 69.9  | 0                            | 26.5 | 52.1  | 0                            | 30.7 | 17.1  |
| Total %     | 0         | 34.7 | 5.7   | 0         | 1.2  | 23.4  | 0                            | 8.9  | 13.6  | 0                            | 8    | 4.5   |
| In. Total   | 0         | 3749 | 0     | 0         | 0    | 0     | 0                            | 0    | 0     | 0                            | 0    | 0     |

Groups Printed: Unshiftable

# Austin Soatumi & Associates

501 Sumner Street, Suite 521  
Honolulu, HI 96817-5031

Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : PM\_UH Crosswalk - Dole St  
Site Code : 00000000  
Start Date : 4/30/2015  
Page No : 1

Groups Printed- Unshifed

| Start Time  | Eastbound |      |       | Westbound |      |       | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Total | Apprch % | Grand Total | Total % |   |
|-------------|-----------|------|-------|-----------|------|-------|------|------|-------|------|------|------|-------|------|-------|----------|-------------|---------|---|
|             | Left      | Thru | Right | Left      | Thru | Right |      |      |       |      |      |      |       |      |       |          |             |         |   |
| 03:30 PM    | 0         | 202  | 0     | 0         | 151  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 170         | 0       | 0 |
| 03:45 PM    | 0         | 189  | 0     | 0         | 148  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 148         | 0       | 0 |
| Total       | 0         | 391  | 0     | 0         | 299  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 805         | 0       | 0 |
| 04:00 PM    | 0         | 208  | 0     | 0         | 163  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 208         | 0       | 0 |
| 04:15 PM    | 0         | 220  | 0     | 0         | 229  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 220         | 0       | 0 |
| 04:30 PM    | 0         | 201  | 0     | 0         | 160  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 201         | 0       | 0 |
| 04:45 PM    | 0         | 241  | 0     | 0         | 253  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 241         | 0       | 0 |
| Total       | 0         | 870  | 0     | 0         | 805  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 870         | 0       | 0 |
| 05:00 PM    | 0         | 170  | 0     | 0         | 170  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 170         | 0       | 0 |
| 05:15 PM    | 0         | 187  | 0     | 0         | 144  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 187         | 0       | 0 |
| 05:30 PM    | 0         | 1642 | 0     | 0         | 1418 | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 1642        | 0       | 0 |
| Grand Total | 0         | 4633 | 0     | 0         | 4633 | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 4633        | 0       | 0 |
| In. Total   | 0         | 474  | 0     | 0         | 474  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 474         | 0       | 0 |
|             | 0         | 569  | 0     | 0         | 569  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 569         | 0       | 0 |
|             | 0         | 472  | 0     | 0         | 472  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 472         | 0       | 0 |
|             | 0         | 594  | 0     | 0         | 594  | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 594         | 0       | 0 |
|             | 0         | 2109 | 0     | 0         | 2109 | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 2109        | 0       | 0 |

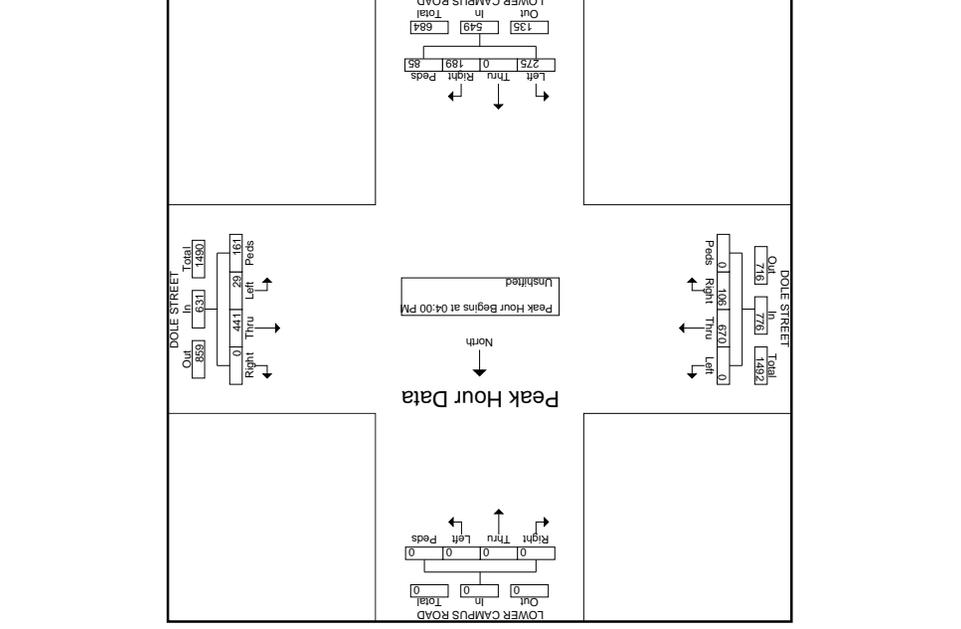
| Start Time                         | Eastbound |      |       | Westbound |      |       | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Total | Apprch % | Total Volume | % Apprch Total | PHF |   |
|------------------------------------|-----------|------|-------|-----------|------|-------|------|------|-------|------|------|------|-------|------|-------|----------|--------------|----------------|-----|---|
|                                    | Left      | Thru | Right | Left      | Thru | Right |      |      |       |      |      |      |       |      |       |          |              |                |     |   |
| 04:00 PM                           | 0         | 172  | 19    | 0         | 191  | 8     | 106  | 0    | 35    | 149  | 51   | 0    | 41    | 18   | 110   | 0        | 0            | 0              | 0   | 0 |
| 04:15 PM                           | 0         | 171  | 30    | 0         | 201  | 12    | 113  | 0    | 31    | 156  | 83   | 0    | 43    | 31   | 157   | 0        | 0            | 0              | 0   | 0 |
| 04:30 PM                           | 0         | 145  | 33    | 0         | 178  | 4     | 111  | 0    | 63    | 178  | 71   | 0    | 54    | 26   | 151   | 0        | 0            | 0              | 0   | 0 |
| 04:45 PM                           | 0         | 182  | 24    | 0         | 206  | 5     | 111  | 0    | 32    | 148  | 70   | 0    | 51    | 10   | 131   | 0        | 0            | 0              | 0   | 0 |
| Total                              | 0         | 670  | 106   | 0         | 776  | 29    | 441  | 0    | 161   | 631  | 275  | 0    | 189   | 85   | 549   | 0        | 0            | 0              | 0   | 0 |
| 04:45 PM to 04:00 PM - Peak 1 of 1 | 0         | 863  | 137   | 0         | 999  | 46    | 699  | 0    | 255   | 501  | 0    | 344  | 155   | 874  | 0     | 0        | 0            | 0              | 0   | 0 |
| Apprch Total                       | 0         | 920  | 803   | 0         | 0    | 604   | 976  | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 0            | 0              | 0   | 0 |
| Total                              | 0         | 1956 | 0     | 0         | 1956 | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0    | 0     | 0        | 0            | 0              | 0   | 0 |

File Name : PM\_Lower Campus Rd - Dole St  
Site Code : 00000000  
Start Date : 4/30/2015  
Page No : 2

# Austin Soatumi & Associates

501 Sumner Street, Suite 521  
Honolulu, HI 96817-5031

Phone: (808) 533-3646 Fax: (808) 526-1267



**Austin Associates**

501 Sumner Street, Suite 521

Honolulu, HI 96817-5031

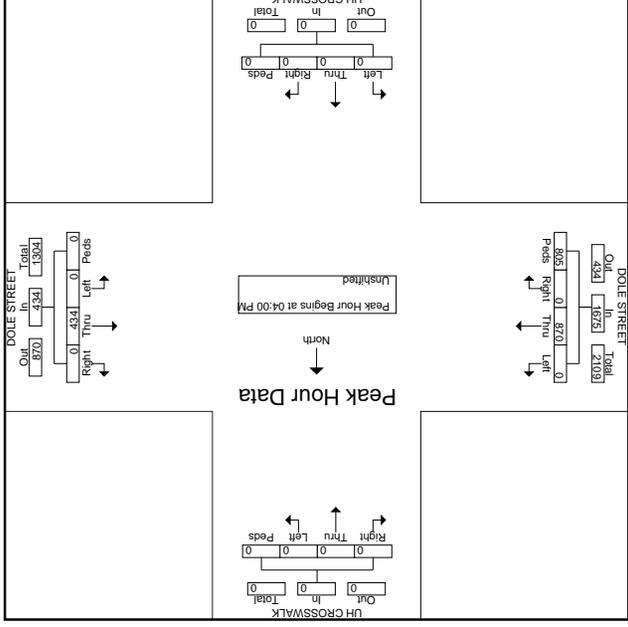
Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : PM\_UH Crosswalk - Dole St  
 Site Code : 00000000  
 Start Date : 4/30/2015  
 Page No : 2

| Start Time   | Eastbound |      |       | Westbound |      |       | Northbound |      |       | Southbound |      |       | In Total |
|--------------|-----------|------|-------|-----------|------|-------|------------|------|-------|------------|------|-------|----------|
|              | Left      | Thru | Right | Left      | Thru | Right | Left       | Thru | Right | Left       | Thru | Right |          |
| 04:00 PM     | 0         | 208  | 0     | 163       | 0    | 103   | 0          | 103  | 0     | 0          | 0    | 0     | 474      |
| 04:15 PM     | 0         | 220  | 0     | 229       | 0    | 120   | 0          | 120  | 0     | 0          | 0    | 0     | 569      |
| 04:30 PM     | 0         | 201  | 0     | 160       | 0    | 111   | 0          | 111  | 0     | 0          | 0    | 0     | 472      |
| 04:45 PM     | 0         | 241  | 0     | 253       | 0    | 100   | 0          | 100  | 0     | 0          | 0    | 0     | 594      |
| Total Volume | 0         | 870  | 0     | 805       | 0    | 434   | 0          | 434  | 0     | 0          | 0    | 0     | 2109     |
| % App. Total | 0         | 51.9 | 0     | 48.1      | 0    | 100   | 0          | 100  | 0     | 0          | 0    | 0     | 888      |
| PHF          | .000      | .000 | .000  | .795      | .000 | .848  | .000       | .904 | .000  | .904       | .000 | .000  | .000     |

Peak Hour Analysis from 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM



**Austin Associates**

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File Name : PM\_University Ave - Dole St  
 Site Code : 00000000  
 Start Date : 4/30/2015  
 Page No : 1

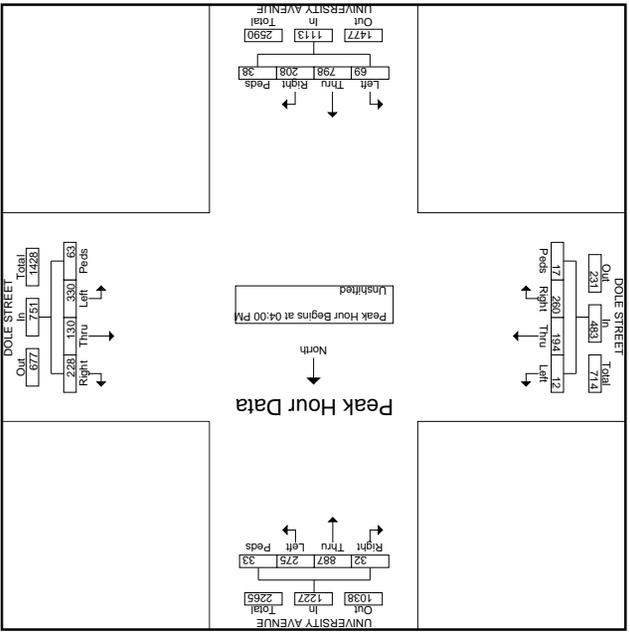
| Start Time  | Eastbound |      |       | Westbound |      |       | Northbound |      |       | Southbound |      |       | In Total |
|-------------|-----------|------|-------|-----------|------|-------|------------|------|-------|------------|------|-------|----------|
|             | Left      | Thru | Right | Left      | Thru | Right | Left       | Thru | Right | Left       | Thru | Right |          |
| 03:30 PM    | 2         | 43   | 83    | 2         | 73   | 27    | 19         | 234  | 57    | 8          | 67   | 281   | 4        |
| 03:45 PM    | 2         | 33   | 58    | 1         | 75   | 29    | 48         | 22   | 271   | 65         | 9    | 61    | 192      |
| Total       | 4         | 76   | 141   | 3         | 148  | 56    | 99         | 505  | 122   | 17         | 128  | 473   | 10       |
| 04:00 PM    | 1         | 52   | 74    | 4         | 76   | 24    | 51         | 172  | 47    | 12         | 66   | 222   | 3        |
| 04:15 PM    | 3         | 52   | 67    | 9         | 83   | 40    | 69         | 24   | 213   | 57         | 11   | 197   | 12       |
| 04:30 PM    | 3         | 57   | 63    | 1         | 82   | 32    | 39         | 21   | 18    | 24         | 48   | 72    | 7        |
| 04:45 PM    | 5         | 57   | 56    | 3         | 89   | 34    | 69         | 6    | 15    | 189        | 56   | 71    | 215      |
| Total       | 12        | 194  | 260   | 17        | 330  | 130   | 228        | 63   | 69    | 798        | 208  | 887   | 32       |
| 05:00 PM    | 3         | 33   | 53    | 2         | 93   | 25    | 57         | 8    | 13    | 210        | 64   | 55    | 220      |
| 05:15 PM    | 4         | 34   | 64    | 4         | 82   | 31    | 59         | 10   | 12    | 186        | 47   | 65    | 206      |
| Grand Total | 23        | 337  | 518   | 29        | 453  | 242   | 443        | 94   | 135   | 1699       | 441  | 523   | 1786     |
| Approch %   | 2.5       | 37.3 | 57.3  | 2.9       | 45.6 | 16.9  | 30.9       | 6.6  | 5.8   | 72.5       | 18.8 | 21.6  | 73.8     |
| Total %     | 0.3       | 4.7  | 7.3   | 0.4       | 9.2  | 3.4   | 6.2        | 1.3  | 1.9   | 23.9       | 6.2  | 7.4   | 25.2     |
| 854         | 11        | 6    | 6     | 11        | 1    | 7     | 1          | 11   | 220   | 206        | 7    | 1     | 11       |
| 826         | 60        | 2.5  | 8     | 3         | 3    | 3     | 3          | 3    | 3     | 3          | 3    | 3     | 3        |
| 854         | 33        | 33   | 33    | 33        | 33   | 33    | 33         | 33   | 33    | 33         | 33   | 33    | 33       |

Groups Printed- Unshifed

File Name : PM\_University Ave - Dole St  
 Site Code : 00000000  
 Start Date : 4/30/2015  
 Page No : 2

| Start Time   | DOLE STREET |      |       | DOLE STREET |      |       | DOLE STREET |      |       | UNIVERSITY AVENUE |      |       | App. Total | In Total |      |      |      |      |      |      |      |     |
|--------------|-------------|------|-------|-------------|------|-------|-------------|------|-------|-------------------|------|-------|------------|----------|------|------|------|------|------|------|------|-----|
|              | Left        | Thru | Right | Left        | Thru | Right | Left        | Thru | Right | Left              | Thru | Right |            |          |      |      |      |      |      |      |      |     |
| 04:00 PM     | 1           | 52   | 74    | 4           | 131  | 76    | 24          | 51   | 12    | 163               | 18   | 172   | 47         | 12       | 249  | 66   | 222  | 3    | 11   | 302  | 845  |     |
| 04:15 PM     | 3           | 52   | 67    | 9           | 131  | 83    | 40          | 69   | 24    | 216               | 18   | 213   | 57         | 11       | 299  | 66   | 197  | 12   | 11   | 286  | 932  |     |
| 04:30 PM     | 3           | 33   | 63    | 1           | 100  | 82    | 32          | 39   | 21    | 174               | 18   | 224   | 48         | 9        | 299  | 72   | 253  | 7    | 3    | 335  | 908  |     |
| 04:45 PM     | 5           | 57   | 56    | 3           | 121  | 89    | 34          | 69   | 6     | 198               | 15   | 189   | 56         | 6        | 266  | 71   | 215  | 10   | 8    | 304  | 889  |     |
| Total Volume | 12          | 194  | 260   | 17          | 483  | 330   | 130         | 228  | 84    | 751               | 69   | 798   | 208        | 38       | 1113 | 275  | 887  | 32   | 33   | 1227 | 3574 |     |
| % App. Total | 2.5         | 40.2 | 53.8  | 3.5         | 43.9 | 17.3  | 30.4        | 8.4  | 6.2   | 71.7              | 18.7 | 18.7  | 3.4        | 22.4     | 72.3 | 2.6  | 2.7  |      |      |      | 959  |     |
| PHF          | .600        | .851 | .878  | .472        | .922 | .927  | .813        | .826 | .869  | .958              | .891 | .912  | .792       | .931     | .955 | .876 | .667 | .750 | .916 |      |      | 959 |

