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UNIVERSITY of HAWAI'I SYSTEM

Jan S. Gouveia
Vice President for Administration

October 16, 2020

Keith Kawaoka, Acting Director
State of Hawai'i, Department of Health
Office of Environmental Quality Control
235 South Beretania Street, Room 702
Honolulu, Hawai'i 96813

Subject: Republication of the Draft Environmental Assessment and Anticipated Findings of No Significant Impact for the Mixed-Use Affordable Housing Project at the University of Hawai'i at Mānoa Campus
Tax Map Keys (TMK): (1) 2-8-023:009
Honolulu, O'ahu, Hawai'i

Dear Mr. Kawaoka:

The University of Hawai'i (UH) herewith transmits for republication the unchanged, previously submitted subject Draft Environmental Assessment for which it Anticipates a Finding of No Significant Impact (DEA-AFONSI). The DEA-AFONSI has been prepared pursuant to Chapter 343, Hawai'i Revised Statutes and Chapter 11-200.1, Hawai'i Administrative Rules (HAR).

The DEA-AFONSI was initially published in the OEQC's September 8, 2020 issue of *The Environmental Notice* with the comment period ending on October 8, 2020. We are republishing the DEA-AFONSI to initiate a second public review period of thirty (30) days. Please note that comments received during the first comment period, which ended on October 8, 2020, do not need to be resubmitted.

Attached to the DEA-AFONSI are graduate student and faculty housing data; a flora and fauna survey; an archeological literature review and field inspection report; reconnaissance level architectural surveys; a traffic impact report; and copies of the comments received during pre-assessment consultation along with the corresponding responses regarding the subject project.

We respectfully request the republication of this DEA-AFONSI in the upcoming issue of OEQC's *The Environmental Notice*. Please contact our consultant Mr. Allen Kam, Belt Collins Hawai'i, at (808) 521-5361 if you have any questions.

Sincerely,

Jan Gouveia
Vice President for Administration
University of Hawai'i

cc: Ethen Thacher, Greystar Development Services, LLC
Allen Kam, Belt Collins Hawai'i

21-070

2444 Dole Street, Bachman Hall 109H
Honolulu, Hawai'i 96822
Telephone: (808) 956-6405 • Fax: (808) 956-9701
An Equal Opportunity/Affirmative Action Institution

From: webmaster@hawaii.gov
To: HI Office of Environmental Quality Control
Subject: New online submission for The Environmental Notice
Date: Friday, October 16, 2020 10:12:30 AM

Action Name

Mixed-Use Affordable Housing at the University of Hawai‘i at Mānoa Campus -- Republished Draft EA (AFNSI)

Type of Document/Determination

Changed or republished version of a previously published item (explain in Summary below)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Honolulu, O‘ahu

Tax Map Key(s) (TMK(s))

(1) 2-8-023:009

Action type

Agency

Other required permits and approvals

See document

Proposing/determining agency

University of Hawai‘i at Mānoa

Agency contact name

Jan Gouveia

Agency contact email (for info about the action)

jgouveia@hawaii.edu

Agency contact phone

(808) 956-6405

Agency address

2444 Dole Street
Bachman 109H
Honolulu, HI 96822
United States
Map It

Accepting authority contact name

Jan Gouveia

Accepting authority contact email or URL

jgouveia@hawaii.edu

Accepting authority contact phone

(808) 956-6405

Accepting authority address

2444 Dole Street
Bachman 109H
Honolulu, HI 96822
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

Belt Collins Hawaii

Consultant contact name

Allen Kam

Consultant contact email

akam@bchdesign.com

Consultant contact phone

(808) 521-5361

Consultant address

2153 North King Street
Suite 200
Honolulu, HI 96819
United States
Map It

Action summary

The proposing agency is republishing the Draft EA originally published on September 8, 2020 to provide for another statutory 30-day public review and comment period. Please note that comments received during the first comment period which ended on October 8, 2020, do not need to be resubmitted. The University of Hawai‘i at Mānoa has partnered with Greystar Development Services, LLC to design, build, finance, operate and maintain a multi-family mixed-use rental housing project for graduate students and faculty on its campus. The Proposed Action will demolish three existing structures at the Project Site and construct a new building that includes 2 adjoining towers connected by a 2-story podium ranging from 12 to 18 stories in height. The project will be comprised of up to 400 individual housing units, placed within with a mix of studios, one-, two- and three-bedroom apartment units. The first 2 floors of the housing complex will be dedicated to childcare center, retail and circulation.

Attached documents (signed agency letter & EA/EIS)

- OEQC_Cover-Letter_DRAFT_Revised-2020-10-15_Revised.pdf
- 2020-08-28-DEA-UHM-Multifamily.pdf

Action location map

- Project_Location.zip

Authorized individual

Allen Kam

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

UNIVERSITY of HAWAI'I®

and

GREYSTAR™

The Global Leader in Rental Housing

Mixed-Use Affordable Housing Project at the University of Hawai'i at Mānoa Campus

DRAFT ENVIRONMENTAL ASSESSMENT

August 2020

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ACRONYMS AND ABBREVIATIONS

AAS	Atomic Absorption Spectrophotometry
ACM	Asbestos Containing Materials
amsl	above mean sea level
AQI	Air Quality Index
AsCM	Arsenic Containing Materials
BDPS	Building Design and Performance Standards
BMP	Best Management Practice
BWS	Board of Water Supply
CFR	Code of Federal Regulations
CIA	Cultural Impact Assessment
City	City and County of Honolulu
Cl	chlorine
COPC	Contaminants of Potential Concern
CWA	Clean Water Act
CZM	Coastal Zone Management
DAR	Department of Land and Natural Resources, Division of Aquatic Resources
DOH	Department of Health
EALs	Environmental Actional Levels
EHE	Environmental Hazard Evaluation
EHMP	Environmental Hazard Management Plan
EPA	Environmental Protection Agency
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
ft	feet
HAR	Hawaiʻi Administrative Rules
HECO	Hawaiian Electric Company
HED	High Energy Discharge
HID	High-Intensity Discharge
HIOSH	Hawaiʻi Occupational Safety and Health
HRS	Hawaiʻi Revised Statutes
HUD	Housing and Urban Development
IBC	International Building Code
ICP	Inductively Coupled Plasma
in	inches
KOP	Key Observation Point
LBP	lead-based paint

LEED	Leadership in Energy and Environmental Design
LRDP	Long Range Development Plan
m	meter
MBTA	Migratory Bird Treaty Act
mg/kg	milligrams per kilograms
mg/l	milligrams per liter
MIA	Makiki stony clay loam
mm	millimeters
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
P3	Private-public partnership
PCBs	Polychlorinated biphenyls
PLM	Polarized Light Microscopy
PRU	Plan Review Use
PUC DP	Primary Urban Center Development Plan
rRk	Rock land
SCS	Soil Conservation Service
sf	square feet
SLR-XA	sea level rise exposure area
State	State of Hawaiʻi
TOD	Transit-Oriented Development
TDMP	Transportation Demand Management Plan
UBC	Uniform Building Code
UHM	University of Hawaiʻi at Mānoa
USDA	United States Department of Agriculture

SUMMARY

PROPOSING AGENCY:	University of Hawaiʻi
APPROVING AGENCY:	University of Hawaiʻi
RECORDED FEE OWNER:	University of Hawaiʻi
DEVELOPER:	Greystar Development Services, LLC
LOCATION:	Mānoa Valley, Waikīkī Ahupuaʻa, Honolulu, Island of Oʻahu
TAX MAP KEY:	(1) 2-8-023:009
PROJECT SUMMARY:	The University of Hawaiʻi at Mānoa (UHM) has partnered with Greystar Development Services, LLC to design, build, finance, operate and maintain a multi-family mixed-use rental housing project on its campus. The primary purpose of the proposed action is to provide below-market rate housing units to UHM graduate students and junior faculty. The Proposed Action will demolish three existing structures at the Project Site and construct a new building that includes two adjoining towers connected by a two-story podium ranging from twelve to eighteen stories in height. The project will be comprised of up to 400 individual housing units, placed within a mix of studios, one-, two- and three-bedroom apartment units. The first two floors of the housing complex will be dedicated to childcare center, retail and circulation. The proposed childcare facility will replace the existing "UH Mānoa Children's Center," located at 2600 Campus Road which currently serves over 100 children of UHM students and employees between the ages of two and five years old.
PROJECT SITE:	The proposed building will be constructed on buildable area of the 2.21-acre site of the former National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) located on the UHM Campus at 2570 Dole Street. The Project Site is bound by Dole Street to the South, Mānoa Stream to the East, Burns Hall to the West and the East-West Center to the North.

EXISTING USE:	The Project Site is currently used by UHM for temporary parking, storage and surge space.
CITY AND COUNTY ZONING:	R-5: Residential
STATE LAND USE DISTRICT:	Urban
PERMITS AND APPROVALS:	A Minor Modification Permit to UHM's Plan Review Use (PRU) Permit No. 2009/PRU-3 (Resolution No. 09-341, CD1, FD1) will be required based on consultation with the City & County of Honolulu Department of Planning and Permitting (DPP). Because the Project Site is owned by UHM, which is a State of Hawaiʻi entity, compliance with Chapter 343, Hawaiʻi Revised Statutes (HRS) is required. *See* HRS §343-5(a)(1).
CONSISTENCY WITH LAND USE PLANS AND POLICIES:	**<u>City and County of Honolulu</u>** Oʻahu General Plan Primary Urban Center Development Plan Land Use Ordinance Plan Review Use **<u>State of Hawaiʻi</u>** Hawaiʻi State Plan State Functional Plans State Land Use Law State Coastal Zone Management (CZM) Long Range Development Plan
ANTICIPATED DETERMINATION:	Finding of No Significant Impact (FONSI)
PRELIMINARY CONSULTATION:	**<u>Federal Agencies</u>** U.S. Army Corps of Engineers U.S. Fish and Wildlife Services **<u>State Agencies</u>** Department of Land and Natural Resources Engineering Division Land Division Division of Aquatic Resources Division of Water Resource Management Division of Boat and Ocean Recreation Historic Preservation Division

	Oʻahu Island Burial Council Office of Conservation and Coastal Lands Department of Health Environmental Health Administration Clean Water Branch Environmental Management Division Department of Education Department of Business, Economic Development and Tourism Office of Hawaiian Affairs **State Legislative Branch** Senator Brian Taniguchi—Senate District 11 Representative Della Au Belatti—House District 24 **City & County Agencies** Honolulu Fire Department Honolulu Police Department Board of Water Supply Department of Transportation Services Department of Environmental Services Department of Parks and Recreation Department of Facility Maintenance Department of Planning and Permitting Department of Design and Construction **City Council** Council Member Ann Kobayashi **Other Interested Parties** 2121 Ala Wai 411 Kaiolu Inc. Ala Wai Plaza Ala Wai Skyrise Ala Wai Watershed Association Aloha Towers AOAO The Twin Towers Inc. Ariali Realty Inc. Au, Robert D.M. & Au, Audrey M. Chen, Francis & Edna Trust Four Paddle

	Gayer, Donna L. & Gayer, John J.D. Hale Moani Hawaiian Electric Company, Inc. ʻIolani School Kaimana Lanais Kapiʻolani Gardens Kapiolani Real Estate LLC La Casa Lanikea at Waikīkī Lanikea at Waikīkī Mānoa Neighborhood Board No. 7 McCully/ Mōʻiliʻili Neighborhood Board No. 8 Diamond Head/ Kapahulu/ St. Louis Heights Neighborhood Board No. 5 N T P Lynn's Investment Corp. Pacific Living Trust Ramos, Juan I. Rosalei Ltd. The Promenade WBL Inc. Wheeler, Family Trust

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1 INTRODUCTION

1.1 BACKGROUND

The University of Hawaiʻi at Mānoa (UHM) is an R1: Research University, internationally recognized as one of the nation's leading land-, sea- and space-grant institutions, offering undergraduate, graduate and professional degrees. UHM is renowned for its unique, multicultural educational experience in a Hawaiian place of learning, with a long history of adherence to the principles of sustainability and the essence of aloha. The 305+ acre campus is located in Mānoa Valley on the island of Oʻahu and currently serves over 12,600 undergraduate students and 4,800 graduate students (MIRO, 2019). The campus currently offers seven dorm-style residence halls, one graduate and multi-family apartment complex and three faculty apartment/condominium complexes (*see* Appendix A). The new housing facility is identified as one of several projects in the UHM Long Range Development Plan (LRDP) Update intended to support UHM's goal of providing a "live-work-play" environment that fosters inclusivity and connectivity for campus community members.