Peak Hour for Entire Intersection Begins at 04:00 PM  
 Peak Hour Analysis from 04:00 PM to 04:45 PM - Peak 1 of 1



| Movement                    | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|-----------------------------|------|------|------|------|------|------|
| Lane Configurations         | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
| Traffic Volume (veh/h)      | 571  | 356  | 52   | 668  | 27   | 29   |
| Future Volume (veh/h)       | 571  | 356  | 52   | 668  | 27   | 29   |
| Number                      | 2    | 12   | 1    | 6    | 7    | 14   |
| Initial Q (Cb), veh         | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbt)         | 1.00 | 0.98 | 1.00 | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/n       | 1863 | 1863 | 1900 | 1863 | 1853 | 1853 |
| Adj Sat Flow Rate, veh/h    | 649  | 0    | 73   | 815  | 40   | 0    |
| Adj No. of Lanes            | 2    | 1    | 0    | 2    | 1    | 1    |
| Peak Hour Factor            | 0.88 | 0.68 | 0.71 | 0.82 | 0.67 | 0.56 |
| Percent Heavy Veh. %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Cap, veh/h                  | 1573 | 704  | 165  | 1369 | 588  | 525  |
| Arrive On Green             | 0.44 | 0.00 | 0.15 | 0.15 | 0.33 | 0.00 |
| Sat Flow, veh/h             | 3632 | 1583 | 162  | 3164 | 1765 | 1575 |
| Grp Volume(y), veh/h        | 649  | 436  | 40   | 40   | 0    | 0    |
| Grp Sat Flow(s), veh/h/n    | 1770 | 1583 | 1631 | 1610 | 1765 | 1575 |
| Q Serve(g-s), s             | 5.6  | 0.0  | 4.2  | 11.4 | 0.7  | 0.0  |
| Cycle Q Clear(g-c), s       | 5.6  | 0.0  | 11.0 | 11.4 | 0.7  | 0.0  |
| Prop In Lane                | 1.00 | 0.16 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h      | 1573 | 704  | 818  | 716  | 588  | 525  |
| V/C Ratio(x)                | 0.41 | 0.00 | 0.55 | 0.61 | 0.07 | 0.00 |
| Avail Cap(c-a), veh/h       | 1573 | 704  | 818  | 716  | 588  | 525  |
| HCM Platoon Ratio           | 1.00 | 0.33 | 1.00 | 0.33 | 1.00 | 1.00 |
| Upstream Filter(i)          | 0.61 | 0.00 | 0.88 | 0.88 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh    | 8.5  | 0.0  | 15.1 | 15.5 | 10.2 | 0.0  |
| Incr Delay (d2), s/veh      | 0.5  | 0.0  | 3.4  | 0.2  | 0.0  | 0.0  |
| Initial Q Delay(d3), s/veh  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfC(50%),veh/h     | 2.8  | 0.0  | 5.8  | 5.8  | 0.4  | 0.0  |
| Lngrp Delay(d), s/veh       | 9.0  | 0.0  | 17.5 | 18.9 | 10.5 | 0.0  |
| Lngrp LOS                   | A    | B    | B    | B    | B    | B    |
| Approach Vol, veh/h         | 649  | 888  | 40   | 40   | 0    | 0    |
| Approach Delay, s/veh       | 9.0  | 18.2 | 10.5 | 10.5 | 0    | 0    |
| Approach LOS                | A    | B    | B    | B    | B    | B    |
| Timer                       | 1    | 2    | 3    | 4    | 5    | 6    |
| Assigned Phs                | 2    | 4    | 4    | 4    | 4    | 6    |
| Phs Duration (G+Y+Rc), s    | 25.0 | 20.0 | 25.0 | 20.0 | 25.0 | 25.0 |
| Change Period (Y+Rc), s     | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Max Green Setting (Gmax), s | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Max Q Clear Time (g-c+1), s | 7.6  | 7.6  | 7.6  | 7.6  | 7.6  | 13.4 |
| Green Ext Time (p-c), s     | 10.5 | 0.0  | 10.5 | 0.0  | 10.5 | 5.8  |
| Intersection Summary        |      |      |      |      |      |      |
| HCM 2010 Ctrl Delay         | 14.2 |      |      |      |      |      |
| HCM 2010 LOS                | B    |      |      |      |      |      |

| Movement                    | EBL  | EBT  | EBR  | WBL  | WBT  | NBL  | NBT  | NBR  |
|-----------------------------|------|------|------|------|------|------|------|------|
| Lane Configurations         | EBL  | EBT  | EBR  | WBL  | WBT  | NBL  | NBT  | NBR  |
| Traffic Volume (veh/h)      | 4    | 146  | 287  | 277  | 140  | 233  | 106  | 803  |
| Future Volume (veh/h)       | 4    | 146  | 287  | 277  | 140  | 233  | 106  | 803  |
| Number                      | 3    | 8    | 18   | 7    | 4    | 14   | 1    | 6    |
| Initial Q (Cb), veh         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbt)         | 1.00 | 0.91 | 1.00 | 0.94 | 1.00 | 0.98 | 1.00 | 0.98 |
| Parking Bus, Adj            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.98 | 1.00 |
| Adj Sat Flow, veh/h/n       | 1910 | 1797 | 1910 | 1890 | 1853 | 1890 | 1752 | 1825 |
| Adj Sat Flow Rate, veh/h    | 12   | 170  | 73   | 322  | 177  | 225  | 1122 | 147  |
| Adj No. of Lanes            | 0    | 2    | 0    | 2    | 0    | 1    | 3    | 1    |
| Peak Hour Factor            | 0.33 | 0.86 | 0.76 | 0.86 | 0.79 | 0.81 | 0.72 | 0.93 |
| Percent Heavy Veh. %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Cap, veh/h                  | 24   | 339  | 146  | 346  | 200  | 264  | 169  | 1634 |
| Arrive On Green             | 0.15 | 0.15 | 0.24 | 0.24 | 0.24 | 0.10 | 0.30 | 0.30 |
| Sat Flow, veh/h             | 155  | 2201 | 950  | 1436 | 830  | 1095 | 1669 | 5476 |
| Grp Volume(y), veh/h        | 139  | 0    | 116  | 399  | 0    | 325  | 147  | 1122 |
| Grp Sat Flow(s), veh/h/n    | 1789 | 0    | 1517 | 1782 | 0    | 1580 | 1669 | 1825 |
| Q Serve(g-s), s             | 10.0 | 0.0  | 9.9  | 30.9 | 0.0  | 27.7 | 12.2 | 25.5 |
| Cycle Q Clear(g-c), s       | 10.0 | 0.0  | 9.9  | 30.9 | 0.0  | 27.7 | 12.2 | 25.5 |
| Prop In Lane                | 0.09 | 0.63 | 0.81 | 0.69 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h      | 275  | 0    | 233  | 429  | 0    | 380  | 169  | 1634 |
| V/C Ratio(x)                | 0.50 | 0.00 | 0.50 | 0.93 | 0.00 | 0.85 | 0.87 | 0.69 |
| Avail Cap(c-a), veh/h       | 381  | 0    | 333  | 442  | 0    | 392  | 237  | 1748 |
| HCM Platoon Ratio           | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(i)          | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh    | 54.7 | 0.0  | 54.7 | 52.4 | 0.0  | 51.2 | 62.4 | 43.7 |
| Incr Delay (d2), s/veh      | 1.4  | 0.0  | 1.6  | 26.2 | 0.0  | 16.2 | 16.7 | 1.1  |
| Initial Q Delay(d3), s/veh  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfC(50%),veh/h     | 5.1  | 0.0  | 4.3  | 18.3 | 0.0  | 13.8 | 6.4  | 13.0 |
| Lngrp Delay(d), s/veh       | 55.1 | 0.0  | 56.3 | 78.6 | 0.0  | 67.4 | 79.1 | 44.7 |
| Lngrp LOS                   | E    | E    | E    | E    | E    | E    | E    | D    |
| Approach Vol, veh/h         | 255  | 724  | 1614 | 425  | 47.6 | 1614 | 73.5 | 42.5 |
| Approach Delay, s/veh       | 56.2 | 73.5 | 42.5 | 47.6 | D    | D    | D    | D    |
| Approach LOS                | E    | E    | E    | E    | D    | D    | D    | D    |
| Timer                       | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    |
| Assigned Phs                | 1    | 2    | 4    | 5    | 6    | 8    | 8    | 8    |
| Phs Duration (G+Y+Rc), s    | 20.3 | 53.1 | 39.9 | 25.3 | 48.1 | 27.7 | 27.7 | 27.7 |
| Change Period (Y+Rc), s     | 6.0  | 6.0  | 6.0  | 6.0  | 6.0  | 6.0  | 6.0  | 6.0  |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 35.0 | 25.0 | 45.0 | 30.0 | 30.0 | 30.0 |
| Max Q Clear Time (g-c+1), s | 14.2 | 27.4 | 32.9 | 19.0 | 27.5 | 12.0 | 12.0 | 12.0 |
| Green Ext Time (p-c), s     | 0.1  | 18.0 | 1.0  | 0.3  | 14.6 | 1.4  | 1.4  | 1.4  |
| Intersection Summary        |      |      |      |      |      |      |      |      |
| HCM 2010 Ctrl Delay         | 50.9 |      |      |      |      |      |      |      |
| HCM 2010 LOS                | D    |      |      |      |      |      |      |      |
| Notes                       |      |      |      |      |      |      |      |      |



HCM 2010 Signalized Intersection Summary  
 2: Lower Campus & Dole St  
 Existing PM 9/30/2015

| Movement                    | EBT  | EBR  | WBT  | NBL  | NBR  |
|-----------------------------|------|------|------|------|------|
| Lane Configurations         | ↔    | ↔    | ↔    | ↔    | ↔    |
| Traffic Volume (veh/h)      | 670  | 106  | 29   | 441  | 189  |
| Future Volume (veh/h)       | 670  | 106  | 29   | 441  | 189  |
| Number                      | 2    | 12   | 1    | 6    | 7    |
| Initial Q (Cb), veh         | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)         | 1.00 | 0.98 | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/n       | 1863 | 1863 | 1900 | 1853 | 1853 |
| Adj Flow Rate, veh/h        | 705  | 0    | 40   | 459  | 331  |
| Adj No. of Lanes            | 2    | 1    | 0    | 2    | 1    |
| Peak Hour Factor            | 0.95 | 0.68 | 0.73 | 0.96 | 0.83 |
| Percent Heavy Veh. %        | 2    | 2    | 2    | 2    | 2    |
| Cap, veh/h                  | 1573 | 704  | 150  | 1396 | 588  |
| Arrive On Green             | 0.44 | 0.00 | 0.44 | 0.33 | 0.33 |
| Sat Flow, veh/h             | 3632 | 1583 | 129  | 3227 | 1765 |
| Grp Sat Flow(s), veh/h/n    | 1770 | 1583 | 1660 | 1610 | 1575 |
| Grp Volume(y), veh/h        | 705  | 0    | 259  | 240  | 331  |
| Prop In Lane                | 1.00 | 0.15 | 1.00 | 1.00 | 1.00 |
| Cycle Q Clear(g_c), s       | 6.2  | 0.0  | 4.0  | 4.4  | 6.9  |
| Q Serve(g_s), s             | 6.2  | 0.0  | 4.4  | 6.9  | 3.2  |
| Initial Q Delay(d3), s/veh  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackQ(50%), veh/h      | 3.0  | 0.0  | 2.2  | 3.9  | 1.6  |
| LnGrp Delay(d), s/veh       | 9.1  | 0.0  | 9.4  | 16.2 | 12.5 |
| LnGrp LOS                   | A    | A    | A    | B    | B    |
| Approach Vol, veh/h         | 705  | 499  | 484  |      |      |
| Approach LOS                | A    | A    | B    |      |      |
| Approach Delay, s/veh       | 9.1  | 9.2  | 15.0 |      |      |
| Timer                       | 1    | 2    | 3    | 4    | 5    |
| Assigned Phs                | 2    | 4    | 6    | 7    | 8    |
| Phs Duration (G+Y+Rc), s    | 25.0 | 20.0 | 25.0 |      |      |
| Change Period (Y+Rc), s     | 5.0  | 5.0  | 5.0  |      |      |
| Max Green Setting (Gmax), s | 20.0 | 15.0 | 20.0 |      |      |
| Max Q Clear Time (g_c+1), s | 8.2  | 8.9  | 6.4  |      |      |
| Green Ext Time (p_c), s     | 8.7  | 0.9  | 9.8  |      |      |
| Intersection Summary        |      |      |      |      |      |
| HCM 2010 Ctrl Delay         | 10.8 |      |      |      |      |
| HCM 2010 LOS                | B    |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3: Dole St & Crosswalk  
 Existing PM 9/30/2015

| Movement                          | EBL   | EBT  | WBR  | SBL  | SBR  |
|-----------------------------------|-------|------|------|------|------|
| Lane Configurations               | ↔     | ↔    | ↔    | ↔    | ↔    |
| Traffic Volume (vph)              | 0     | 870  | 434  | 0    | 0    |
| Future Volume (vph)               | 0     | 870  | 434  | 0    | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900 | 1900 |
| Lane Width                        | 10    | 10   | 12   | 12   | 12   |
| Grade (%)                         | 1%    | -1%  | 5.0  | 5.0  | 0%   |
| Total Lost Time (s)               | 5.0   | 5.0  | 0.95 | 0.95 | 1.00 |
| Lane Util. Factor                 | 0.95  | 0.95 | 1.00 | 1.00 | 1.00 |
| Fit                               | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Fit Protected                     | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot)                 | 3287  | 3320 | 3287 | 3320 | 3320 |
| Fit Permitted                     | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm)                 | 3287  | 3320 | 3287 | 3320 | 3320 |
| Peak-hour factor, PHF             | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)                   | 0     | 946  | 472  | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0     | 946  | 472  | 0    | 0    |
| Turn Type                         | NA    | NA   | NA   | NA   | NA   |
| Protected Phases                  | 2     | 6    |      |      |      |
| Permitted Phases                  |       |      |      |      |      |
| Actuated Green, G (s)             | 22.0  | 22.0 | 22.0 | 22.0 | 22.0 |
| Effective Green, g (s)            | 22.0  | 22.0 | 22.0 | 22.0 | 22.0 |
| Actuated g/C Ratio                | 0.43  | 0.43 | 0.43 | 0.43 | 0.43 |
| Clearance Time (s)                | 5.0   | 5.0  | 5.0  | 5.0  | 5.0  |
| Vehicle Extension (s)             | 5.0   | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Grp Cap (vph)                | 1417  | 1432 | 1417 | 1432 | 1432 |
| v/s Ratio Prot                    | 0.14  | 0.14 | 0.14 | 0.14 | 0.14 |
| v/s Ratio Perm                    | 0.67  | 0.33 | 0.67 | 0.33 | 0.33 |
| Uniform Delay, dt                 | 11.6  | 9.6  | 11.6 | 9.6  | 9.6  |
| Progression Factor                | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2             | 2.5   | 0.6  | 2.5  | 0.6  | 0.6  |
| Delay (s)                         | 14.1  | 10.2 | 14.1 | 10.2 | 10.2 |
| Level of Service                  | B     | B    | B    | B    | B    |
| Approach Delay (s)                | 14.1  | 10.2 | 14.1 | 10.2 | 10.2 |
| Approach LOS                      | B     | B    | B    | B    | B    |
| Intersection Summary              |       |      |      |      |      |
| HCM 2000 Control Delay            | 12.8  |      |      |      |      |
| HCM 2000 Volume to Capacity ratio | 0.35  |      |      |      |      |
| Sum of lost time (s)              | 51.0  |      |      |      |      |
| Intersection Capacity Utilization | 28.2% |      |      |      |      |
| Analysis Period (min)             | 15    |      |      |      |      |
| Description: 06:00 - all day      |       |      |      |      |      |
| c Critical Lane Group             |       |      |      |      |      |





HCM 2010 Signalized Intersection Summary  
 2: Lower Campus & Dole St  
 9/30/2015  
 Proposed PM

| Movement                    | EBT  | EBR  | WBT  | NBL  | NBR  |
|-----------------------------|------|------|------|------|------|
| Lane Configurations         | ↔    | ↔    | ↔    | ↔    | ↔    |
| Traffic Volume (veh/h)      | 685  | 115  | 40   | 430  | 325  |
| Future Volume (veh/h)       | 685  | 115  | 40   | 430  | 325  |
| Number                      | 2    | 12   | 6    | 7    | 14   |
| Initial Q (Cb), veh         | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pb1)         | 1.00 | 0.98 | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/n       | 1863 | 1863 | 1900 | 1853 | 1853 |
| Adj Flow Rate, veh/h        | 721  | 0    | 55   | 448  | 392  |
| Adj No. of Lanes            | 2    | 1    | 0    | 2    | 1    |
| Peak Hour Factor            | 0.95 | 0.68 | 0.73 | 0.96 | 0.83 |
| Percent Heavy Veh. %        | 2    | 2    | 2    | 2    | 2    |
| Cap, veh/h                  | 1573 | 704  | 186  | 1312 | 588  |
| Arrive On Green             | 0.44 | 0.00 | 0.44 | 0.33 | 0.33 |
| Sat Flow, veh/h             | 3632 | 1583 | 200  | 3036 | 1765 |
| Grp Sat Flow(s), veh/h/n    | 1770 | 1583 | 1541 | 1610 | 1765 |
| Grp Volume(y), veh/h        | 721  | 0    | 254  | 249  | 392  |
| Prop In Lane                | 1.00 | 0.22 | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h      | 1573 | 704  | 782  | 716  | 588  |
| V/C Ratio(x)                | 0.46 | 0.00 | 0.35 | 0.67 | 0.37 |
| Avail Cap(c_a), veh/h       | 1573 | 704  | 782  | 716  | 588  |
| HCM Platoon Ratio           | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(i)          | 0.40 | 0.00 | 0.95 | 0.95 | 1.00 |
| Uniform Delay (d), s/veh    | 8.7  | 0.0  | 8.0  | 8.2  | 12.9 |
| Initial Q Delay(d3), s/veh  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfC(50%),veh/h/n   | 3.2  | 0.0  | 2.2  | 2.3  | 5.1  |
| LnGrp Delay(d), s/veh       | 9.1  | 0.0  | 9.1  | 9.5  | 18.7 |
| LnGrp LOS                   | A    | A    | A    | B    | B    |
| Approach Vol, veh/h         | 721  | 503  | 587  |      |      |
| Approach LOS                | A    | A    | B    |      |      |
| Approach Delay, s/veh       | 9.1  | 17.0 | 9.3  |      |      |
| Timer                       | 1    | 2    | 3    | 4    | 5    |
| Assigned Phs                | 2    | 4    | 6    | 7    | 8    |
| Phs Duration (G+Y+Rc), s    | 25.0 | 20.0 | 25.0 |      |      |
| Change Period (Y+Rc), s     | 5.0  | 5.0  | 5.0  |      |      |
| Max Green Setting (Gmax), s | 20.0 | 15.0 | 20.0 |      |      |
| Max Q Clear Time (g_c+1), s | 8.4  | 10.6 | 6.6  |      |      |
| Green Ext Time (p_c), s     | 8.7  | 0.9  | 9.9  |      |      |
| Intersection Summary        |      |      |      |      |      |
| HCM 2010 Cntl Delay         | 11.7 |      |      |      |      |
| HCM 2010 LOS                | B    |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
 3: Dole St & Crosswalk  
 9/30/2015  
 Proposed PM

| Movement                          | EBL   | EBT  | WBR  | SBL  | SBR  |
|-----------------------------------|-------|------|------|------|------|
| Lane Configurations               | ↔     | ↔    | ↔    | ↔    | ↔    |
| Traffic Volume (vph)              | 0     | 900  | 445  | 0    | 0    |
| Future Volume (vph)               | 0     | 900  | 445  | 0    | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900 | 1900 |
| Lane Width                        | 10    | 10   | 12   | 12   | 12   |
| Grade (%)                         | 1%    | -1%  | 0%   |      |      |
| Total Lost Time (s)               | 5.0   | 5.0  | 5.0  |      |      |
| Lane Util. Factor                 | 0.95  | 0.95 | 1.00 |      |      |
| Frt                               | 1.00  | 1.00 | 1.00 |      |      |
| Fit Protected                     | 1.00  | 1.00 | 1.00 |      |      |
| Satd. Flow (prot)                 | 3287  | 3320 | 3287 |      |      |
| Fit Permitted                     | 1.00  | 1.00 | 1.00 |      |      |
| Satd. Flow (perm)                 | 3287  | 3320 | 3287 |      |      |
| Peak-hour factor, PHF             | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)                   | 0     | 978  | 484  | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0    | 0    |
| Lane Grp Flow (vph)               | 978   | 484  | 0    | 0    | 0    |
| Turn Type                         | NA    | NA   | NA   |      |      |
| Protected Phases                  | 2     | 6    |      |      |      |
| Permitted Phases                  |       |      |      |      |      |
| Actuated Green, G (s)             | 22.0  | 22.0 | 22.0 |      |      |
| Effective Green, g (s)            | 22.0  | 22.0 | 22.0 |      |      |
| Actuated g/C Ratio                | 0.43  | 0.43 | 0.43 |      |      |
| Clearance Time (s)                | 5.0   | 5.0  | 5.0  |      |      |
| Vehicle Extension (s)             | 5.0   | 5.0  | 5.0  |      |      |
| Lane Grp Cap (vph)                | 1417  | 1432 | 1417 |      |      |
| v/s Ratio Prot                    | 0.30  | 0.15 | 0.30 |      |      |
| v/s Ratio Perm                    | 0.69  | 0.34 | 0.69 |      |      |
| Uniform Delay, dt                 | 11.7  | 9.7  | 11.7 |      |      |
| Progression Factor                | 1.00  | 1.00 | 1.00 |      |      |
| Incremental Delay, d2             | 2.8   | 0.6  | 2.8  |      |      |
| Delay (s)                         | 14.5  | 10.3 | 14.5 |      |      |
| Level of Service                  | B     | B    | B    |      |      |
| Approach Delay (s)                | 14.5  | 10.3 | 14.5 |      |      |
| Approach LOS                      | B     | B    | B    |      |      |
| Intersection Summary              |       |      |      |      |      |
| HCM 2000 Control Delay            | 13.1  |      |      |      |      |
| HCM 2000 Volume to Capacity ratio | 0.36  |      |      |      |      |
| Sum of lost time (s)              | 51.0  |      |      |      |      |
| Intersection Capacity Utilization | 29.0% |      |      |      |      |
| ICU Level of Service              | A     |      |      |      |      |
| Analysis Period (min)             | 15    |      |      |      |      |
| Description: 06:00 - all day      |       |      |      |      |      |
| c Critical Lane Group             |       |      |      |      |      |

HCM 2010 Signalized Intersection Summary  
 1: University Ave & Dole St  
 10/6/2015



| Lane Configurations        |         | EBL   | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBR  |  |
|----------------------------|---------|---|------|------|------|------|------|------|------|------|------|------|--|
| Number                     | (veh/h) | 3   | 8    | 8    | 18   | 7    | 4    | 14   | 6    | 16   | 5    | 2    |  |
| Future Volume              | (veh/h) | 5   | 155  | 295  | 285  | 145  | 240  | 110  | 820  | 450  | 205  | 1010 |  |
| Traffic Volume             | (veh/h) | 5   | 155  | 295  | 285  | 145  | 240  | 110  | 820  | 450  | 205  | 1010 |  |
| Initial Q (Cb), veh        |         | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |  |
| Ped-Bike Adj(A-pb1)        |         | 1.00  | 0.92 | 1.00 | 0.93 | 1.00 | 0.93 | 1.00 | 0.98 | 1.00 | 0.98 | 1.00 |  |
| Parking Bus, Adj           |         | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 1.00 |  |
| Adj Sat Flow, veh/h        |         | 1910  | 1797 | 1853 | 1853 | 1853 | 1752 | 1825 | 1825 | 1815 | 1891 | 1928 |  |
| Adj Sat Flow Rate, veh/h   |         | 15  | 180  | 83   | 258  | 287  | 137  | 179  | 617  | 225  | 1122 | 27   |  |
| Adj No. of Lanes           |         | 0   | 2    | 0    | 1    | 1    | 1    | 1    | 2    | 2    | 1    | 3    |  |
| Peak Hour Factor           |         | 0.33  | 0.86 | 0.76 | 0.86 | 0.79 | 0.81 | 0.72 | 0.93 | 0.82 | 0.91 | 0.90 |  |
| Percent Heavy Veh. %       |         | 2   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |  |
| Cap, veh/h                 |         | 31  | 371  | 173  | 341  | 358  | 282  | 176  | 1128 | 1526 | 251  | 1806 |  |
| Arrive On Green            |         | 0.17  | 0.17 | 0.17 | 0.19 | 0.19 | 0.17 | 0.16 | 0.31 | 0.31 | 0.15 | 0.35 |  |
| Sat Flow, veh/h            |         | 177   | 2134 | 995  | 1765 | 1853 | 1461 | 1669 | 3651 | 3013 | 1729 | 5182 |  |
| Grp Volume(y), veh/h       |         | 151   | 0    | 127  | 258  | 287  | 137  | 179  | 617  | 225  | 745  | 404  |  |
| Grp Sat Flow(s), veh/h     |         | 1788  | 0    | 1518 | 1765 | 1853 | 1461 | 1669 | 1825 | 1506 | 1729 | 1721 |  |
| Grp Sat Flow(s), veh/h     |         | 1866  | 0    | 1518 | 1765 | 1853 | 1461 | 1669 | 1825 | 1506 | 1729 | 1721 |  |
| Cycle Q Clear(g.c), s      |         | 10.3  | 0.0  | 10.1 | 18.6 | 19.9 | 11.2 | 12.1 | 25.2 | 17.2 | 24.2 | 24.2 |  |
| Prop In Lane               |         | 0.10  | 0.66 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.07 |  |
| Lane Grp Cap(c), veh/h     |         | 311   | 0    | 264  | 341  | 358  | 282  | 176  | 1128 | 1526 | 251  | 1199 |  |
| Lane Grp Cap(c), veh/h     |         | 650   | 0    | 488  | 0.76 | 0.80 | 0.87 | 0.69 | 0.40 | 0.90 | 0.62 | 0.62 |  |
| V/C Ratio(x)               |         | 0.49  | 0.00 | 0.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |
| Avail Cap(c.a), veh/h      |         | 399   | 0    | 339  | 460  | 483  | 380  | 248  | 1604 | 321  | 1280 | 694  |  |
| HCM Platoon Ratio          |         | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Upstream Filter(i)         |         | 1.00  | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Uniform Delay (d), s/veh   |         | 50.1  | 0.0  | 50.0 | 51.2 | 51.7 | 48.3 | 59.2 | 40.8 | 20.9 | 56.5 | 36.4 |  |
| Incr Delay (d2), s/veh     |         | 1.2   | 0.0  | 1.3  | 4.9  | 6.8  | 1.3  | 15.7 | 1.5  | 0.2  | 22.3 | 0.8  |  |
| Initial Q Delay(d3), s/veh |         | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| %ile BackOfC(50%), veh/h   |         | 5.2   | 0.0  | 4.4  | 9.5  | 10.9 | 4.6  | 6.4  | 12.9 | 10.0 | 9.8  | 11.6 |  |
| %ile BackOfC(50%), veh/h   |         | 12.7  | 0.0  | 9.5  | 10.9 | 12.9 | 4.6  | 6.4  | 12.9 | 10.0 | 9.8  | 11.6 |  |
| Lngrp Delay(d), s/veh      |         | 51.3  | 0.0  | 51.4 | 56.1 | 58.6 | 49.6 | 74.9 | 42.3 | 21.1 | 78.8 | 37.2 |  |
| Lngrp LOS                  |         | D   | D    | D    | E    | E    | D    | D    | D    | C    | E    | D    |  |
| Approach Vol, veh/h        |         | 278   | 682  | 1549 | 1374 | 1374 | 1374 | 1374 | 1374 | 1374 | 1374 | 1374 |  |
| Approach Delay, s/veh      |         | 51.3  | 55.8 | 37.1 | 44.3 | 44.3 | 37.1 | 37.1 | 37.1 | 37.1 | 37.1 | 37.1 |  |
| Approach LOS               |         | D   | E    | D    | D    | D    | D    | D    | D    | D    | D    | D    |  |
| Intersection Summary       |         | HCM 2010 LOS: D<br>HCM 2010 Ctrl Delay: 43.9<br>Green Ext Time (p-c), s: 0.1, 18.1, 2.7, 0.3, 14.3, 1.6<br>Max Q Clear Time (g-c+1), s: 14.1, 26.2, 21.9, 19.2, 27.2, 12.3<br>Max Green Setting (Gmax), s: 20.0, 50.0, 35.0, 45.0, 30.0, 30.0<br>Change Period (Y+Rc), s: 6.0, 6.0, 6.0, 6.0, 6.0, 6.0<br>Phs Duration (G+Y+Rc), s: 20.2, 52.9, 32.0, 25.5, 47.5, 29.4<br>Assigned Phs: 1, 2, 4, 5, 6, 8<br>Timer: 1, 2, 3, 4, 5, 6, 7, 8 |      |      |      |      |      |      |      |      |      |      |  |

HCM 2010 Signalized Intersection Summary  
 2: Lower Campus Road & Dole St  
 10/6/2015



| Lane Configurations        |         | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  |  |
|----------------------------|---------|--|------|------|------|------|------|------|------|------|--|
| Number                     | (veh/h) | 2  | 12   | 1    | 6    | 7    | 14   | 1    | 14   | 1    |  |
| Future Volume              | (veh/h) | 550  | 420  | 65   | 680  | 30   | 35   | 30   | 35   | 35   |  |
| Traffic Volume             | (veh/h) | 550  | 420  | 65   | 680  | 30   | 35   | 30   | 35   | 35   |  |
| Initial Q (Cb), veh        |         | 0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |  |
| Ped-Bike Adj(A-pb1)        |         | 1.00   | 0.98 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Parking Bus, Adj           |         | 1.00   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Adj Sat Flow, veh/h        |         | 1863   | 1863 | 1900 | 1863 | 1853 | 1853 | 1853 | 1853 | 1853 |  |
| Adj Sat Flow Rate, veh/h   |         | 625  | 0    | 92   | 829  | 45   | 0    | 0    | 0    | 0    |  |
| Adj No. of Lanes           |         | 2  | 1    | 0    | 2    | 1    | 1    | 1    | 1    | 1    |  |
| Peak Hour Factor           |         | 0.88   | 0.68 | 0.71 | 0.82 | 0.67 | 0.56 | 0.71 | 0.90 | 0.71 |  |
| Percent Heavy Veh. %       |         | 2  | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |  |
| Cap, veh/h                 |         | 1656   | 704  | 190  | 1321 | 588  | 525  | 525  | 588  | 525  |  |
| Arrive On Green            |         | 0.44   | 0.00 | 0.15 | 0.15 | 0.33 | 0.00 | 0.00 | 0.33 | 0.00 |  |
| Sat Flow, veh/h            |         | 3725   | 1583 | 211  | 3056 | 1765 | 1575 | 1575 | 1765 | 1575 |  |
| Grp Volume(y), veh/h       |         | 625  | 0    | 461  | 460  | 45   | 0    | 0    | 461  | 460  |  |
| Grp Sat Flow(s), veh/h     |         | 1863   | 1583 | 1572 | 1610 | 1765 | 1575 | 1575 | 1610 | 1765 |  |
| Grp Sat Flow(s), veh/h     |         | 1863   | 1583 | 1572 | 1610 | 1765 | 1575 | 1575 | 1610 | 1765 |  |
| Cycle Q Clear(g.c), s      |         | 5.0  | 0.0  | 11.8 | 12.1 | 0.8  | 0.0  | 0.0  | 5.0  | 0.0  |  |
| Prop In Lane               |         | 1.00   | 0.20 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Lane Grp Cap(c), veh/h     |         | 1656   | 704  | 795  | 716  | 588  | 525  | 525  | 716  | 588  |  |
| Lane Grp Cap(c), veh/h     |         | 650  | 0    | 488  | 0.00 | 0.00 | 0.00 | 0.00 | 488  | 0.00 |  |
| V/C Ratio(x)               |         | 0.38   | 0.00 | 0.58 | 0.64 | 0.08 | 0.00 | 0.00 | 0.38 | 0.00 |  |
| Avail Cap(c.a), veh/h      |         | 1656   | 704  | 795  | 716  | 588  | 525  | 525  | 716  | 588  |  |
| HCM Platoon Ratio          |         | 1.00   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Upstream Filter(i)         |         | 1.00   | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |
| Uniform Delay (d), s/veh   |         | 8.3  | 0.0  | 15.4 | 15.8 | 10.3 | 0.0  | 0.0  | 8.3  | 0.0  |  |
| Incr Delay (d2), s/veh     |         | 0.4  | 0.0  | 2.7  | 3.9  | 0.3  | 0.0  | 0.0  | 0.4  | 0.0  |  |
| Initial Q Delay(d3), s/veh |         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |  |
| %ile BackOfC(50%), veh/h   |         | 2.6  | 0.0  | 6.0  | 6.1  | 0.4  | 0.0  | 0.0  | 2.6  | 0.0  |  |
| %ile BackOfC(50%), veh/h   |         | 8.7  | 0.0  | 18.1 | 19.7 | 10.5 | 0.0  | 0.0  | 8.7  | 0.0  |  |
| Lngrp Delay(d), s/veh      |         | 8.7  | 0.0  | 18.1 | 19.7 | 10.5 | 0.0  | 0.0  | 8.7  | 0.0  |  |
| Lngrp LOS                  |         | A  | D    | B    | B    | B    | D    | D    | A    | D    |  |
| Approach Vol, veh/h        |         | 625  | 921  | 45   | 921  | 45   | 0    | 0    | 625  | 921  |  |
| Approach Delay, s/veh      |         | 8.7  | 18.9 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 8.7  | 10.5 |  |
| Approach LOS               |         | A  | B    | B    | B    | B    | D    | D    | A    | B    |  |
| Intersection Summary       |         | HCM 2010 LOS: B<br>HCM 2010 Ctrl Delay: 14.7<br>Green Ext Time (p-c), s: 10.9, 0.1, 5.3, 5.3<br>Max Q Clear Time (g-c+1), s: 7.0, 2.8, 14.1, 14.1<br>Max Green Setting (Gmax), s: 20.0, 15.0, 20.0, 20.0<br>Change Period (Y+Rc), s: 5.0, 5.0, 5.0, 5.0<br>Phs Duration (G+Y+Rc), s: 25.0, 20.0, 25.0, 25.0<br>Assigned Phs: 2, 4, 4, 5, 6, 8<br>Timer: 1, 2, 3, 4, 5, 6, 7, 8 |      |      |      |      |      |      |      |      |  |

HCM Signalized Intersection Capacity Analysis  
 3: Dole St & Crosswalk  
 10/6/2015



| Movement               | EBL  | EBT  | WBT  | WBR  | NBT  | NBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|
| Lane Configurations    | EBL  | EBT  | WBT  | WBR  | NBT  | NBR  | SBL  | SBR  |
| Traffic Volume (veh/h) | 0    | 620  | 710  | 0    | 0    | 0    | 0    | 0    |
| Ideal Flow (vphpl)     | 0    | 620  | 710  | 0    | 0    | 0    | 0    | 0    |
| Future Volume (vph)    | 0    | 1900 | 1900 | 0    | 0    | 0    | 0    | 0    |
| Lane Width             | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   |
| Grade (%)              | 1%   | -1%  | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   |
| Total Lost time (s)    | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Util. Factor      | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Fit                    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fit Protected          | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot)      | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 |
| Fit Permitted          | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm)      | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 |
| Peak-hour factor, PHF  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)        | 0    | 674  | 772  | 0    | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 674  | 772  | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | NA   |
| Protected Phases       | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Actuated Green, G (s)  | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Effective Green, g (s) | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Actuated g/C Ratio     | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Clearance Time (s)     | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Vehicle Extension (s)  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Grp Cap (vph)     | 1606 | 1623 | 1623 | 1606 | 1606 | 1606 | 1606 | 1606 |
| vs Ratio Prot          | 0.21 | 0.23 | 0.23 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| vs Ratio Perm          | 0.42 | 0.48 | 0.48 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| Uniform Delay, d1      | 7.4  | 7.7  | 7.7  | 7.4  | 7.4  | 7.4  | 7.4  | 7.4  |
| Progression Factor     | 0.45 | 1.00 | 1.00 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| Incremental Delay, d2  | 0.7  | 1.0  | 1.0  | 0.7  | 0.7  | 0.7  | 0.7  | 0.7  |
| Delay (s)              | 4.0  | 8.7  | 8.7  | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  |
| Level of Service       | A    | A    | A    | A    | A    | A    | A    | A    |
| Approach Delay (s)     | 4.0  | 8.7  | 8.7  | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  |
| Approach LOS           | A    | A    | A    | A    | A    | A    | A    | A    |