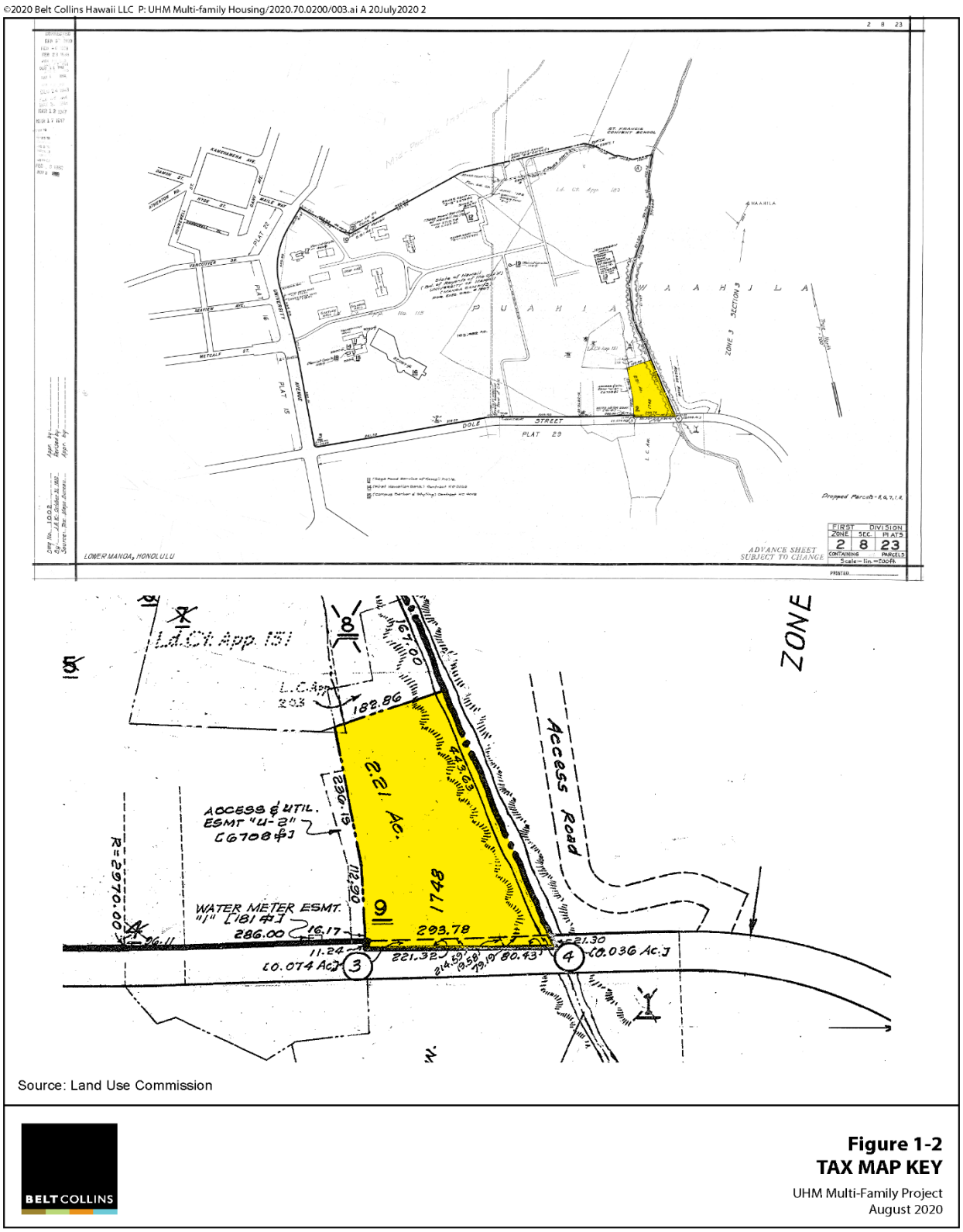
The latest update to the LRPD was completed in 2007 and the Plan Review Use (PRU) permit for the LRDP was approved by the Honolulu City Council in 2010. The PRU identified eighteen campus projects. A number of these projects have not yet been or were only partially completed, as UHM has shifted their focus primarily to address deferred maintenance and renovation projects to modernize their existing physical plant. By repurposing and renovating their current facilities the UHM has been able to maximize the use of existing space and work well within the projected square footage set forth within their PRU.

1.2 PROJECT LOCATION

UHM's campus is located in lower Mānoa Valley, approximately one mile north of the Waikīkī and Ala Moana neighborhoods and three miles east and inland of Downtown Honolulu (*see* Figure 1-1: Location Map). The proposed building will be constructed on buildable area of the 2.21-acre site of the former National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) which is located at 2570 Dole Street [TMK: (1) 2-8-023:009] at the southeast boundary of UHM's "Upper Campus" (the "Project Site") (*see* Figure 1-2). The 2.21-acre parcel is bounded by Dole Street to the south, the Mānoa Stream to the east, Burns Hall building to the west and Hawaiian Electric Company (HECO) "Substation M" to the north (*see* Figure 1-3). The existing structures on the Project Site include two single-story buildings (approximately 3,500 and 8,400 sf) in the northern section of the parcel and one two-story building (19,920 sf) on the southern boundary of the property (WCIT, 2017; Mason, 2020; DPP, 2020). (*see* Figure 1-4).