Synchro 9 Report  
 Auslin, Tsutsumi & Associates, Inc.

| Movement               | EBL  | EBT  | WBT  | WBR  | NBT  | NBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|
| Lane Configurations    | EBL  | EBT  | WBT  | WBR  | NBT  | NBR  | SBL  | SBR  |
| Traffic Volume (veh/h) | 15   | 200  | 265  | 350  | 140  | 240  | 75   | 810  |
| Future Volume (veh/h)  | 15   | 200  | 265  | 350  | 140  | 240  | 75   | 810  |
| Number                 | 3    | 8    | 18   | 7    | 4    | 14   | 6    | 16   |
| Lane Width             | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   |
| Grade (%)              | 1%   | -1%  | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   |
| Total Lost time (s)    | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Util. Factor      | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Fit                    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fit Protected          | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot)      | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 |
| Fit Permitted          | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm)      | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 |
| Peak-hour factor, PHF  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)        | 0    | 674  | 772  | 0    | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 674  | 772  | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | NA   |
| Protected Phases       | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Actuated Green, G (s)  | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Effective Green, g (s) | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Actuated g/C Ratio     | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Clearance Time (s)     | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Vehicle Extension (s)  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Grp Cap (vph)     | 1606 | 1623 | 1623 | 1606 | 1606 | 1606 | 1606 | 1606 |
| vs Ratio Prot          | 0.21 | 0.23 | 0.23 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| vs Ratio Perm          | 0.42 | 0.48 | 0.48 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| Uniform Delay, d1      | 7.4  | 7.7  | 7.7  | 7.4  | 7.4  | 7.4  | 7.4  | 7.4  |
| Progression Factor     | 0.45 | 1.00 | 1.00 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| Incremental Delay, d2  | 0.7  | 1.0  | 1.0  | 0.7  | 0.7  | 0.7  | 0.7  | 0.7  |
| Delay (s)              | 4.0  | 8.7  | 8.7  | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  |
| Level of Service       | A    | A    | A    | A    | A    | A    | A    | A    |
| Approach Delay (s)     | 4.0  | 8.7  | 8.7  | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  |
| Approach LOS           | A    | A    | A    | A    | A    | A    | A    | A    |

Synchro 9 Report  
 Auslin, Tsutsumi & Associates, Inc.

HCM 2010 Signalized Intersection Summary  
 1: University Ave & Dole St  
 10/6/2015



| Movement               | EBL  | EBT  | WBT  | WBR  | NBT  | NBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|
| Lane Configurations    | EBL  | EBT  | WBT  | WBR  | NBT  | NBR  | SBL  | SBR  |
| Traffic Volume (veh/h) | 15   | 200  | 265  | 350  | 140  | 240  | 75   | 810  |
| Future Volume (veh/h)  | 15   | 200  | 265  | 350  | 140  | 240  | 75   | 810  |
| Number                 | 3    | 8    | 18   | 7    | 4    | 14   | 6    | 16   |
| Lane Width             | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   |
| Grade (%)              | 1%   | -1%  | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   |
| Total Lost time (s)    | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Util. Factor      | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Fit                    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fit Protected          | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot)      | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 |
| Fit Permitted          | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm)      | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 |
| Peak-hour factor, PHF  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)        | 0    | 674  | 772  | 0    | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 674  | 772  | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | NA   |
| Protected Phases       | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Actuated Green, G (s)  | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Effective Green, g (s) | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Actuated g/C Ratio     | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Clearance Time (s)     | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Vehicle Extension (s)  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Grp Cap (vph)     | 1606 | 1623 | 1623 | 1606 | 1606 | 1606 | 1606 | 1606 |
| vs Ratio Prot          | 0.21 | 0.23 | 0.23 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| vs Ratio Perm          | 0.42 | 0.48 | 0.48 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| Uniform Delay, d1      | 7.4  | 7.7  | 7.7  | 7.4  | 7.4  | 7.4  | 7.4  | 7.4  |
| Progression Factor     | 0.45 | 1.00 | 1.00 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| Incremental Delay, d2  | 0.7  | 1.0  | 1.0  | 0.7  | 0.7  | 0.7  | 0.7  | 0.7  |
| Delay (s)              | 4.0  | 8.7  | 8.7  | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  |
| Level of Service       | A    | A    | A    | A    | A    | A    | A    | A    |
| Approach Delay (s)     | 4.0  | 8.7  | 8.7  | 4.0  | 4.0  | 4.0  | 4.0  | 4.0  |
| Approach LOS           | A    | A    | A    | A    | A    | A    | A    | A    |

Synchro 9 Report  
 Auslin, Tsutsumi & Associates, Inc.

| Movement               | EBL  | EBT  | WBT  | WBR  | NBT  | NBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|------|------|
| Lane Configurations    | EBL  | EBT  | WBT  | WBR  | NBT  | NBR  | SBL  | SBR  |
| Traffic Volume (veh/h) | 15   | 200  | 265  | 350  | 140  | 240  | 75   | 810  |
| Future Volume (veh/h)  | 15   | 200  | 265  | 350  | 140  | 240  | 75   | 810  |
| Number                 | 3    | 8    | 18   | 7    | 4    | 14   | 6    | 16   |
| Lane Width             | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   |
| Grade (%)              | 1%   | -1%  | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   |
| Total Lost time (s)    | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Util. Factor      | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Fit                    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fit Protected          | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot)      | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 |
| Fit Permitted          | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm)      | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 | 3287 |
| Peak-hour factor, PHF  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)        | 0    | 674  | 772  | 0    | 0    | 0    | 0    | 0    |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 674  | 772  | 0    | 0    | 0    | 0    | 0    |
| Turn Type              | NA   |
| Protected Phases       | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Actuated Green, G (s)  | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Effective Green, g (s) | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Actuated g/C Ratio     | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Clearance Time (s)     | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Vehicle Extension (s)  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Grp Cap (vph)     | 1606 | 1623 | 1623 | 1606 | 1606 | 1606 | 1606 | 1606 |
| vs Ratio Prot          | 0.21 | 0.23 | 0.23 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| vs Ratio Perm          | 0.42 | 0.48 | 0.48 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| Uniform Delay, d1      | 7.4  | 7.7  | 7.7  | 7.4  | 7.4  | 7.4  | 7.4  | 7.4  |

HCM 2010 Signalized Intersection Summary  
 2: Lower Campus Road & Dole St  
 Proposed with PRU Mitigation PM  
 10/6/2015

| Movement                    | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|-----------------------------|------|------|------|------|------|------|
| Lane Configurations         | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
| Traffic Volume (veh/h)      | 685  | 115  | 40   | 430  | 325  | 225  |
| Future Volume (veh/h)       | 685  | 115  | 40   | 430  | 325  | 225  |
| Number                      | 2    | 12   | 6    | 7    | 14   |      |
| Initial Q (Cb), veh         | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)         | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 1.00 |
| Parking Bus, Adj            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/n       | 1863 | 1863 | 1900 | 1863 | 1853 | 1853 |
| Adj Flow Rate, veh/h        | 721  | 0    | 55   | 448  | 392  | 195  |
| Adj No. of Lanes            | 2    | 1    | 0    | 2    | 1    | 1    |
| Peak Hour Factor            | 0.95 | 0.68 | 0.73 | 0.96 | 0.83 | 0.87 |
| Percent Heavy Veh. %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Cap, veh/h                  | 1656 | 704  | 186  | 1312 | 588  | 525  |
| Arrive On Green             | 0.44 | 0.00 | 0.44 | 0.44 | 0.33 | 0.33 |
| Sat Flow, veh/h             | 3725 | 1583 | 200  | 3036 | 1765 | 1575 |
| Grp Sat Flow(s), veh/h/n    | 1863 | 1583 | 1541 | 1610 | 1765 | 1575 |
| Grp Volume(y), veh/h        | 721  | 0    | 254  | 249  | 392  | 195  |
| Prop In Lane                | 1.00 | 0.22 | 1.00 | 1.00 | 1.00 | 1.00 |
| Cycle Q Clear(g_c), s       | 6.0  | 4.0  | 4.0  | 4.6  | 8.6  | 4.2  |
| Q Serve(g_s), s             | 6.0  | 0.0  | 4.6  | 8.6  | 8.6  | 4.2  |
| Initial Q Delay(d3), s/veh  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackQ(50%), veh/h/n    | 3.1  | 0.0  | 2.2  | 2.3  | 5.1  | 2.1  |
| Lngrp Delay(d), s/veh       | 9.0  | 0.0  | 9.1  | 9.5  | 18.7 | 13.4 |
| Lngrp LOS                   | A    | A    | A    | A    | B    | B    |
| Approach Vol, veh/h         | 721  | 503  | 587  |      |      |      |
| Approach Delay, s/veh       | 9.0  | 9.3  | 17.0 |      |      |      |
| Approach LOS                | A    | A    | B    |      |      |      |
| Timer                       | 1    | 2    | 3    | 4    | 5    | 6    |
| Assigned Phs                | 2    | 4    | 4    | 6    | 7    | 8    |
| Phs Duration (G+Y+Rc), s    | 25.0 | 20.0 | 25.0 |      |      |      |
| Change Period (Y+Rc), s     | 5.0  | 5.0  | 5.0  |      |      |      |
| Max Green Setting (Gmax), s | 20.0 | 15.0 | 20.0 |      |      |      |
| Max Q Clear Time (g_c+1), s | 8.0  | 10.6 | 6.6  |      |      |      |
| Green Ext Time (p_c), s     | 9.0  | 0.9  | 9.9  |      |      |      |
| Intersection Summary        |      |      |      |      |      |      |
| HCM 2010 Cnt Delay          | 11.7 |      |      |      |      |      |
| HCM 2010 LOS                | B    |      |      |      |      |      |
| Notes                       |      |      |      |      |      |      |



HCM Signalized Intersection Capacity Analysis  
 3: Dole St & Crosswalk  
 Proposed with PRU Mitigation PM  
 10/6/2015

| Movement                          | EBL   | EBT  | WBR  | WBT  | SBL  | SBR  |
|-----------------------------------|-------|------|------|------|------|------|
| Lane Configurations               | EBL   | EBT  | WBR  | WBT  | SBL  | SBR  |
| Traffic Volume (vph)              | 0     | 900  | 445  | 0    | 0    | 0    |
| Future Volume (vph)               | 0     | 900  | 445  | 0    | 0    | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width                        | 12    | 10   | 12   | 12   | 12   | 12   |
| Grade (%)                         | 1%    | -1%  | 5.0  | 5.0  | 0%   |      |
| Total Lost time (s)               | 5.0   | 5.0  | 0.95 | 0.95 | 1.00 | 1.00 |
| Lane Util. Factor                 | 0.95  | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fit Protected                     | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (prot)                 | 3287  | 3320 | 3287 | 3320 | 1.00 | 1.00 |
| Fit Permitted                     | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Satd. Flow (perm)                 | 3287  | 3320 | 3287 | 3320 | 1.00 | 1.00 |
| Peak-hour factor, PHF             | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph)                   | 0     | 978  | 484  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 0     | 978  | 484  | 0    | 0    | 0    |
| Turn Type                         | NA    | NA   | NA   | NA   | NA   | NA   |
| Protected Phases                  | 2     | 6    |      |      |      |      |
| Permitted Phases                  | 2     | 6    |      |      |      |      |
| Actuated Green, G (s)             | 22.0  | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Effective Green, g (s)            | 22.0  | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Actuated g/C Ratio                | 0.43  | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 |
| Clearance Time (s)                | 5.0   | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Vehicle Extension (s)             | 5.0   | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Lane Grp Cap (vph)                | 1417  | 1432 |      |      |      |      |
| v/s Ratio Prot                    | 0.30  | 0.15 |      |      |      |      |
| v/s Ratio Perm                    | 0.69  | 0.34 |      |      |      |      |
| Uniform Delay, dt                 | 11.7  | 9.7  |      |      |      |      |
| Progression Factor                | 1.00  | 1.00 |      |      |      |      |
| Incremental Delay, d2             | 2.8   | 0.6  |      |      |      |      |
| Delay (s)                         | 14.5  | 10.3 |      |      |      |      |
| Level of Service                  | B     | B    |      |      |      |      |
| Approach Delay (s)                | 14.5  | 10.3 |      |      |      |      |
| Approach LOS                      | B     | B    |      |      |      |      |
| Intersection Summary              |       |      |      |      |      |      |
| HCM 2000 Control Delay            | 13.1  |      |      |      |      |      |
| HCM 2000 Volume to Capacity ratio | 0.36  |      |      |      |      |      |
| Sum of lost time (s)              | 51.0  |      |      |      |      |      |
| Intersection Capacity Utilization | 29.0% |      |      |      |      |      |
| ICU Level of Service              | A     |      |      |      |      |      |
| Analysis Period (min)             | 15    |      |      |      |      |      |
| Description: 06:00 - all day      |       |      |      |      |      |      |
| c Critical Lane Group             |       |      |      |      |      |      |





Appendix C

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PRE-CONSULTATION PERIOD COMMENTS AND  
RESPONSES





United States Department of the Interior



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

In Reply Refer To:
2014-TA-0446

RECEIVED

OCT 16 2014

Ms. Christine Ruotola
Principle Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

OCT 17 2014

GROUP 70 INTL

Subject: Technical Assistance for the Draft Environmental Assessment Regarding the Proposed Expansion of the Law School at the University of Hawaii at Manoa, Oahu

Dear Ms. Ruotola:

The U.S. Fish and Wildlife Service (Service) received your letter, dated September 19, 2014, in which you requested our comments on the proposed expansion of the University of Hawaii at Manoa's (UHM) Law School on the island of Oahu, as a pre-consultation for the associated Draft Environmental Assessment (DEA). The proposed project involves interior and exterior renovations to the two existing structures, in addition to both vertical and lateral expansion of these existing structures. The proposal also includes the construction of a new two-story structure to be erected adjacent to the existing structures on part of what is now a parking lot (Zone 17 parking lot). Bridges will be built to connect all three buildings. An indoor/outdoor café is also proposed, along with renovations to the existing pedestrian plaza and parking lot. A rooftop photovoltaic system, solar carport, or micro-wind turbine are considered for integration into the structural design. Landscaping suggestions include planting large monkey pod shade trees along Dole Street and Lower Campus Road and remodeling of existing planters and landscapes. This response is in accordance with sect 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.); and the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712), as amended (MBTA).

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity Mapping Program. There is no federally designated or proposed critical habitat, or National Wildlife Refuges, wilderness areas, or wildlife preserves in the vicinity of the proposed project. Species documented within the project vicinity include the federally endangered Hawaiian hoary bat (Eptesicus cinereus semotis, "ope ape a). Additionally, White fairy Terns (Gygis alba), protected under the MBTA, may occur in the project area. We offer the following recommendations to assist you with your project.



Ms. Christine Ruotola

The Hawaiian hoary bat roosts in both exotic and native woody vegetation and, while foraging, will leave young unattended in "nursery" trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the breeding season, there is a risk that young bats could inadvertently be harmed or killed. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15). Site clearing should be timed to avoid disturbance to Hawaiian hoary bats in the project area during pup rearing.

White fairy terns often nest in urban parks and residential areas from Hawaii Kai to Hickam Air Force Base. White fairy terns do not build nests, instead they lay a single egg directly on a ledge, tree branch, or other suitable location. The egg will hatch after approximately 35 days, after which it takes 45 days for the chick to be mature enough to leave the nest on its own. If tree trimming becomes part of your project, please examine all trees slated to be cut to determine if there are white fairy terns nesting in them. Similarly, we recommend examining any structures slated for demolition. Signs that white fairy terns are present include accumulation of white feathers or white droppings underneath the tree or structure.

Regarding the alternative energy options you presented, your environmental review should examine any potential impacts that may occur as a result of the use of the micro-wind turbine it could potentially have impacts to Hawaiian hoary bats, as well as migratory birds protected under the MBTA.

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

We appreciate your efforts to conserve endangered species. If you have any questions concerning these recommendations please contact Carrie Harrington, Fish and Wildlife Biologist (phone: 808-792-9400; fax: 808-792-9581).

Sincerely,

[Handwritten signature]

Aaron Nading
Assistant Field Supervisor
Oahu, Kauai, NWHI, and American Samoa



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OF COUNSEL

Ralph E. Portmore  
FACCP

October 27, 2014

Aaron Nadig, Assistant Field Supervisor  
U.S. Fish and Wildlife Service  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122  
Honolulu, HI 96850

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Mr. Nadig:

Thank you for your comment letter dated October 17, 2014 concerning the Draft Environmental Assessment (EA) for the Law School Master Plan project. The following responses are offered to your comments:

1. We acknowledge that there are no federally designated or proposed critical habitats or National Wildlife Refuges, wilderness areas, or wildlife preserves in the vicinity of the proposed project.
2. Per your recommendation, to minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet tall will not be disturbed, removed, or trimmed during the bat birthing and pup rearing season, from June 1-September 15. The University will time site clearing to avoid disturbing Hawaiian hoary bats in the project area during pup rearing.
3. If tree trimming is necessary for the Law School Master Plan, the University will first examine all trees to determine if there are any nesting White fairy Terns present.
4. The environmental review provided in the Draft EA will examine any potential impacts to Hawaiian hoary bats and migratory birds that could result from the use of micro-wind turbines.
5. The University is dedicated to integrating native plants throughout the campus landscape and acknowledges the risk that non-native invasive plants pose to Hawai'i's native ecosystems. A mix of native and non-native, non-invasive plants will be used for the landscaping of the Law School Master Plan project.