Figure 1-1: Location Map

Figure 1-2: Tax Map Key

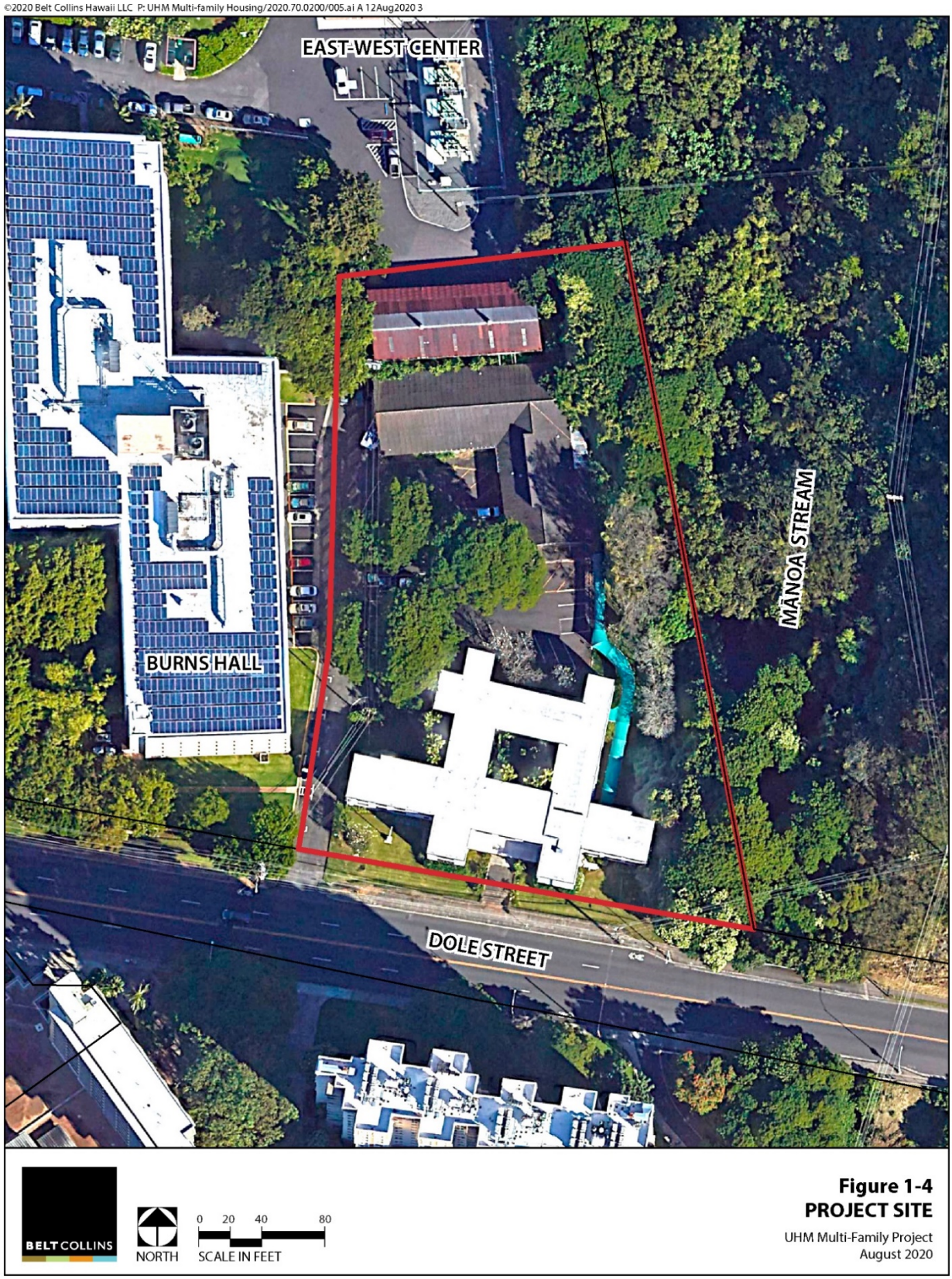


Source: Land Use Commission

Figure 1-2
TAX MAP KEY
UHM Multi-Family Project
August 2020

Source: Land Use Commission

Figure 1-4: Project Site



1.3 PROJECT DESCRIPTION

UHM has entered a public-private partnership (P3) with Greystar Development Services, LLC (the "Developer") to design, build, finance, operate and maintain a multi-family mixed-use rental housing project for UHM students and junior faculty that will provide rental rates below the market of the areas surrounding the UHM campus (the "Proposed Action"). The Proposed Action aims to achieve a "live, work, play" environment for students and residents and support long-term sustainability and connectivity goals for UHM by reducing the number of students commuting to campus each day and expanding the campus' rental pool. Design elements aim to reflect the traditions, history and spiritual significance of Mānoa Valley and Hawaiian culture, with shaded common areas that visually connect pedestrians and residents to Mānoa Stream and green corridors between the "Upper Campus" and "Lower Campus." These design features are also consistent with the energy efficiency status of Leadership in Energy and Environmental Design (LEED) Silver, aiming to set a precedent for ecologically sensitive and sustainable campus development (*see* Figure 1-5).

The Proposed Action will demolish three existing structures on the 2.21-acre property and construct a new building that consists of two adjoining towers, a makai tower of no less than twelve stories and a mauka tower not to exceed eighteen (18) stories in height, connected by a two-story podium. The mixed-use, multi-family housing facility will include up to 400 individual housing units with a mix of studio, one-, two- and three-bedroom units. The bottom floors of the complex will be dedicated to childcare, retail, circulation and gathering spaces (*see* Figure 1-6). The childcare facility will replace the existing "UH Mānoa Children's Center," located at 2600 Campus Road, Queen Liliʻuokalani Center for Student Services #414B, which currently serves over 100 children of UHM students and employees between the ages of two and five years old. A small retail space is intended to promote gathering and circulation and will be accessible to residents and campus users. The Project Site is located in close proximity to the majority of campus amenities, including the existing athletic fields, dining centers, the UHM campus center and Warrior Recreation Center.

Figure 1-5: Conceptual Design Renderings

Source: NAC Architecture. All of the images are for illustrative purpose only and subject to change.

Figure 1-6: Proposed Site Plan

1.4 PURPOSE AND NEED

The primary purpose of the Proposed Action is to provide affordable, family-oriented housing to UHM graduate students and junior faculty that are unable to utilize existing rental housing on the UHM campus or afford market rental housing in surrounding neighborhoods. UHM has identified the need for housing as a priority for future growth on the UHM campus. Due to the high cost of living in Hawaiʻi, especially in the areas surrounding the UHM campus, many UHM students are forced to reside in other regions of the island and commute each day. The existing supply of subsidized housing is in high demand and therefore can only accommodate students and faculty that meet specific eligibility criteria (*see* Appendix A).

Existing residential facilities on the UHM campus only accommodate 21% of the total student body, while housing demand continues to increase. UHM aims to grow on-campus housing options in the long-term and achieve the themes of creating a "Globally Connected Hawaiian Place of Learning, Leadership and Service; Livable Urban Campus; and Outdoor Spaces for Living and Learning (UHM 2007)."

The Proposed Action is consistent with the planning and design guidelines set forth in the current 2007 LRDP and is one of several projects identified in the forthcoming 2019 LRDP update. It is in alignment with the guiding principles of the UHM Framework for the Future and Building Design and Performance Standards (BDPS) for the campus. The proposed structures will be developed in accordance with applicable standards of the Primary Urban Center Development Plan (PUC DP) and all applicable laws, rules and ordinances of the City and County of Honolulu (the "City") and the State of Hawaiʻi (the "State").

1.5 LAND TENURE

The Project Site is located on land currently owned by UHM. Previously, the land was held by NOAA as part of the Pacific Islands Fisheries Science Center Facilities. Upon the departure of NOAA after determining the facilities were not feasible to renovate or transform, the land was conveyed to UHM (WCIT 2017). The Developer will hold the sole-responsibility to design, build, finance, operate and maintain the proposed mixed-use, multi-family housing project under a long-term ground lease and property management arrangement. Upon the expiration of the long-term ground lease, ownership of the building will revert back to UHM, unless otherwise agreed by the parties. The Project Site is zoned as R-5 (residential) under the City ordinances and classified as Urban under the State Land Use statute (*see* Figure 1-7: Zoning Map and Figure 1-8: State Land Use Map). The Proposed Action will be permitted under a Minor Modification to the existing PRU (2009/PRU-3) following an environmental review in compliance with HRS §343.

Figure 1-7: Zoning Map

Figure 1-8: State Land Use Map

1.6 DEVELOPMENT SCHEDULE

Construction of the project is anticipated to begin by Spring 2023 and end by Summer 2025. The housing facility is anticipated to open for the Fall 2025 semester.

1.7 ESTIMATED COST

The project is anticipated to cost approximately $85 million.

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2 DESCRIPTION OF THE EXISTING ENVIRONMENT, IMPACTS AND MITIGATION

2.1 EXISTING LAND USE

The Project Site was formerly occupied by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) (*see* Figure 2-1). Upon their departure, the site was conveyed to UHM. The existing structures include two single-story buildings (approximately 3,500 and 8,400 sf) in the northern section of the parcel and one two-story building (19,920 sf) on the southern boundary of the property (WCIT 2017; Mason 2020; DPP 2020). The main entrance of the southern-most building leads onto Dole Street by a stairway flanked by two basalt rock walls with cement adhesive. The site is currently used by UHM for temporary parking, storage and surge space, as permitted by its existing PRU.

The majority of ground surface around the three buildings is paved for parking and walking paths. Landscaping on the property is limited to grasses, manicured hedgerows, a single plumeria tree at the front entrance and various palm tree species in the center courtyard. Mānoa Stream runs along the east portion of the parcel, limiting the amount of buildable land at the Project Site. A rip-rap embankment leads down to the stream from the east facing structure. A bridge crosses over the stream along Dole Street.

2.2 REGIONAL SETTING

The UHM campus spans approximately 305+ acres of land in Mānoa Valley, located in the moku (district) of Kona (renamed to Honolulu in 1859) and the Mānoa/Waikīkī Ahupuaʻa (USGS 1998). Mānoa is a wide, generally flat valley floor that is within the PUC DP of Honolulu. The valley extends back approximately three or more miles from the Project Site until it meets the Koʻolau Mountain range. Residential neighborhoods, public facilities and commercial shopping centers reaching into the back of the valley serve nearly eleven-thousand residents, according to 2010 census data (Upper Mānoa - 3,335 | East Mānoa - 2,415 | UHM Campus - 5,093).[1]

The climate of Mānoa Valley is characterized by relatively stable tropical temperatures, ranging from an average low of 70.9 degrees Fahrenheit (F) in January, to an average high of 77.7 degrees F in August. The summer season, from May through September, is generally warm and dry with predominant northeast trade winds that range between eight to fifteen miles per hour (mph). The winter season, from October to April, is generally characterized by higher rainfall and less prevalent trade winds (SCS 2020).

[1] https://census.hawaii.gov/census_2010/demographic/demo_profile_ct_oahu/ (DEBT 2010)

Figure 2-1: Existing Land Use

Aerial front view

Front view

Source: University of Hawaiʻi at Mānoa

Side front view

Side Elevation, Left Side of Dole Street

Side Elevation, Right Side of Dole Street

Front Elevation, Left Side

Front Elevation, Right Side

Center Courtyard

Rear Elevation, North Wing

Rear View, Shared parking area and existing structures

Annex Building

Mānoa Stream, East Property Boundary

Mānoa Stream, Rip-Rap Embankment

Dole Street Bridge at Mānoa Stream

2.3 PHYSIOGRAPHY

2.3.1 Geology

Mānoa Valley is located at the base of the Koʻolau Mountains, formed over several hundred thousand years of eruption and erosion activity known as the Honolulu Volcanic series. Lava and sedimentation flowing through the valley formed hard basalt underlying the valley floor.

2.3.2 Topography

The regional topography of Mānoa Valley generally slopes down around five degrees towards the ocean. The Project Site slopes down south towards Dole Street and east towards Mānoa Stream. A lava rock retaining wall, built in 1953, fronts the south side of the building. There is an approximate six-foot difference in elevation from the building finish floor to the sidewalk along Dole Street. The Dole Street roadway alignment has a vertical crest curve at approximately the driveway along the west side of the property, thus the frontage of the site along Dole Street slopes to the east (*see* Figure 2-2: Topography Map).

Elevations at the eastern portion of the Project Site drop abruptly where the existing structures meet the embankment edge of Mānoa Stream. Stream topographic elevations are 65 feet (ft) and 62 ft above mean sea level (amsl) to the east of the NOAA Building, with the top of the bank at elevations of 78 ft to 84 ft. The stream elevation at the Dole Street Bridge is at 57 ft (WCIT 2017).

2.3.3 Soils

According to the United States Department of Agriculture (USDA) Soil Conservation Service's (SCS) *Soil Survey of Islands of Kauaʻi, Oʻahu, Maui, Molokaʻi and Lānaʻi, State of Hawaiʻi*, there are two distinct soils in the Project Site: Makiki stony clay loam (MIA) and Rock land (rRk) (USDA SCS, 2019)(*see* Figure 2-3: Soil Map).

The majority of the Project Site is composed of Makiki stony clay loam, which is characterized by zero to three percent slopes with a high concentration of angular stones, making up approximately fifteen percent of the soil by volume (Foote et al. 1972:92). This soil is typically characterized as well drained and level in topography, but often contains enough stones to hinder cultivation. Basalt cinders typically reach depths of twenty to sixty inches; basalt outcrops are common. The soil is neutral to slightly acid. The Capability Classification is IIIs, non-irrigated, which indicates severe limitations for cultivation due to stony and shallow conditions, unfavorable texture and low water-holding capacity.

The eastern edge of the property, bordered by the Mānoa Stream, consists of Rock land. This land typically consists of twenty-five to ninety percent exposed rock, with forty to seventy