We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

NEIL ABERCROMBIE  
GOVERNOR



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

SEP 29 2014

RECEIVED

SEP 30 2014

GROUP 70 INTL

Ms. Christine Ruotola, Principal Planner  
Group 70 International  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813-4398

Dear Ms. Ruotola:

**Subject:** Draft Environmental Assessment (EA)  
Law School Master Plan, University of Hawai'i  
Mānoa Campus, Honolulu, Hawaii  
TMK: 2-8-29-001 (por.)

Thank you for the opportunity to provide comments for the subject project. This project does not impact any of the Department of Accounting and General Services' projects or existing facilities in this area, and we have no comments to offer at this time.

If you have any questions, your staff may call Mr. Alva Nakamura of the Planning Branch at 586-0488.

Sincerely,

JAMES K. KURATA  
Public Works Administrator

AN:mo

Dean H. Sait  
Comptroller  
Kula E. Zuhlke  
Deputy Comptroller



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Ralph E. Portmore  
FACP

October 8, 2014

James K. Kurata, Public Works Administrator  
State of Hawaii  
Department of Accounting and General Services  
P.O. Box 119  
Honolulu, HI 96810-0119

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Mr. Kurata:

Thank you for your comment letter dated September 29, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the Department of Accounting and General Services has no comments to offer at this time.

We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Christine Ruotola  
Principal Planner

NEIL ABERNOMBE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-6097

September 30, 2014

RECEIVED

OCT - 9 2014

GROUP 70 INTL

Ms. Christine Ruotola  
Principal Planner  
Group 70 International, Inc.  
925 Bethel Street, 5<sup>th</sup> Floor  
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

**Subject:** Law School Master Plan, University of Hawai'i Mānoa Campus  
Pre-Consultation for Draft Environmental Assessment  
TMK: (1) 2-8-029-001 (por.)

Our Department of Transportation's (DOT) comments on the subject project are as follows:

The Draft Environmental Assessment (DEA) should discuss and evaluate the project's contribution to the cumulative traffic impacts on State highways facilities in the area.

If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Very truly yours,

  
FORD N. FUCHIGAMI  
Interim Director of Transportation

FORD N. FUCHIGAMI  
INTERIM DIRECTOR

Deputy Directors  
RANDY GRUNE  
AUDREY MIDANO  
ROSS M. HIGASHI  
JADINE URSANI

IN REPLY REFER TO:

STP 8.1674



GROUP 70  
INTERNATIONAL

October 15, 2014

Mr. Ford N. Fuchigami  
Interim Director of Transportation  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, HI 96813-5097

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Ralph E. Portmore  
FAICP

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawaii Manoa Campus  
(Manoa Valley, Honolulu, Hawaii)  
TMK: 2-8-29-001 (por.)

Dear Mr. Fuchigami:

Thank you for your comment letter dated September 30, 2014 concerning the Pre-Consultation for Chapter 343, Hawaii Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

The Draft EA will discuss and evaluate the project's contribution to the cumulative traffic impacts on State highways facilities in the area.

We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,  
GROUP 70 INTERNATIONAL, INC.

*Christine Mendes Ruotola*  
Christine Mendes Ruotola, AICP, LEED AP  
Principal

NEIL ABERCROMBIE  
GOVERNOR



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

October 1, 2014

RECEIVED

Refer to 14-0601

Ms. Christine Ruotola  
Group 70 International, Inc.  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813-4307

OCT - 2 2014

GROUP 70 INTL

Dear Ms. Ruotola:

**Subject:** Pre-Consultation for Draft Environmental Assessment (EA)  
Law School Master Plan, University of Hawaii Manoa Campus  
(Manoa Valley, Honolulu, Hawaii) TMK No: 2-8-29-001 (por.)

Thank you for your letter dated September 19, 2014 requesting that Department of Human Services' (DHS) review and comment on the project information summary and overview of the proposed action.

The DHS has reviewed the project information summary and overview and has no comment at this time of the proposed Law School Master Plan.

If you have any questions or need further information, please contact Ms. Jill Artzumi, Child Care Program Specialist, at (808) 586-5240.

Sincerely,

*Scott Nakasone*  
Scott Nakasone  
Assistant Division Administrator

c: Patricia McManaman, Director

PATRICIA MCMANAMAN  
DIRECTOR  
BARBARA A. YAMASHITA  
DEPUTY DIRECTOR



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Group 70 International • 925 Bethel Street, 5th Floor • Honolulu, HI 96813-4307 • tel. 808.523.5866 • fax. 808.523.5874 • www.group70intl.com

October 8, 2014

Scott Nakasone, Assistant Division Administrator  
State of Hawaii  
Department of Human Services  
820 Milliani Street, Suite 606  
Honolulu, HI 96810-0119

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawaii'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawaii'i)  
TMK: 2-8-29-001 (por.)

Dear Mr. Kurata:

Thank you for your comment letter dated October 1, 2014 concerning the Pre-Consultation for Chapter 343, Hawaii'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the Department of Human Services has no comments to offer at this time.

We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Christine Ruotola  
Principal Planner

Vi Verawuoh

**From:** Christine Ruotola  
**Sent:** Wednesday, October 01, 2014 2:30 PM  
**To:** Vi Verawuoh  
**Subject:** FW: DOH comment letter on PC for DEA UH Law School Master Plan, Manoa  
**Attachments:** image001.emz; image003.wnz; image005.emz; image007.emz; oledatamso

**From:** McInlyre, Laura [mailto:Laura.McInlyre@doh.hawaii.gov]  
**Sent:** Wednesday, October 01, 2014 2:15 PM  
**To:** Christine Ruotola  
School Master Plan, Manoa  
NEL ABE REROMBE  
CONSULTOR OF HEALTH



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 9278  
HONOLULU, HI 96801-9378

LINDA ROSEN, M.D., M.P.H.  
DIRECTOR OF HEALTH

In reply please refer to:  
FILE  
EPO14-215

Subject: DOH comm: ..... Law

October 1, 2014

Christine Ruotola  
Principal Planner  
Group 70 International  
Email: [cruotola@group70intl.com](mailto:cruotola@group70intl.com)

Dear Ms. Ruotola:

**SUBJECT: PC for DEA for UH Law School Master Plan, Manoa**

The Department of Health (DOH), Environmental Health Administration (EHA), Environmental Planning Office (EPO), acknowledges receipt of your letter dated September 19, 2014. Thank you for allowing us to review the letter. EPO recommends that you review the standard comments at: <http://health.hawaii.gov/epo/home/landuse-planning-review-program/>. You are required to adhere to all applicable standard comments.

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

You may also wish to review the recently revised Water Quality Standards Maps that have been updated for all islands. The new Water Quality Standards Maps can be found at: <http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/water-quality-standards/>.

The EPO suggests that you examine the many sources available on strategies to support the sustainable and healthy design of communities and buildings, including the:  
2014 National Climate Change Report – Highlights for Hawaii:  
[http://ipcc-wg2.gov/AR5/Images/uploads/MWGIIAR5-Chap29\\_EGD.pdf](http://ipcc-wg2.gov/AR5/Images/uploads/MWGIIAR5-Chap29_EGD.pdf).

U.S. Health and Human Services: [www.hhs.gov/about/sustainability](http://www.hhs.gov/about/sustainability);  
U.S. Environmental Protection Agency's sustainability programs: [www.epa.gov/sustainability](http://www.epa.gov/sustainability);  
U.S. Green Building Council's LEED program: [www.usgbc.org/leed](http://www.usgbc.org/leed);  
Smart Growth America: [www.smartgrowthamerica.org](http://www.smartgrowthamerica.org);  
International Well Building Standard: <http://delosliving.com>; and  
Intergovernmental Panel on Climate Change (IPCC):  
[http://ipcc-wg2.gov/AR5/Images/uploads/WGIIAR5\\_Chap29\\_FGDall.pdf](http://ipcc-wg2.gov/AR5/Images/uploads/WGIIAR5_Chap29_FGDall.pdf)  
We request you share all of this information with others to increase community awareness on sustainable, innovative, inspirational, and healthy community design.

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

Laura Leialoha Phillips McIntyre AICP  
Program Manager, Environmental Planning Office  
Hawaii State Department of Health  
919 Ala Moana Blvd. Rm. 312  
Honolulu, Hawaii 96814  
Direct Phone: (808) 586-4338  
Email: [laura.mcintyre@doh.hawaii.gov](mailto:laura.mcintyre@doh.hawaii.gov)  
Website: <http://health.hawaii.gov/epo>  
*Ua mau ke ea o ka iai i ka pono*

## Clean Air Branch Standard Comments

### Construction/Demolition Involving Asbestos:

If the proposed project includes renovation/demolition activities which may involve asbestos, the applicant should contact the Asbestos Abatement Office in the Noise, Radiation and Indoor Air Quality Branch at 586-5800.

### Control of Fugitive Dust:

A significant potential for fugitive dust emissions exists during all phases of construction and operations. Proposed activities that occur in proximity to existing residences, businesses, public areas or thoroughfares, exacerbate potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. The plan, which does *not* require DOH approval, would help with recognizing and minimizing the dust problems from the proposed project.

Activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust. In addition, for cases involving mixed land use, we strongly recommend that buffer zones be established, wherever possible, in order to alleviate potential nuisance problems.

- The contractor should provide adequate measures to control the fugitive dust from the road areas and during the various phases of construction. Examples of measures that can be implemented to control dust include, but are not limited to, the following:
- Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
  - Providing an adequate water source at the site prior to start-up of construction activities;
  - Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;
  - Minimizing dust from shoulders and access roads;
  - Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
  - Controlling dust from debris being hauled away from the project site.

If you have any questions, please contact the Clean Air Branch at 586-4200.

(6/15/05)

## Clean Water Branch Standard Comments

October 22, 2013

### Clean Water Branch

The Clean Water Branch (CWB) protects the public health of residents and tourists who enjoy playing in and around Hawaii's coastal and inland water resources. The CWB also protects and restores inland and coastal waters for marine life and wildlife. This is accomplished through statewide coastal water surveillance and watershed-based environmental management through a combination of permit issuance, monitoring, enforcement, sponsorship of polluted runoff control projects, and public education.

### Permit Issuance

- Any project and its potential impacts to State waters must meet the State's:
    - 1) Antidegradation policy, which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected;
    - 2) Designated uses, as determined by the classification of the receiving State waters; and
    - 3) Water quality criteria [Hawaii Administrative Rules (HAR), Chapter 11-54].
  - A Section 401 Water Quality Certification (WQC) is required:
    - If your project/activity requires a federal license or permit; and
    - May result in a discharge into State waters. The term "discharge" is defined in Clean Water Act, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations (CFR), Section 122.2; and HAR, Chapter 11-54.
- Typical federal license or permits that may trigger a Section 401 WQC include the Department of the Army permits (Tel: 808-438-9258), Federal Energy Regulatory Commission permits (Tel: 202-502-6088), and Environmental Protection Agency permits (Tel: 415-947-8000).
- To request a Section 401 WQC, you must complete and submit the Section 401 WQC application. This application is available on the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/permit/View/home.aspx>.
- National Pollutant Discharge Elimination System (NPDES) permit coverage is required for:
    - Storm water associated with construction activities for land disturbances of one (1) acre or more. Land disturbance includes, but is not limited to, clearing, grading, grubbing, excavation, demolition, uprooting of vegetation, equipment staging, and storage areas.
    - Storm water associated with industrial activities for facilities with Standard Industrial Classification Codes regulated in 40 CFR 122.26(b)(14)(i) through (x) and (xi).

- Storm water and certain non-storm water from a small Municipal Separate Storm Sewer System.
- Discharges of water pollutants into State surface waters. Examples of these discharges include, but are not limited to, cooling water, hydrotesting waters, dewatering effluent, and process wastewater.
- Discharges from the application of pesticides (including insecticides, herbicides, fungicides, rodenticides, and various other substances to control pest) to State waters.

An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge or start of construction activities. To request an NPDES individual permit, you must complete and submit the NPDES individual permit application. This application is available on the e-Permitting Portal website located at:

<https://eha-cloud.doh.hawaii.gov/permit/View/home.aspx>.

A Notice of Intent (NOI) for coverage under a specific NPDES general permit must be submitted at least 30 calendar days before the commencement of the discharge or start of construction activities. To request NPDES general permit coverage, you must complete and submit the NOI. The NOI is available on the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/permit/View/home.aspx>.

- According to State law, all discharges related to the project, construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards.

### Monitoring

- Effluent discharge and/or receiving water monitoring may be required as conditions of Section 401 Water Quality Certifications and NPDES General and Individual permits.

### Enforcement

- Noncompliance with water quality requirements contained in HAR, Chapter 11-54 and/or permitting requirements specified in HAR, Chapter 11-55 may be subject to penalties of \$25,000 per day per violation.

### Polluted Runoff Control Projects

- Projects to address polluted runoff, identified in Watershed Based Plans, which meet EPA and State criteria, may qualify for federal grants administered by our office.

- At a minimum, grant funds must be matched 25% with match funding or in-kind contributions from non-federal sources and are subject to the requirements of EPA 40 CFR Chapter 1 (7-1-98 Edition), Section 31.24 Matching or Cost Sharing.
- Request for Proposals to solicit qualified projects for grant funding are issued on an annual basis and interested parties can request to be placed on a mailing list to receive a copy of the RFP when it is issued. The deadline for submittal of a proposal is usually one (1) month from the date of the RFP. For more information, please read our website at: <http://health.hawaii.gov/cmb/>.

**Hazard Evaluation & Emergency Response Office**

1. A phase I Environmental Site Assessment (ESA) should be conducted for developments or redevelopment. If the investigation shows that a release of petroleum, hazardous substance, pollutants or contaminants occurred at the site, the site should be properly characterized through an approved Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response Office (HEER) soil and/or groundwater sampling plan. If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.
2. All lands formerly in the production of sugarcane should be characterized for arsenic contamination. If arsenic is detected above the US EPA Region (preliminary remediation goal (PRG)) for non-cancer effects, then a removal and/or remedial plan must be submitted to the Hazard Evaluation and Emergency Response (HEER) Office of the State Department of Health for approval. The plan must comply with Chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.
3. If the land has a history of previous releases of petroleum, hazardous substances, pollutants, or contaminants, we recommend that the applicant request a "no further action" (NFA) letter from the Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response (HEER) Office prior to the approval of the land use change or permit approval.

**Noise, Radiation & Indoor Air Quality Branch Standard Comments** Dated 5/2012

Project activities shall comply with the Administrative Rules of the Department of Health:

- Chapter 11-39 Air Conditioning and Ventilating.
- Chapter 11-45 Radiation Control.
- Chapter 11-46 Community Noise Control.
- Chapter 11-501 Asbestos Requirements.
- Chapter 11-502 Asbestos-Containing Materials in Schools.
- Chapter 11-503 Fees for Asbestos Removal and Certification
- Chapter 11-504 Asbestos Abatement Certification Program

Should there be any questions, please contact Jeffrey Eckerd, Environmental Health Program Manager, Indoor and Radiological Health Branch, at 586-4700.

## Safe Drinking Water Branch Standard Comments

April 10, 2012

**Safe Drinking Water Branch**

The Safe Drinking Water Branch administers programs in the areas of: 1) public water systems; 2) underground injection control; and 3) ground-water protection. Our general comments on projects are as follows.

**Public Water Systems**

- Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, titled Rules Relating to Public Water Systems.
- All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements.
- Projects that propose development of new sources of potable water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of Chapter 20. This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.
- The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analysis for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this substantial or additional tests required upon his or her review of the information submitted.
- All sources of public water systems must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.
- Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification. These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.
- All public water systems must be operated by certified distribution system and water treatment plant operators as defined by Hawaii Administrative Rules, Title 11, Chapter 11-25 titled: Rules Relating to Certification of Public Water System Operators.
- All projects which propose the use of dual water systems or the use of a non-portable water system in proximity to an existing potable water system to meet irrigation or other needs must be carefully designed and operated to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid

contaminating the potable water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption of non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 11-21 titled: Cross-Connection and Backflow Control is also required.

- All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawaii Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.

- For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other public water system programs, please contact the Safe Drinking Water Branch at 586-4258.

#### **Underground Injection Control (UIC)**

- Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawaii Administrative Rules, Title 11, Chapter 11-23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.

- Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A complete UIC permit application form is needed to apply for a UIC permit.

- A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

For further information about the UIC permit and the Underground Injection Control Program, please contact the UIC staff of the Safe Drinking Water Branch at 586-4258.

#### **Groundwater Protection Program**

- Projects that propose to develop a golf course are asked to use the Guidelines Applicable to Golf Courses in Hawaii 1 (Version 6) in order to address certain groundwater protection concerns, as well as other environmental concerns.

## **Solid and Hazardous Waste Branch Standard Comments**

July 31, 2008

### **Solid and Hazardous Waste Branch**

The Solid and Hazardous Waste Branch administers programs in the areas of:

- 1) Management of hazardous waste;
- 2) Regulation of underground storage tanks; and
- 3) Management of solid waste.

Our general comments on projects are as follows.

#### **Hazardous Waste Program**

- The state regulations for hazardous waste are in Chapters 11-260 to 11-280, Hawaii Administrative Rules (HAR). These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste. Generators, transporters and treatment, storage and disposal facilities of hazardous waste must adhere to these requirements or be subject to fines and penalties.

#### **Solid Waste Section**

- The Solid Waste Section (SWS) enforces laws and regulations contained in Hawaii Revised Statutes (HRS) Chapters 342H and 342I, and Hawaii Administrative Rules, Title 11, Chapter 58.1 "Solid Waste Management Control".
- The purpose of the rules is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation and transfer systems.
- All facilities that accept solid wastes are required to obtain a solid waste management permit from the SWS. Examples of the types of facilities governed by these regulations include landfills, transfer stations and convenience centers, recycling facilities, composting facilities, salvage facilities, Medical waste, infectious waste and foreign waste treatment facilities are also included.
- Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.

#### **Office of Solid Waste Management**

- The Office of Solid Waste Management administers integrated solid waste management planning requirements, which apply to the counties, as well as the Glass Advance Disposal Fee (ADF) and Deposit Beverage Container (DBC) Programs. Management of the DBC

Program is conducted pursuant to HRS Chapter 342G, which contains compliance and enforcement provisions, and HAR Title 11, Chapter 232 "Deposit Beverage Recycling." OSWM is also responsible for limited enforcement and compliance of solid waste management facilities that operate primarily as certified DBC redemption centers pursuant to HRS Chapter 342H and HAR Title 11, Chapter 58.1, entitled: "Solid Waste Management Control." Authority for the integrated solid waste management planning and ADF programs is contained in HRS Chapter 342G.

- Glass Advance Disposal Fee Program: Businesses that manufacture, or import glass containers into Hawaii are required to register with the Department of Health and pay a 1.5-cent per container fee. Fee revenue is distributed to the counties for the operation of glass recycling programs.
- Deposit Beverage Container Program: Business that manufacture, or import, deposit beverage containers into Hawaii are required to register with the Department of Health and pay the five-cent deposit and one-cent container fee on each deposit container. Deposits and fees are deposited into a special fund and are used to reimburse DBC redemption center refunds paid to consumers; and to pay handling fees to redemption/recycling companies to process and recycle collected deposit beverage containers; and to pay program administrative costs.
- The Department of Health reimburses and pays an associated handling fee for the redemption of legitimate deposit beverage containers (DBC). These transactions are conducted only with certified redemption centers. Certification requires obtaining a solid waste management permit from the SWS (which addresses environmental issues) and a certification from the DBC program (which addresses business issues).
- HRS Chapter 342G encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes.
- Solid waste management plans should also seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

#### **Underground Storage Tank**

- The state regulations on underground storage tanks (USTs), Chapter 11-281, Hawaii Administrative Rules (HAR), became effective on January 28, 2000. The state UST regulations include, among other things, specific requirements that UST owners and operators must meet when installing and permanently closing their UST system and addressing releases from USTs.
- A guidance manual entitled "Technical Guidance Manual for Underground Storage Tank Closure and Release Response" (dated March 2000) have been developed to assist

responsible parties and their consultants and contractors in complying with the state UST closure requirements and release response activities.

- A permit is required prior to the installation and operation of an UST. The UST system that will be installed must have secondary containment. Refer to Subchapter 2-5 of the HAR. The installation permit expires in 1 year from the date of issue. The operation permit expires in 5 years from the date of issue.
- The HAR section 11- 281-61 requires owners and operators of USTs or tank systems to notify DOH within twenty-four (24) hours, and follow the procedures in section 11-281-63, for any of the following conditions:
  - 1) The discovery by any person of evidence of regulated substances which may have been released at the UST or tank system site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water;
  - 2) Unusual UST or tank system operating conditions observed or experienced by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST or tank system, or an unexplained presence of water in the tank), unless a component of the UST or tank system is found to be defective but not leaking, and is immediately repaired or replaced; or
  - 3) Monitoring results from a release detection method required under section 11-281-51(e) indicate a release may have occurred unless, the monitoring device is found to be defective, and is immediately repaired, calibrated, or replaced, and additional monitoring results do not confirm the initial result

For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226.

**WASTEWATER BRANCH - STANDARD COMMENTS**

March 2013

**GAHU**

- The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Oahu Wastewater Advisory Committee where no new cesspools will be allowed. It is also located in the Pass Zone.
- The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Oahu Wastewater Advisory Committee where no new cesspools will be allowed. It is also located in the No Pass Zone where subdivisions are not approved unless connection to the County sewer system is possible.

**MAUI**

- The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Maui County Wastewater Advisory Committee where no new cesspools will be allowed.
- The subject project is located in the Non-Critical Wastewater Disposal Area (CWDA) as determined by the Maui County Wastewater Advisory Committee where new cesspools may be allowed with specific criteria.
- The subject project is located in the One – Acre Lot Exception Critical Wastewater Disposal Area (CWDA) as determined by the Maui County Wastewater Advisory Committee where new cesspools may be allowed, provided there is at least one-acre of land.

**KAUAI**

- The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Kauai County Wastewater Advisory Committee where no new cesspools will be allowed.

**HAWAII**

- The subject project is located in the Non-Critical Wastewater Disposal Area (CWDA) as determined by the Hawaii County Wastewater Advisory Committee where new cesspools may be allowed with specific criteria.
- The subject project is located in the One – Acre Lot Exception Critical Wastewater Disposal Area (CWDA) as determined by the Hawaii County Wastewater Advisory Committee where new cesspools may be allowed, provided there is at least one-acre of land.
- The subject project is located in the Five – Acre Lot Exception Critical Wastewater Disposal Area (CWDA) as determined by the Hawaii County

Wastewater Advisory Committee where new cesspools may be allowed, provided there is at least five-acres of land.

- The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Hawaii County Wastewater Advisory Committee where no new cesspools will be allowed.

**FOR ALL ISLANDS**

- As the project will be served by the City & County of Honolulu/ County/ Private sewer system, we have no objections to the development. If available, we highly encourage the developer to work with the City/ County/ Private Wastewater Reuse Facility to utilize recycled water for irrigation and other non-potable water purposes. The use of recycled wastewater should be encouraged and utilized in major common areas such as parks, golf courses and other open spaces or landscaping areas.
- Wastewater treatment and disposal have not been adequately addressed in the subject document; therefore, we can not offer any substantial comments. If a City/County/Private sewer connection is not available, domestic wastewater generated by the project shall be handled by wastewater systems that comply with our chapter 11-62, Hawaii Administrative Rules.
- As connection to a City/County/Private sewer system may not possible, we highly recommend the construction and use of individual wastewater treatment systems (IWSS) for each unit/lot serving no more than five (5) bedrooms or bedroom like rooms.
- At this time, the use of an onsite wastewater system is allowable on this property. However, it should be located outside of 1,000 feet radius from a potable public drinking water well before we shall concur with the subdivision request.
- Based on the information provided in the subject document, a wastewater treatment plant (WWTP) will be provided for the proposed development. We have no objections to the proposal as long as the WWTP is designed and constructed in accordance with applicable provisions of our chapter 11-62, Hawaii Administrative Rules (HAR), "Wastewater Systems".
- We have a cesspool survey card for the subject project and have attached a copy. The existing cesspool is considered to be "grandfathered" and approved for use. Should a significant modification to the existing dwelling be proposed in the future, the existing cesspool will be required to be upgraded to an individual wastewater system (IWS) such as a septic tank system.
- We have a cesspool survey card for the subject project and have attached a copy. The existing cesspool is considered to be "grandfathered-in". The Department currently does not have any complaints or enforcement case that involves the subject cesspool.

- The use of individual wastewater systems is allowed. The type and number of individual wastewater systems to be used on each lot will be determined by the wastewater rules in effect at the time of building permit application.
- Domestic wastewater will not be generated by the subject project; therefore, we have no comments to provide at this time.
- We do not have any records of a treatment system for the subject property; therefore, we cannot offer any substantial comments at this time.

#### **SUBDIVISION REQUESTS**

- The Wastewater Branch does not concur with the subdivision request because a minimum lot size of 10,000 square feet is required in order to utilize individual wastewater systems.
- The properties to be subdivided are less than 10,000 square feet; therefore, we will have to deny this subdivision request.
- The subdivision consists of 50 lots/dwelling units or more with lot sizes that are greater than an acre. The use of individual wastewater systems are allowed under the provisions of Hawaii Administrative Rules (HAR), Chapter 11-62.
- The subdivision is located with 1000' radius of a public drinking water source. The WWB cannot concur with the proposed subdivision unless connection to a public sewer system is available.
- The source of potable water is not shown. Please provide this office with the source of potable water such that we can further review the subdivision request.
- The subdivision consists of less than 50 lots/dwelling units. The use of individual wastewater systems are allowed under the provisions of Hawaii Administrative Rule Chapter 11-62. The type and number of individual wastewater treatment systems to be used on each lot will be determined by the wastewater rules in effect at the time of the building permit.
- The subdivision consists of 50 lots/dwelling units or more. The use of individual wastewater systems are not allowed under the provisions of Hawaii Administrative Rule Chapter 11-62. Please have your engineer submit plans for a wastewater treatment works to the Wastewater Branch.
- Show all proposed existing structures and wastewater disposal systems on the final plot map including setback distances to the newly adjusted property lines and buildings.
- In accordance with Hawaii Revised Statutes 343, an environmental assessment is required for any proposed wastewater treatment unit except for individual wastewater systems or a wastewater treatment system unit serving fewer than fifty single-family dwellings or the equivalent.

#### **OTHER:**

- The installation of individual wastewater systems will not be allowed if the design flow for the project exceeds 15,000 gallons per day. Hawaii Administrative Rules (HAR), Chapter 11-62, Wastewater Systems, section 11-62-3.1.1(2)(B) states that for developments involving buildings other than dwellings, the total wastewater flow of the development shall not exceed 15,000 gallons per day. A wastewater treatment plant will be required to be designed and constructed in accordance with our chapter 11-62, HAR if design flows for the project exceeds 15,000 gallons per day.
- The Wastewater Branch has records for the existing wastewater system(s) that are located on the subject property. Please have your engineer or contractor submit completed cesspool information card(s) identifying the location of all wastewater system(s) and their locations to the existing and proposed adjusted property lines.
- In 1999, EPA promulgated regulations under the Safe Drinking Water Act's Underground Injection Control (UIC) Program required closure of all existing large capacity cesspools (LCC) by April 5, 2005. Under federal regulations, a large capacity cesspool is a cesspool which serves multiple dwellings, or for non-residential facilities has the capacity to serve 20 or more persons per day. Operation of a large capacity cesspool after this date is a violation of federal regulations and subject to enforcement and fines. If you have any questions about LCC, please contact Kate Rao of EPA at (415) 972-3538 or by email at [Rao.Kate@epamail.epa.gov](mailto:Rao.Kate@epamail.epa.gov).
- All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at telephone 586-4294.



GROUP 70  
INTERNATIONAL

October 8, 2014

Laura Lailoha Phillips McIntyre, AICP  
Program Manager, Environmental Planning Office  
State of Hawaii  
Department of Health  
919 Ala Moana Boulevard, Room 312  
Honolulu, HI 96814

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Ms. McIntyre:

Thank you for your comment letter dated October 1, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

The comments provided by the Department of Health have been reviewed. The project will comply with the requirements of the Department of Health as noted on the website.

We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Christine Ruotola  
Principal Planner

Tom Young, MBA  
AA  
Paul T. Matsuuda  
PE, LEED AP  
Ma Ky Kim  
RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FACP

Group 70 International • 925 Bethel Street, 5th Floor • Honolulu, HI 96813-4307 • tel. 808.523.5866 • fax. 808.523.5874 • www.group70intl.com



**OFFICE OF PLANNING  
STATE OF HAWAII**

235 South Beretania Street, 8th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96904

Ref. No. P-14535

October 9, 2014

RECEIVED

OCT 14 2014

GROUP 70 INTL

Ms. Christine Ruotola  
Group 70 International  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813-4398

Dear Ms. Ruotola:

**Subject:** Early Consultation for a Draft Environmental Assessment for the University of Hawai'i Law School Master Plan, TMK: (1) 2-8-29-001 (por)

Thank you for the opportunity to provide early consultation comments on the University of Hawai'i Law School Master Plan. Based on the documents that were provided to our office by letter dated September 19, 2014, this project calls for a number of improvements including the expansion of the East Wing, selective interior and exterior renovations, construction of a connector bridge, construction of a two story Community Legal Outreach Center, landscaping, improved signage, instruction of photovoltaic paneling, removing of a pedestrian path, and parking lot improvements.

Bases on review of the documents provided to our office, we have the following comments to offer:

1. The Office of Planning (OP) provides technical assistance to state and county agencies in administering the statewide planning system in Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Plan. The Hawaii State Planning Act provides goals, objectives, priorities, and priority guidelines for growth, development, and the allocation of resources throughout the State. The Hawaii State Plan includes diverse policies and objectives of state interest including but not limited to the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, and sustainability.

The Draft Environmental Assessment (Draft EA) should include an analysis of the project's consistency with the Hawaii State Plan, HRS Chapter 226, in a section addressing state and county plans, policies, and controls.

2. OP is the lead agency for the Hawaii Coastal Zone Management (CZM) Program. The coastal zone management area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and

Telephone: (808) 587-2846  
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Web: <http://planning.hawaii.gov/>

NEIL ABERGROMBE  
GOVERNOR  
LEO R. ASUNCION  
ACTING DIRECTOR  
OFFICE OF PLANNING

Ms. Christine Ruotola  
October 9, 2014  
Page 2

management authority, including the U.S. territorial sea" see HRS § 205A-1 (definition of "coastal zone management area").

In a section that addresses the project's conformance with state and county plans, policies, and controls, the Draft EA should include a discussion of the project's ability to meet the objectives and policies set forth in HRS § 205A-2. These objectives and policies include: recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

3. The lower portion of Manoa Valley, where the University of Hawaii Law School is situated, is subject to rainy and wet conditions year round. Additionally the island of Oahu is subject to flashy and unstable weather during the winter. Please consider utilizing OP's *Stormwater Impact Assessment* to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff occurrences. In particular, please examine the section on Low-Impact Development Concepts, which include decentralized micro-scale controls that infiltrate, filter, store, reuse, evaporate, and detain runoff close to its source.

This guidance document will assist in integrating stormwater impact assessment within your review process. The purpose of this document is to provide guidance on assessing stormwater impacts in the planning phase of project development. The goal is to provide a suggested framework and various tools for integrating stormwater impacts assessment. These concepts are listed on pages 14-16 of the *Stormwater Impact Assessment* guidance. This can be found at [http://files.hawaii.gov/dbedt/od/czm/initiative/stormwater\\_impact\\_final\\_stormwater\\_impact\\_assessments\\_guidance.pdf](http://files.hawaii.gov/dbedt/od/czm/initiative/stormwater_impact_final_stormwater_impact_assessments_guidance.pdf).

If you have any questions regarding this comment letter, please contact Josh Hekēkia of our office at 587-2845.

Sincerely,

  
Leo R. Asuncion  
Acting Director



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October 15, 2014

Mr. Leo R. Asuncion  
Acting Director  
State of Hawaii  
Office of Planning  
P.O. Box 2359  
Honolulu, HI 96804

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment Law School Master Plan, University of Hawaii' Manoa Campus (Manoa Valley, Honolulu, Hawaii')  
TMK: 2-8-29:001 (por.)

Dear Mr. Asuncion:

Thank you for your comment letter dated October 9, 2014 concerning the Pre-Consultation for Chapter 343, Hawaii' Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project. The following responses are offered to your comments.

1. The Draft EA will provide a discussion of how the project supports specific objectives and policies of the Hawaii' State Plan, including principles to promote sustainability.
2. The Draft EA will provide a discussion of how the project meets the objectives and policies set forth in Chapter 205A-2, HRS.
3. We appreciate the resources you have provided relating to stormwater impacts and low-impact development concepts to support the sustainable and healthy design of communities and buildings. The project will look for opportunities to apply sustainability strategies and principles.

Thank you for your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,  
GROUP 70 INTERNATIONAL, INC.

  
Christine Mendes Ruotola, AICP, LEED AP  
Principal



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

October 16, 2014

Group 70 International, Inc.  
Attention: Ms. Christine Ruotola  
925 Bethel Street, 5th Floor  
Honolulu, HI 96813-4307

via email: [ruotola@group70intl.com](mailto:ruotola@group70intl.com)

Dear Ms. Ruotola,

**SUBJECT:** Pre-Consultation for Draft Environmental Assessment (EA), Law School Master Plan, University of Hawai'i Manoa Campus (Manoa Valley, Honolulu, Hawaii) TMK: 2-8-29-001 (por.)

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent under cover of our prior letter issued October 16, 2014, enclosed are comments from the Division of Forestry and Wildlife on the subject matter. Should you have any questions, please feel free to Supervising Land Agent Steve Molmen at 587-0439.

Sincerely,

Russell Y. Tsuji  
Land Administrator

Enclosure(s)



POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

October 16, 2014

Group 70 International, Inc.  
Attention: Ms. Christine Ruotola  
925 Bethel Street, 5th Floor  
Honolulu, HI 96813-4307

via email: [ruotola@group70intl.com](mailto:ruotola@group70intl.com)

Dear Ms. Ruotola,

**SUBJECT:** Pre-Consultation for Draft Environmental Assessment (EA), Law School Master Plan, University of Hawai'i Manoa Campus (Manoa Valley, Honolulu, Hawaii) TMK: 2-8-29-001 (por.)

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Sincerely,

Russell Y. Tsuji  
Land Administrator

Enclosure(s)



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE

1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

October 15, 2014

**MEMORANDUM**

**TO:** Russell Y. Tsuji, Administrator  
Land Division, Department of Land and Natural Resources

**FROM:** Lisa J. Hadway, Administrator *Lisa*  
Division of Forestry and Wildlife, Department of Land and Natural Resources

**SUBJECT:** Division of Forestry and Wildlife Comments for Pre-Consultation for Draft Environmental Assessment, Law School Master Plan, University of Hawai'i Mānoa Campus

The Division of Forestry and Wildlife (DOFAW) has reviewed the pre-consultation notice provided by Group 70 International, Inc., the entity preparing a draft Environmental Assessment (EA) on behalf the University of Hawai'i at Mānoa with regard to a proposed expansion of the Law School. With regard to the request from Group 70 International, Inc. to receive comments from agencies identifying significant issues that should be considered in their environmental review, the DOFAW suggests that the review address the following issues:

1. Outdoor lights at the proposed facility that could potentially attract native wildlife, including endangered seabirds,
2. The presence of cats at the proposed facility and their impact on wildlife,
3. The presence of refuse containers at the proposed facility, such as dumpsters or outdoor trashcans, that may attract and provide a food source for mongoose, rodents, cats, or other predators, and the subsequent impact to wildlife.