Figure 2-2: Topography Map

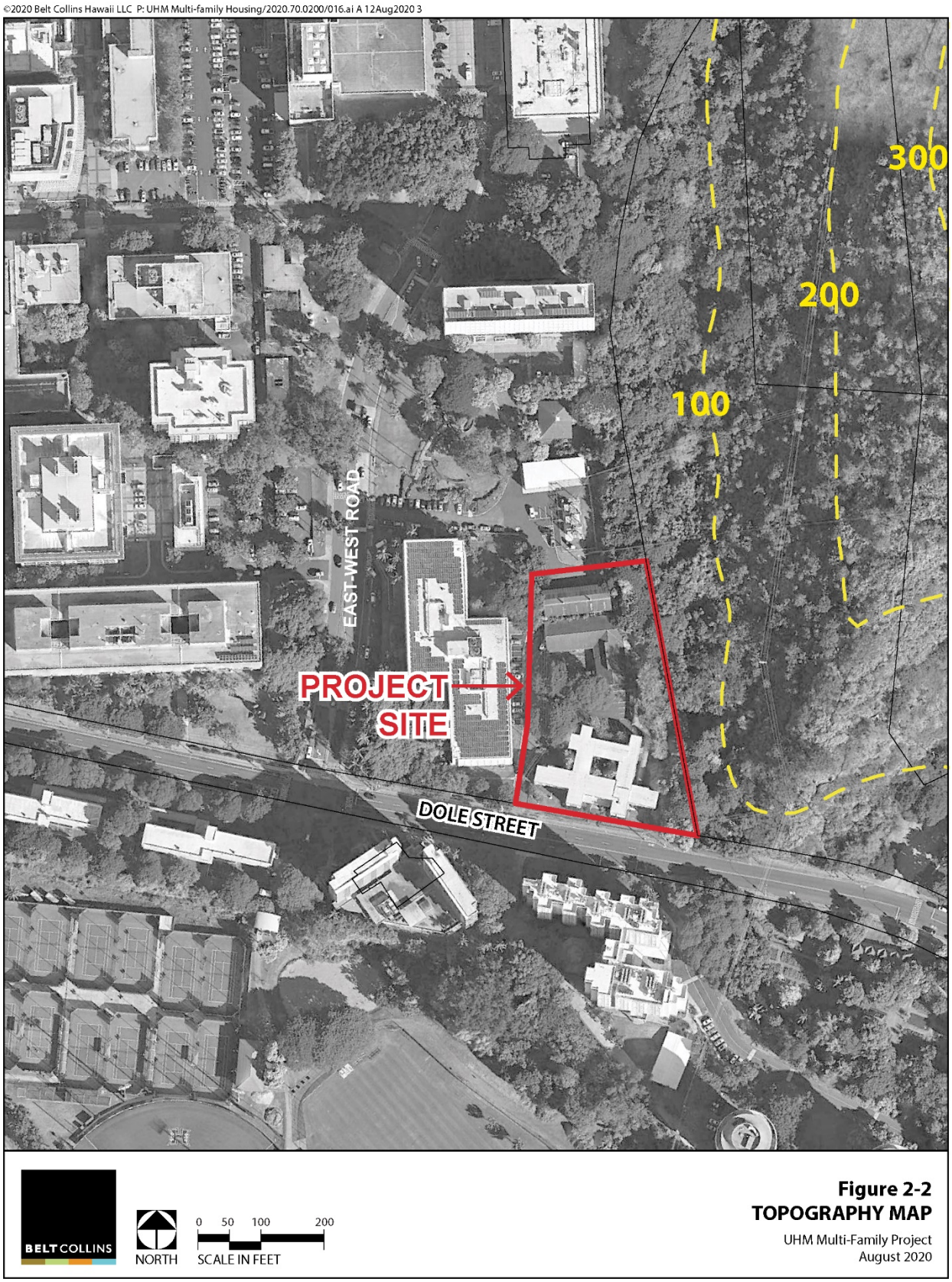
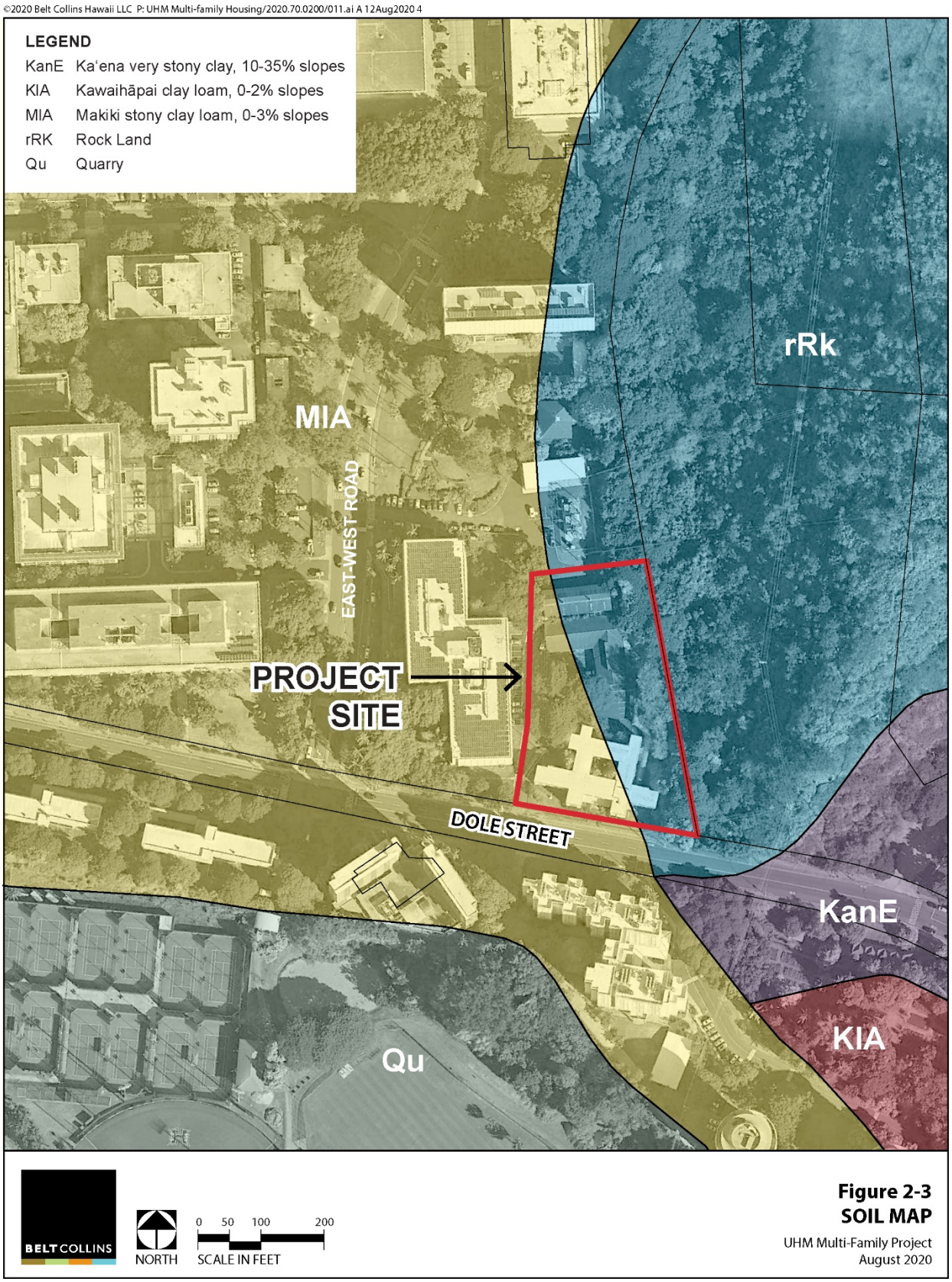


Figure 2-3: Soil Map



percent slopes and soils less than a few inches deep. Stones are common and can roll to lower areas when loosened (Foot et al. 1972:30).