The DOFAW appreciates the opportunity to provide comments on this pre-consultation.



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE

1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

October 15, 2014

**MEMORANDUM**

**TO:** Russell Y. Tsuji, Administrator  
Land Division, Department of Land and Natural Resources

**FROM:** Lisa J. Hadway, Administrator *Lisa*  
Division of Forestry and Wildlife, Department of Land and Natural Resources

**SUBJECT:** Division of Forestry and Wildlife Comments for Pre-Consultation for Draft Environmental Assessment, Law School Master Plan, University of Hawai'i Mānoa Campus

The Division of Forestry and Wildlife (DOFAW) has reviewed the pre-consultation notice provided by Group 70 International, Inc., the entity preparing a draft Environmental Assessment (EA) on behalf the University of Hawai'i at Mānoa with regard to a proposed expansion of the Law School. With regard to the request from Group 70 International, Inc. to receive comments from agencies identifying significant issues that should be considered in their environmental review, the DOFAW suggests that the review address the following issues:

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The DOFAW appreciates the opportunity to provide comments on this pre-consultation.

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LAND DIVISION  
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STATE OF HAWAII



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AA, LEED AP

Tom Young, MBA  
AA

Paul T. Matsuda  
PE, LEED AP

Ma Ry Kim  
RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FACP

October 28, 2014

Ms. Lisa J. Hadway  
Administrator

State of Hawai'i

Department of Land and Natural Resources – Division of Forestry and Wildlife  
1151 Punchbowl Street, Room 325

Honolulu, HI 96813

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Manoa Campus  
(Manoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Ms. Hadway:

Thank you for your comment letter dated October 15, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project. The following responses are offered to your comments:

1. Although no rare, threatened or endangered species are known to exist on the project grounds, as a precaution, outdoor lighting will be shielded to reduce the impact to nocturnal flying native birds. The project will incorporate best practices including utilizing full cutoff outdoor lighting fixtures. If construction during evening hours is necessary, the associated lights will be shielded. Large floodwork lights will be placed on poles that are high enough to allow lights to be pointed directly at the ground.
2. Impact on wildlife in the project area by feral cats is not anticipated. However, if the issue arises, the University will work with the Hawaiian Humane Society to appropriately handle the issue.
3. Refuse containers such as dumpsters and outdoor trashcans will have lids or closing mechanisms to prevent trash from becoming food sources for mongooses, rodents, cats, or other wildlife predators.

We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,  
GROUP 70 INTERNATIONAL, INC.

*Christine Mendes Ruotola*  
Christine Mendes Ruotola, AICP, LEED AP  
Principal

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



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



WILLIAM J. ADA, JR.  
COMMISSIONER OF LAND AND NATURAL RESOURCES  
CHIEF OF BUREAU OF LAND AND NATURAL RESOURCES

October 16, 2014

Group 70 International, Inc.  
Attention: Ms. Christine Ruotola  
925 Bethel Street, 5th Floor  
Honolulu, HI 96813-4307

via email: [cruotola@group70int.com](mailto:cruotola@group70int.com)

Dear Ms. Ruotola,

**SUBJECT:** Pre-Consultation for Draft Environmental Assessment (EA), Law School Master Plan, University of Hawai'i Manoa Campus (Manoa Valley, Honolulu, Hawai'i) TMK: 2-8-29-001 (por.)

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

At this time, enclosed are comments from (1) Engineering Division, and (2) Land Division – Oahu District. No other comments were received as of our suspense date. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at 587-0439. Thank you.

Sincerely,

*Russell Y. Tsuji*  
Russell Y. Tsuji  
Land Administrator

Enclosure(s)



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

September 23, 2014

MEMORANDUM

TO:

DLNR Agencies:

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

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Pre-Consultation for Draft Environmental Assessment (EA), Law School Master Plan, University of Hawai'i Manoa Campus

LOCATION: Manoa Valley, Honolulu, Hawai'i, TMK: 2-8-29-001 (por.)

APPLICANT: Office of Capital Improvements, University of Hawai'i at Manoa, by its consultant, Group 70 International, Inc.

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Attachments

- ( ) We have no objections.
- ( X ) We have no comments.
- ( ) Comments are attached.

Signed: *[Signature]*  
Print Name: Neil Abercrombie  
Date: 9/23/14



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

September 23, 2014

MEMORANDUM

TO:

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

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Pre-Consultation for Draft Environmental Assessment (EA), Law School Master Plan, University of Hawai'i Manoa Campus

LOCATION: Manoa Valley, Honolulu, Hawai'i, TMK: 2-8-29-001 (por.)

APPLICANT: Office of Capital Improvements, University of Hawai'i at Manoa, by its consultant, Group 70 International, Inc.

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Attachments

- ( ) We have no objections.
- ( X ) We have no comments.
- ( X ) Comments are attached.

Signed: *[Signature]*  
Print Name: Neil Abercrombie  
Date: 9/23/14

RECEIVED  
LAND DIVISION  
2014 OCT 14 PM 2:43  
DEPT. OF LAND & NATURAL RESOURCES  
STATE OF HAWAII





GROUP 70  
INTERNATIONAL

October 28, 2014

Mr. Cary Chang  
Chief Engineer  
State of Hawai'i

Department of Land and Natural Resources – Engineering Division  
1151 Punchbowl Street, Room 221  
Honolulu, HI 96813

PRINCIPALS

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FE, LEED AP

Ma Ry Kim  
RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FAICP

Dear Mr. Chang:

Thank you for your comment letter dated October 16, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the project site is located on Zone X and is not regulated by the National Flood Insurance Program.

The Draft EA will include water demands and infrastructure requirements to meet the project needs. The University will pay any required resource development charge and Water Facilities Charges to the Honolulu Board of Water Supply.

Projected water demands and calculations will be provided to the Engineering Division, in the Draft EA which will be provided to DLNR, for inclusion in the State Water Projects Plan Update.

We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,  
GROUP 70 INTERNATIONAL, INC.

Christine Mendes Ruotola, AICP, LEED AP  
Principal



GROUP 70  
INTERNATIONAL

October 20, 2014

Mr. Timothy Chee  
Land Agent  
State of Hawai'i

Department of Land and Natural Resources – Land Division  
1151 Punchbowl St., Room 220  
Honolulu, HI 96813

PRINCIPALS

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FE, LEED AP

Ma Ry Kim  
RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FAICP

Dear Mr. Chee:

Thank you for your comment letter dated October 16, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the Land Division - O'ahu District has no comments to offer on this project.

We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Christine Ruotola  
Principal Planner



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
580 N. NIMITZ HWY., SUITE 200  
HONOLULU, HAWAII 96817

October 20, 2014

HRD14/7270

RECEIVED

OCT 21 2014

GROUP 70 INTL

Christine Ruotola  
Group 70 International, Inc.  
925 Bethel Street, 5<sup>th</sup> Floor  
Honolulu, HI 96813

Re: Comments on Draft Environmental Assessment  
Law School Master Plan, University of Hawai'i at Manoa  
Walkiki Ahupua'a, Kona Moku  
Tax Map Key: (1) 2-8-029:001

Aloha e Ms. Ruotola:

The Office of Hawaiian Affairs (OHA) is in receipt of your September 19, 2014 letter, seeking comments on a draft environmental assessment (DEA), for the proposed University of Hawai'i at Manoa (UHMA) Law School's (School) master plan ("the project"). The project is located on the lower campus of UHMA. According to your letter, the project's objectives are to address the space needs and implement the long-term visions of the school by expanding and improving the following:

- Adding a second floor structure to the School of Law Library;
- Interior and exterior renovations of both Law School buildings;
- Construction of a two-story Community Legal Outreach Center;
- Landscape improvements throughout the project area;
- Construction of connector bridges between buildings;
- Improved signage;
- Installation of rooftop photovoltaic, solar carport, or micro-wind turbine that integrates into the buildings; and
- Resurfacing and restriping of the parking lot 'Ewa of the project area.

Christine Ruotola  
October 20, 2014  
Page 2

OHA supports the proposed improvements, expansion, and renovation of the School. As mentioned in your letter, after 40 years in service, the School facilities no longer have the capacity to support the growth in training, faculty, students, and multidisciplinary and clinical programs. Currently, the School offers a full-time Juris Doctor (JD) program, dual degree programs, including J.D. Masters of Business Administration, LL.M degree, and certificate programs.

In 1966, native Hawaiian Chief Justice William S. Richardson spearheaded the drive to start the law school, now known as William S. Richardson School of Law. According to the *U.S. News and World Report* of September 2014, the School ranks amongst the nation's top law schools at 100, its part-time program is ranked at 26, and it is the smallest law school ranked in the top tier of the nation's law schools.

Going forward with this project, OHA does request assurances that should iwi kاپuna or Native Hawaiian cultural deposits be identified during any ground altering activity, all work will immediately cease and the appropriate agencies, including OHA, will be contacted pursuant to applicable law.

Thank you for the opportunity to provide comments on the DEA for the project. Should you have any questions, please contact Kathryn Keala, at (808) 594-1848 or [kathyk@oha.org](mailto:kathyk@oha.org).

'O wau iho nō me ka 'oia'i'o,

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

KMC:kk



GROUP 70  
INTERNATIONAL

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Tom Young, MBA  
AA

Paul T. Matsuda  
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Ma Ry Kim  
RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FACP

October 28, 2014

Dr. Kamana'opono M. Crabbe, Chief Executive Director  
State of Hawai'i  
Office of Hawaiian Affairs  
560 Nimitz Highway, Suite 200  
Honolulu, HI 96817

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Dr. Crabbe:

Thank you for your comment letter dated October 20, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that OHA supports the proposed improvements, expansion, and renovation of the Law School. If Iwi kūpuna or Native Hawaiian cultural deposits are identified during ground altering activity, all work will immediately cease and the appropriate agencies, including OHA, will be contacted pursuant to applicable law.

We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Christine Ruotola  
Principal Planner

DEPARTMENT OF PARKS & RECREATION  
CITY AND COUNTY OF HONOLULU

1000 Ulukoua Street, Suite 309, Kapiolani, Hawaii 96707  
Phone: (808) 768-3003 • Fax: (808) 768-3053  
Website: www.honolulu.gov



KIRK CALDWELL  
MAYOR

September 26, 2014

Ms. Christine Ruotola, Principal Planner  
Group 70 International  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813

Dear Ms. Ruotola:

**SUBJECT:** Pre-Consultation-Draft Environmental Assessment  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawaii)  
TMK: 2-8-029:001 (por)

Thank you for the opportunity to review and comment at the pre-consultation stage of the Draft Environmental Assessment for the Law School Master Plan.

The Department of Parks and Recreation has no comment. As the proposed project will have no impact on any program or facility of the department, you may remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 768-3017.

Sincerely,  
  
Michele K. Nekota  
Director

MKN:jr  
(581394)

RECEIVED

SEP 29 2014

GROUP 70 INTE

MICHELE K. NEKOTA  
DIRECTOR  
JEANNE C. ISHIKAWA  
DEPUTY DIRECTOR



GROUP 70  
INTERNATIONAL

PRINCIPALS

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PE, LEED AP

Ma Ry Kim  
RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FACP

October 8, 2014

Ms. Michele K. Nekota, Director  
City and County of Honolulu  
Department of Parks & Recreation  
1000 Uluohia Street, Suite 309  
Kapolei, HI 96707

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Ms. Nekota:

Thank you for your comment letter dated September 26, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the Department of Parks & Recreation has no comments to offer at this time. As requested, we will remove your department from the EA process.

We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Christine Ruotola  
Principal Planner

DEPARTMENT OF COMMUNITY SERVICES  
CITY AND COUNTY OF HONOLULU  
715 SOUTH KING STREET, SUITE 311 • HONOLULU, HAWAII 96813 • NEHA CODE 688 • PHONE: 788-7782 • FAX: 788-7782



GARY K. NAKATA  
ACTING DIRECTOR

KIRK CALDWELL  
MAYOR

October 2, 2014

RECEIVED

OCT - 8 2014

GROUP 70 INTL

Ms. Christine Ruotola  
Principal Planner  
Group 70 International  
925 Bethel Street, 5<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Dear Ms. Ruotola:

**SUBJECT:** Pre-Consultation for Draft Environmental Assessment (EA)  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawaii)  
TMK: 2-8-29: 001 (por.)

We have reviewed your letter dated September 19, 2014, and the information and map provided regarding the Pre-Consultation for a Draft Environmental Assessment (EA), Law School Master Plan, University of Hawai'i Mānoa Campus.

Our review of the information provided indicates that the proposed Law School Master Plan, University of Hawai'i Mānoa Campus, will have no adverse impacts on any Department of Community Services' activities or projects at this time.

Thank you for providing us with the opportunity to comment on this matter.

Sincerely,

Gary K. Nakata  
Acting Director

GKN:sgk



GROUP 70  
INTERNATIONAL

PRINCIPALS

Franca S. Oda, Arch.D.  
FAA, AICP, LEED AP

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AIA

Paul T. Matsuda  
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RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FACIP

October 15, 2014

Mr. Gary K. Nakata  
Acting Director  
City and County of Honolulu  
Department of Community Services  
715 South King Street, Suite 311  
Honolulu, HI 96813

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Mr. Nakata:

Thank you for your comment letter dated October 2, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the proposed Law School Master Plan will have no adverse impacts on any of Department of Community Services' activities or projects at this time.

We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,  
GROUP 70 INTERNATIONAL, INC.

*Christine Mendes Ruotola*  
Christine Mendes Ruotola, AICP, LEED AP  
Principal

POLICE DEPARTMENT  
CITY AND COUNTY OF HONOLULU  
801 SOUTH BERETANIA STREET • HONOLULU, HAWAII 96813  
TELEPHONE: (808) 529-3111 • INTERNET: www.honolulu.gov

PETER B. CARLISLE  
MAYOR



LOUIS M. KEALOHA  
CHIEF  
DAVE M. KAJIHO  
MARIE A. MCGAHEY  
DEPUTY CHIEFS

OUR REFERENCE EO-WS

October 3, 2014

RECEIVED

OCT - 3 2014

GROUP 70 INTL

Ms. Christine Ruotola, AICP, LEED AP  
Principal Planner  
Group 70 International, Inc.  
925 Bethel Street, 5<sup>th</sup> Floor  
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

This is in response to your letter dated September 19, 2014, requesting comments on a Pre-Consultation, Draft Environmental Assessment for the proposed Law School Master Plan project.

The Honolulu Police Department anticipates possible short-term impacts to traffic around the Dole Street area during the construction phase of the project. We recommend scheduling construction vehicles and supply deliveries during off-peak traffic hours and informing the public of any potential delays in and around the project area.

Additionally, we would like to be involved in future planning and/or implementation of the project in order to reassess the project's impact on police operations.

If there are any questions, please contact Major Calvin Tong of District 7 (East Honolulu) at 723-3369 or via e-mail at [ctong@honolulu.gov](mailto:ctong@honolulu.gov).

Sincerely,

LOUIS M. KEALOHA  
Chief of Police

By *Rek Wang*  
RANDAL K. MACADANGDANG  
Assistant Chief  
Support Services Bureau



GROUP 70  
INTERNATIONAL

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Ma Ry Kim  
RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FACP

October 8, 2014

Randal K. Macadangdang  
Assistant Chief, Support Services Bureau  
City and County of Honolulu  
Police Department  
801 South Beretania Street  
Honolulu, HI 96813

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Mānoa Campus  
(Mānoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Chief Macadangdang:

Thank you for your comment letter dated October 3, 2014 concerning the Draft Environmental Assessment (EA) for the Law School Master Plan project.

Per your recommendation, the University will consider scheduling construction vehicles and supply deliveries during off-peak traffic hours and informing the public of any potential delays in and around the project area.

We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Christine Ruotola  
Principal Planner

BOARD OF WATER SUPPLY

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



October 7, 2014

RECEIVED

OCT - 9 2014

GROUP 70 INTL

Ms. Christine Ruotola, Principal Planner  
Group 70 International, Inc.  
925 Bethel Street, 5<sup>th</sup> Floor  
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

**Subject:** Your Letter Dated September 19, 2014 on the Pre-Consultation for Draft Environmental Assessment, Law School Master Plan, University of Hawai'i Mānoa Campus - Tax Map Key: 2-8-029: 001

Thank you for the opportunity to comment on the proposed law school master plan.

The existing water system is adequate to accommodate the proposed Law School expansion. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the 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 proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

ERNEST W. LAU, P.E.  
Manager and Chief Engineer

KIRK CALDWELL, MAYOR  
DUANE R. IWASHIRO, Chair  
ADAM C. WONG, Vice Chair  
MICHAEL CYPRER  
TOMMY LINDO  
DAVID C. HALLIHEE  
ROSS S. SASAKURA, Ex-Officio  
FORD N. FUCHIGAMI, Ex-Officio  
ERNEST W. LAU, P.E.,  
Manager and Chief Engineer  
EILEEN E. KITAHARA, P.E.  
Supply Manager and Chief Engineer



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Ma Ky Kim  
RIBA, ABB

OF COUNSEL

Ralph E. Portmore  
FACP

October 15, 2014

Mr. Ernest Y.W. Lau, P.E.  
Manager and Chief Engineer  
City and County of Honolulu  
Board of Water Supply  
630 South Beretania Street  
Honolulu, HI 96843

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Manoa Campus  
(Manoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Mr. Lau:

Thank you for your comment letter dated October 7, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the existing water system is adequate to accommodate the proposed Law School expansion. We understand that the final decision on the availability of water will be confirmed when the project's building permit application is submitted for approval.

The University will pay the Water System Facilities Charges for resource development, transmission and daily storage when water is made available for the project.

We acknowledge that the project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of Building Permit Applications.

We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,  
GROUP 70 INTERNATIONAL, INC.

Christine Mendes Ruotola, AICP, LEED AP  
Principal

HONOLULU FIRE DEPARTMENT  
CITY AND COUNTY OF HONOLULU

636 South Street  
Honolulu, Hawaii 96813-5007  
Phone: 808-723-7138 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd



MANUEL P. NEVES  
FIRE CHIEF  
LIONEL CAMARA JR.  
DEPUTY FIRE CHIEF

RECEIVED

OCT 15 2014

GROUP 70 INTL

Ms. Christine Ruotola, Principal Planner  
Group 70 International  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813

Dear Ms. Ruotola:

**Subject:** Preconsultation for Draft Environmental Assessment  
Law School Master Plan, University of Hawai'i at Manoa Campus  
Tax Map Key: 2-8-029: 001 (Portion)

In response to your letter dated September 19, 2014, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) requires that the following be compiled with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1, Uniform Fire Code [UFCTM], 2006 Edition, Section 18.2.3.2.2.)  
A fire department access road shall extend to within 50 ft of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1, UFCTM, 2006 Edition, Section 18.2.3.2.1.)
2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet from a water supply on a fire apparatus access road, as measured by an approved route around

Ms. Christine Ruotola, Principal Planner  
Page 2  
October 9, 2014

3. The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1, UFC<sup>TM</sup>, 2006 Edition, Section 18.3.1, as amended.)
4. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Acting Battalion Chief Sheldon Yasso of our Fire Prevention Bureau at 723-7151 or syasso@honolulu.gov.

Sincerely,



SOCRATES D. BRATAKOS  
Assistant Chief

SDB/SY:bh



GROUP 70  
INTERNATIONAL

October 28, 2014

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Ma Ry Kim  
RIBA, AEB

OF COUNSEL

Ralph E. Portmore  
FAACP

Mr. Socrates D. Bratakos  
Assistant Chief

City and County of Honolulu  
Honolulu Fire Department

636 South King Street  
Honolulu, HI 96813-5007

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Manoa Campus  
(Manoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Chief Bratakos:

Thank you for your comment letter dated October 9, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

In response to your comments, the proposed project will comply with the applicable National Fire Protection Association (NFPA) 1 Uniform Fire Code (UFC), 2006 Edition. Civil drawings will be submitted to the Honolulu Fire Department for review and approval during the building permitting period.

We will provide your office with a copy of the Draft EA for your review. We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,  
GROUP 70 INTERNATIONAL, INC.



Christine Mendes Ruotola, AICP, LEED AP  
Principal

DEPARTMENT OF ENVIRONMENTAL SERVICES  
**CITY AND COUNTY OF HONOLULU**  
1000 ULUOHA STREET, SUITE 308, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 795-3488 • FAX: (808) 798-3487 • WEBSITE: <http://env.honolulu.gov>



LORI M.K. KAHIKINA, P.E.  
DIRECTOR  
TIMOTHY A. HORTON  
DEPUTY DIRECTOR  
ROSS S. TANIMOTO, P.E.  
DEPUTY DIRECTOR  
IN REPLY REFER TO  
PRO 14-143

October 10, 2014

RECEIVED

OCT 22 2014

GROUP 70 INTL.

Ms. Christine Ruotola  
Group 70 International  
925 Bethel Street, 5<sup>th</sup> Floor  
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

**SUBJECT:** Pre-Consultation for Draft Environmental Assessment (EA)  
Law School Master Plan, University of Hawaii Manoa  
Campus, (TMK: 2-8-029:001 portion)

We have reviewed the subject document as transmitted to us by your letter dated September 19, 2014. We have the following comments:

1. The Department of Planning and Permitting (DPP), Wastewater Branch has the lead role in issuing sewer connection permits.
2. We recently provided comments to DPP for the University of Hawaii at Manoa, Sewer Master Plan, dated February 24, 2014. Please check the Sewer Master Plan to ensure that the proposed expansions included in the Law School Master Plan are consistent with what was included in the Sewer Master Plan, dated February 24, 2014.

Should you have any questions, please call Lisa Kimura, Civil Engineer, at 768-3455.

Sincerely,

Lori M.K. Kahikina, P.E.  
Director

cc: Department of Planning and Permitting, SDD, WMB  
Department of Design and Construction, WWD, CSEB



**GROUP 70**  
INTERNATIONAL

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PE, LEED AP  
Ma Ry Kim  
RIBA, ABB

OF COUNSEL  
Ralph E. Portmore  
FACP

October 27, 2014

Ms. Lori M.K. Kahikina, P.E., Director  
City and County of Honolulu  
Department of Environmental Services  
1000 Uluoaha Street, Suite 308  
Kapolei, HI 96707

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawaii at Manoa Campus  
(Manoa Valley, Honolulu, Hawaii)  
TMK: 2-8-29:001 (por.)

Dear Ms. Kahikina:

Thank you for your comment letter dated October 10, 2014 concerning the Pre-Consultation for Chapter 343, Hawaii Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the Department of Planning and Permitting (DPP), Wastewater Branch has the lead role in issuing sewer connection permits.

We acknowledge that the Department of Environmental Services recently provided comments to DPP for the University of Hawaii at Manoa, Sewer Master Plan, dated February 24, 2014. We will review the Sewer Master Plan to ensure that the Law School Master Plan project is consistent with the Sewer Master Plan.

Thank you for your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Christine Mendes Ruotola, ACP, LEED AP  
Principal

DEPARTMENT OF TRANSPORTATION SERVICES  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8305 • Fax: (808) 768-4720 • Internet: www.honolulu.gov

KIRK CALDWELL  
MANAGER



MICHAEL D. FORMBY  
DIRECTOR  
MARK N. GARRITY, AICP  
DEPUTY DIRECTOR

October 15, 2014

TP9/14-582278R

RECEIVED

OCT 15 2014

GROUP 70 INTL

Ms. Christine Ruotola  
Principal Planner  
Group 70 International  
925 Behnel Street, 5<sup>th</sup> Floor  
Honolulu, Hawaii 96813-4398

Dear Ms. Ruotola:

**SUBJECT:** Pre-Consultation for Draft Environmental Assessment (EA)  
Law School Master Plan, University of Hawaii Manoa Campus,  
Oahu, Hawaii

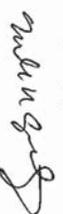
In response to your letter dated September 19, 2014, we have the following comments:

1. The Draft EA should include an update to the 2007 Traffic Impact Assessment Report to address multimodal mitigation measures to minimize traffic and parking on the local roadway network. The updated report should also address short-term traffic congestion impacts during construction and any long-term impacts after construction.
2. There are two bus stops located on Dole Street that are fronting or adjacent to the proposed project. The Draft EA should include a description of Public Transit and the impact of your project on Public Transit bus and paratransit operations during construction. Basic information is available on our websites: www.thebus.org and www.honolulu.gov/dts. Because your project may affect bus routes and services, you should contact our staff at 768-8370 to coordinate your planned activities.

Ms. Christine Ruotola  
October 15, 2014  
Page 2

3. Construction notes should include the following note regarding transit services: "This project may affect bus routes, bus stops, and paratransit operations, therefore, the Contractor shall notify the Department of Transportation Services, Public Transit Division at 768-8396 and Oahu Transit Services, Inc. (bus operations: 848-4578 or 852-6016 and paratransit operations: 454-5041 or 454-5020) of the scope of work, location, proposed closure of any street, traffic lane, sidewalk, or bus stop and duration of project **at least two weeks prior to construction.**"
  4. The area Neighborhood Board, as well as the area residents, businesses, emergency personnel, Oahu Transit Services, Inc. (TheBus), etc., should be kept apprised of the details of the proposed project and the impacts, particularly during construction, the project may have on the adjoining local street area network.
  5. Any construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to traffic on the local streets.
  6. On-site bicycle facilities for the project should be anticipated and accommodated.
  7. All access driveways to the project site should be kept safe for pedestrians and bicyclists to traverse.
- Thank you for the opportunity to review this matter. Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,

  
for Michael D. Formby  
Director



GROUP 70  
INTERNATIONAL

PRINCIPALS

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OF COUNSEL

Ralph E. Portmore  
FACP

October 28, 2014

Mr. Michael D. Fomby

Director

City and County of Honolulu

Department of Transportation Services

650 South King Street, 3<sup>rd</sup> Floor

Honolulu, HI 96813

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawai'i Manoa Campus  
(Manoa Valley, Honolulu, Hawai'i)  
TMK: 2-8-29-001 (por.)

Dear Mr. Fomby:

Thank you for your comment letter dated October 15, 2014 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project. The following responses are offered to your comments.

1. The Draft EA will address potential multimodal transportation measures to minimize traffic and parking on the local roadway network, as well as the short-term traffic congestion impacts during construction and long-term impacts after construction. The proposed facilities are planned to accommodate existing users and are not anticipated to significantly generate additional trips. The Manual of Transportation Engineering Studies (2000) recommends that a traffic impact study should be conducted whenever a proposed development will generate 100 or more added (new) peak direction trips to or from the site during the adjacent roadway's peak hours or the development's peak hours. Therefore, an updated Traffic Impact Assessment Report is not warranted.
2. We acknowledge that there are two bus stops fronting the Law School. The Draft EA will describe the impacts of the project on public transportation operations during construction. The bus will be contacted if the bus routes will be affected by the project.
3. Construction documents will include notes regarding transit services. The contractor will be required to notify of the Department of Transportation Services, Public Transit Division of the scope of work, location, proposed closure of any street, traffic lane, sidewalk, or bus stop and duration of project at least two weeks prior to construction.
4. The Manoa Neighborhood Board No. 7, area residents, businesses, emergency personnel, and TheBus, will be kept apprised of the details of the proposed projects and impacts, particularly during construction, the project may have on the adjoining local street area network.
5. Construction materials and equipment will be transported to and from the project site during off-peak traffic hours.
6. The project will include on-site bicycle facilities.

7. All access driveways to the project will be kept safe for pedestrians and bicyclists.

We appreciate your participation in the environmental review process. Please contact us if you have questions or require additional information.

Sincerely,  
GROUP 70 INTERNATIONAL, INC.

Christine Mendes Ruotola, ACP, LEED AP  
Principal

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11<sup>TH</sup> FLOOR  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8480 • Fax: (808) 768-4567  
Web site: [www.honolulu.gov](http://www.honolulu.gov)



ROBERT J. KRONING, P.E.  
DIRECTOR DESIGNATE  
MARK YONAMINE, P.E.  
DEPUTY DIRECTOR

October 21, 2014

RECEIVED

OCT 23 2014

GROUP 70 INTL.

Group 70 International  
925 Bethel Street, 5<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Attn: Christine Ruotola

Dear Ms. Ruotola:

Subject: Pre-Consultation for Draft Environmental Assessment (EA)  
Law School Master Plan, University of Hawaii Mānoa Campus  
(Mānoa Valley, Honolulu, Hawaii)  
TMK: 2-8-29-001 (por.)

The Department of Design and Construction does not have comments to offer on the pre-consultation for draft environmental assessment.

Thank you for the opportunity to review and comment. Should there be any questions, please contact me at 768-8480.

Sincerely,

*for Mr. Kroning*  
Robert J. Kroning, P.E.  
Director Designate

RJK: cf (581264)



GROUP 70  
INTERNATIONAL

October 27, 2014

Robert J. Kroning, Director Designate  
City and County of Honolulu  
Department of Design and Construction  
650 King Street, 11<sup>th</sup> Floor  
Honolulu, HI 96813

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Tom Young, MBA  
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Paul T. Matusida  
PE, LEED AP  
Ma Ry Kim  
REBA, AEB

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawaii Mānoa Campus  
(Mānoa Valley, Honolulu, Hawaii)  
TMK: 2-8-29-001 (por.)

Dear Mr. Kroning:

Thank you for your comment letter dated October 21, 2014 concerning the Pre-Consultation for Chapter 343, Hawaii Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We acknowledge that the Department of Design and Construction has no comments to offer at this time.

We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

*Christine Mendes Ruotola*

Christine Ruotola  
Principal Planner

OF COUNSEL

Ralph E. Portmore  
FACP

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**  
650 SOUTH KING STREET, 7<sup>TH</sup> FLOOR • HONOLULU, HAWAII 96813  
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October 31, 2014

RECEIVED 2014/ELOG-1789(GT)  
2009/PRU-3

GEORGE I. ATTA, FAICP  
DIRECTOR  
ARTHUR D. CHALLOMBE  
DEPUTY DIRECTOR

Ms. Christine Ruotola  
Group 70 International, Inc.  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813-4398

Dear Ms. Ruotola:

**SUBJECT:** Pre-Consultation for Draft Environmental Assessment (EA)  
Plan Review Use Permit No. 2009/PRU-3  
(Resolution No. 09-341, CD1, FD1)  
University of Hawaii at Manoa - Law School Master Plan  
Tax Map Key 2-8-29: 1

This responds to your letter, received September 22, 2014, concerning the proposed Law School Master Plan for the University of Hawaii at Manoa (UHM). We have determined that the proposal requires a Minor Modification to the Plan Review Use (PRU) Permit No. 2009/PRU-3 for the UHM campus, approved by the City Council on March 17, 2010, as Resolution No. 09-341, CD1, FD1.

Because of potential impacts to existing drainage patterns and traffic circulation, which are of significant importance to the PRU approval, please contact the Department of Planning and Permitting, Civil Engineering Branch (CEB) and Traffic Review Branch (TRB) directly and provide more details on the project for their comments, and include their comments in the Draft Environmental Assessment. Please contact Marvin Fukagawa of the CEB at 768-8096 regarding drainage issues, and Mel Hirayama of the TRB at 768-8077 regarding traffic issues. We have enclosed a copy of the application instructions for your reference. This application should include adequate information and analysis to directly address any drainage and/or traffic issues. If you have any questions, please call Gerald Toyomura of our Urban Design Branch at 768-8056.

Very truly yours,

*George I. Atta*  
For George I. Atta, FAICP  
Director

Enclosure: Application Instructions

Doc 1181175



**GROUP 70**  
INTERNATIONAL

December 31, 2014

George Atta, FAICP Director  
City and County of Honolulu  
Department of Planning and Permitting  
650 King Street, 7<sup>th</sup> Floor  
Honolulu, HI 96813

**Subject:** Pre-Consultation for Chapter 343, HRS Environmental Assessment  
Law School Master Plan, University of Hawaii at Manoa Campus  
(Manoa Valley, Honolulu, Hawaii)  
TMK: 2-8-29:001 (por.)

Dear Mr. Atta:

Thank you for your comment letter dated October 31, 2014 concerning the Pre-Consultation for Chapter 343, Hawaii Revised Statutes (HRS) Environmental Assessment (EA) for the Law School Master Plan project.

We have contacted your Civil Engineering Branch and Traffic Review Branch for their comments. An updated traffic assessment will be prepared based on the comments and will be included in the Draft EA.

We respectfully request your reconsideration for the Plan Review Use (PRU) Minor Modification requirement for the above project. The proposed improvements are within the scope already approved in the PRU permit No. 2009/PRU-3 (March 17, 2010). As reference, a PRU Minor Modification was not required for the UH's Center for Microbial Oceanography (C-MORE) project, as it was also consistent with the approved 2010 PRU.

In the case that the PRU Minor Modification shall be required for this project, we would appreciate your clarification on which criteria were used to make such determination and why it is different from the C-MORE project.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

*Christine Mendes Ruotola*  
Christine Mendes Ruotola  
Principal, Planning

OF COUNSEL  
Ralph E. Portmore  
FAICP

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**  
650 SOUTH KING STREET, 7<sup>TH</sup> FLOOR • HONOLULU, HAWAII 96813  
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GEORGE I. ATTA, FAICP  
DIRECTOR  
ARTHUR D. CHALLACOMBE  
DEPUTY DIRECTOR  
RECEIVED 2015/ELOG-5(G1)  
2009/PRU-3

January 27, 2015

JAN 29 2015

GROUP 70 INTL

Ms. Christine Ruotola  
Group 70 International, Inc.  
925 Bethel Street, 5th Floor  
Honolulu, Hawaii 96813-4398

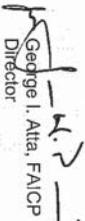
Dear Ms. Ruotola:

**SUBJECT:** Pre-Consultation for Draft Environmental Assessment (EA)  
Plan Review Use (PRU) Permit No. 2009/PRU-3  
(Resolution No. 09-341, CD1, FD1)  
University of Hawaii at Manoa - Law School Master Plan  
Tax Map Key 2-8-29: 1

This responds to your letter, received January 2, 2015, concerning the proposed Law School Master Plan for the University of Hawaii at Manoa (UHM). We have reviewed your request to reconsider the determination of a PRU minor modification for the University of Hawaii at Manoa - Law School Master Plan. Following up on the meeting of November 24, 2014, with yourself and Chris Hong of Group 70 International, Inc.; Karen Sakai and Matt Nakamoto of Austin Tsutsumi & Associates, Inc.; Mei Hirayama of Traffic Review Branch (TRB) and Gerald Toyomura of Urban Design Branch (UDB), to obtain more information and clarify the project, we have determined that a Minor Modification to the Plan Review Use (PRU) Permit No. 2009/PRU-3 will not be required with the condition that an updated traffic assessment report be prepared and the concerns of Civil Engineering Branch (CEB) and Traffic Review Branch (TRB) are addressed in the Draft EA.

Should you have any questions, please call Gerald Toyomura of our Urban Design Branch at 768-8056.

Very truly yours,

  
George I. Atta, FAICP  
Director