2.3.3.1 Impacts and Mitigation

The Proposed Action would implement construction and planting phases to limit the potential for surface disturbance during construction. All excavation and grading activities will be regulated by applicable provisions of the City's grading ordinances (Hawaiʻi Administrative Rules (HAR) Chapter 14, Articles 13 through 16) and any SHPD requirements for archaeological monitoring. Excavation and grading activities will incorporate erosion control best management practices (BMPs) to preserve existing conditions of nearby surface waters, such as:

- Temporary sediment basins;
- Temporary diversion berms and swales to intercept runoff;
- Silt fences;
- Dust fences;
- Slope protection;
- Stabilized construction vehicle entrance;
- Grate inlet protection;
- Truck wash down areas; and
- Use of compost filter socks.

Permanent sediment control measures will be used once construction is complete. No short- or long-term significant impacts to soils are anticipated during construction or operation of the Proposed Action, and no additional mitigation is required.

2.4 HYDROLOGY

2.4.1 Rainfall

The mean annual rainfall in the vicinity of the Project Site is approximately 864 millimeters (mm) or 34 inches (in), ranging from an average low of about 36.5 millimeters (mm) (1.4 in) in June to an average high of about 118.8 mm (4.7 in) in December (SCS 2020).

2.4.2 Groundwater

The Project Site is located in the Honolulu Sector, Palolo Aquifer System (Geologic Code 3010111), in which the groundwater is unconfined basal in flank lava. The aquifer is currently used to supply fresh drinking water (with less than 250 milligrams per liter [mg/l] of chlorine), that is considered irreplaceable and highly vulnerable to contamination (Status Code 11111). According to Mink and Lau (1987), the water table in all unconfined basal aquifers is forty ft or less amsl.

2.4.2.1 Impacts and Mitigation

The Proposed Action would adhere to stringent BMPs during construction and operation to preserve groundwater resources. No wastewater injection wells, contaminated materials or wastes would be released into the ground. Any materials or wastes produced during construction or operations would be handled in compliance with the necessary City or State regulatory requirements. No short- or long-term significant impacts to groundwater are anticipated during construction or operation of the Proposed Action, and no additional mitigation is required.

2.4.3 Surface Water

Surface waters near the Project Site include Mānoa Stream, which is located within the Ala Wai Watershed (*see* Figure 2-4). Surface waters of Mānoa Stream descend from the Koʻolau Mountains (3,105 ft), run through Mānoa Valley and eventually discharge into the Ala Wai Canal. According to the 2016 report by AECOS entitled *Biological and Water and Sediment Quality Surveys in Mānoa Stream, Honolulu, Hawaiʻi,* the Project Site is located within the "middle reach" of Mānoa Stream, which is classified as Class 2 inland waters (AECOS 2016) (*see* Figure 2-5: Inland Water Classification Map). HAR §11-54 defines Class 2 waters as follows:

> *"The objective of Class 2 waters is to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping and navigation. The uses to be protected in this class of waters are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation on and in these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new treated sewage discharges shall be permitted within estuaries."*

Data from the *2014 State of Hawaiʻi Water Quality Monitoring and Assessment Report* (HDOH, 2014a) determined that Mānoa Stream was not meeting criteria for its designated beneficial uses, as described above, and is therefore considered "impaired" on the Clean Water Act (CWA) §303(d) list.

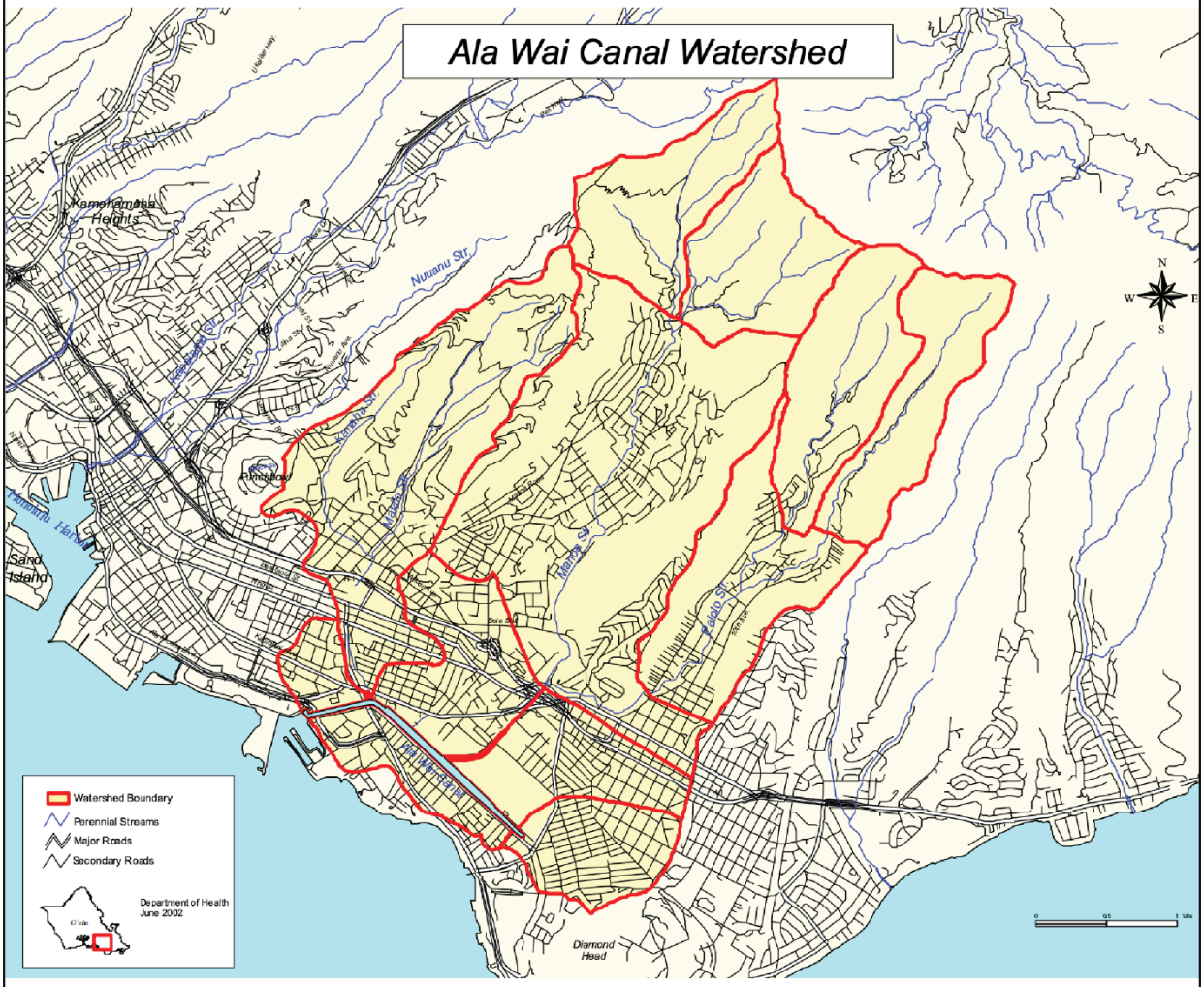
2.4.3.1 Impacts and Mitigation

The Proposed Action would adhere to stringent BMPs during construction and operation to preserve surface water resources. There would be no encroachment on any waters of the United States (U.S.), and therefore additional permitting with the Army Corps of Engineers would not be required. Any discharges related to the construction or operation of the Proposed Action would comply with applicable State Water Quality Standards as specified in HAR §11-54 and HAR §11-55. A National Pollutant Discharge Elimination System (NPDES)

permit would be obtained for storm water runoff during construction activities if soil disturbances exceed one acre of land at the Project Site. Because of the Project's close proximity to Mānoa Stream, the Developer will coordinate with Ka Papa Lo`i O Kanewai to monitor the water quality of Mānoa Stream entering the lo`i. There are no anticipated impacts to aquatic resources, however in the extremely unlikely event that accidental discharges occur the Department of Land and Natural Resources, Division of Aquatic Resources (DAR) will be notified immediately. No short- or long-term significant impacts to surface waters are anticipated during construction or operation of the Proposed Action, and no additional mitigation is required.

Figure 2-4: Map of Ala Wai Watershed

©2020 Belt Collins Hawaii LLC P: UHM Multi-family Housing/2020.70.0200/017.ai A 12Aug2020 2



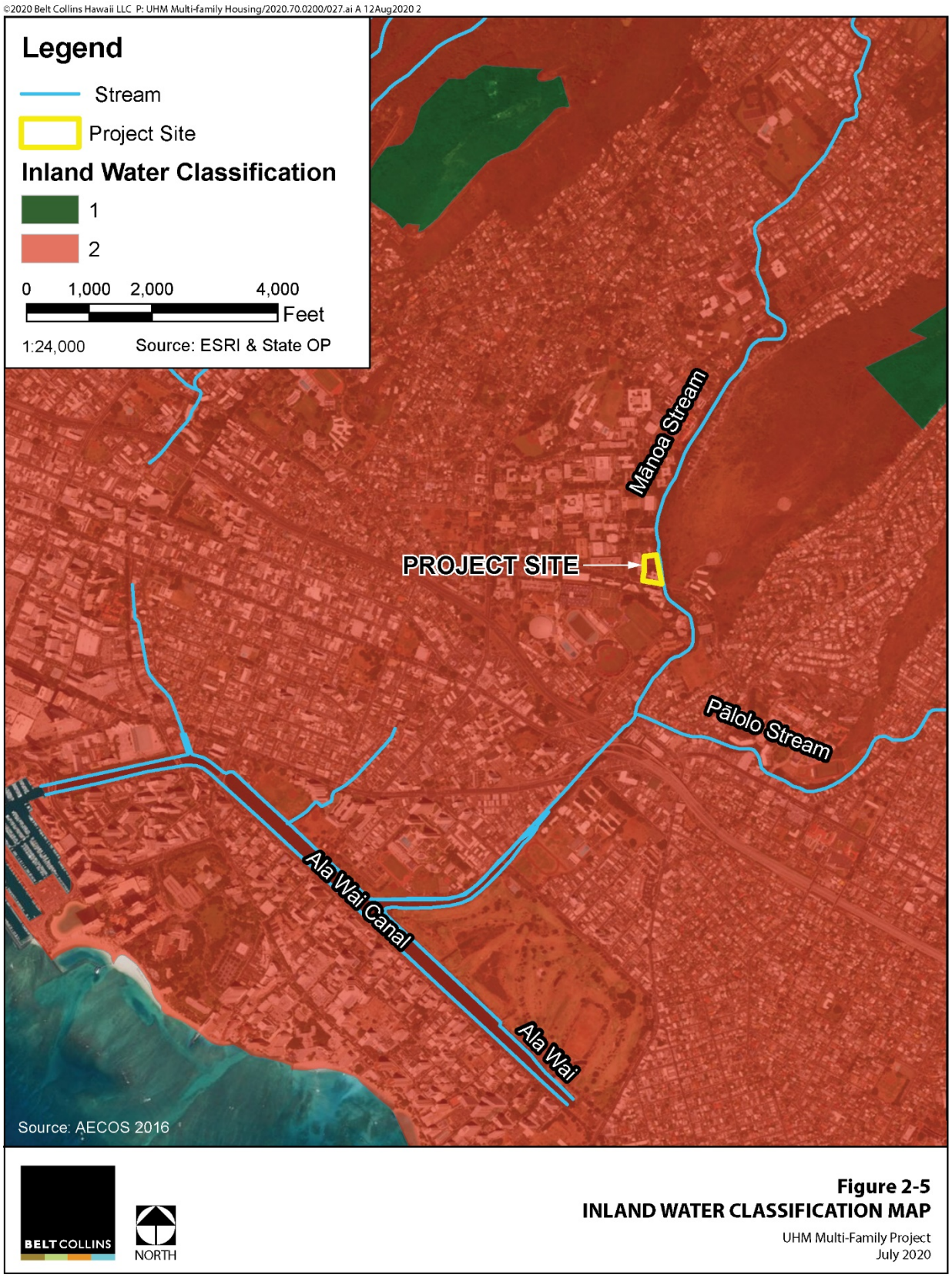
Source: DOH 2002

BELT COLLINS

NORTH

Figure 2-4
MAP OF ALA WAI WATERSHED
UHM Multi-Family Project
August 2020

Figure 2-5: Inland Water Classification Map



2.4.4 Coastal Water

The nearest coastal water is located off of Waikīkī Beach in Māmala Bay, approximately 1.6 miles south of the Project Site (*see* Figure 2-6: Water Quality Classification Map). Mānoa Stream flows into Māmala Bay after entering the Ala Wai Canal. The Ala Wai Canal also receives waters from the Palolo and Makiki Streams prior to entering Māmala Bay. According to HAR §11-54, these coastal waters are classified as Class A marine waters and recognized as follows (HDOH, 2014b):

> *"It is the objective of Class A waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving water for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new sewage discharges will be permitted within embayments. No new industrial discharges shall be permitted within embayments."*

2.4.4.1 Impacts and Mitigation

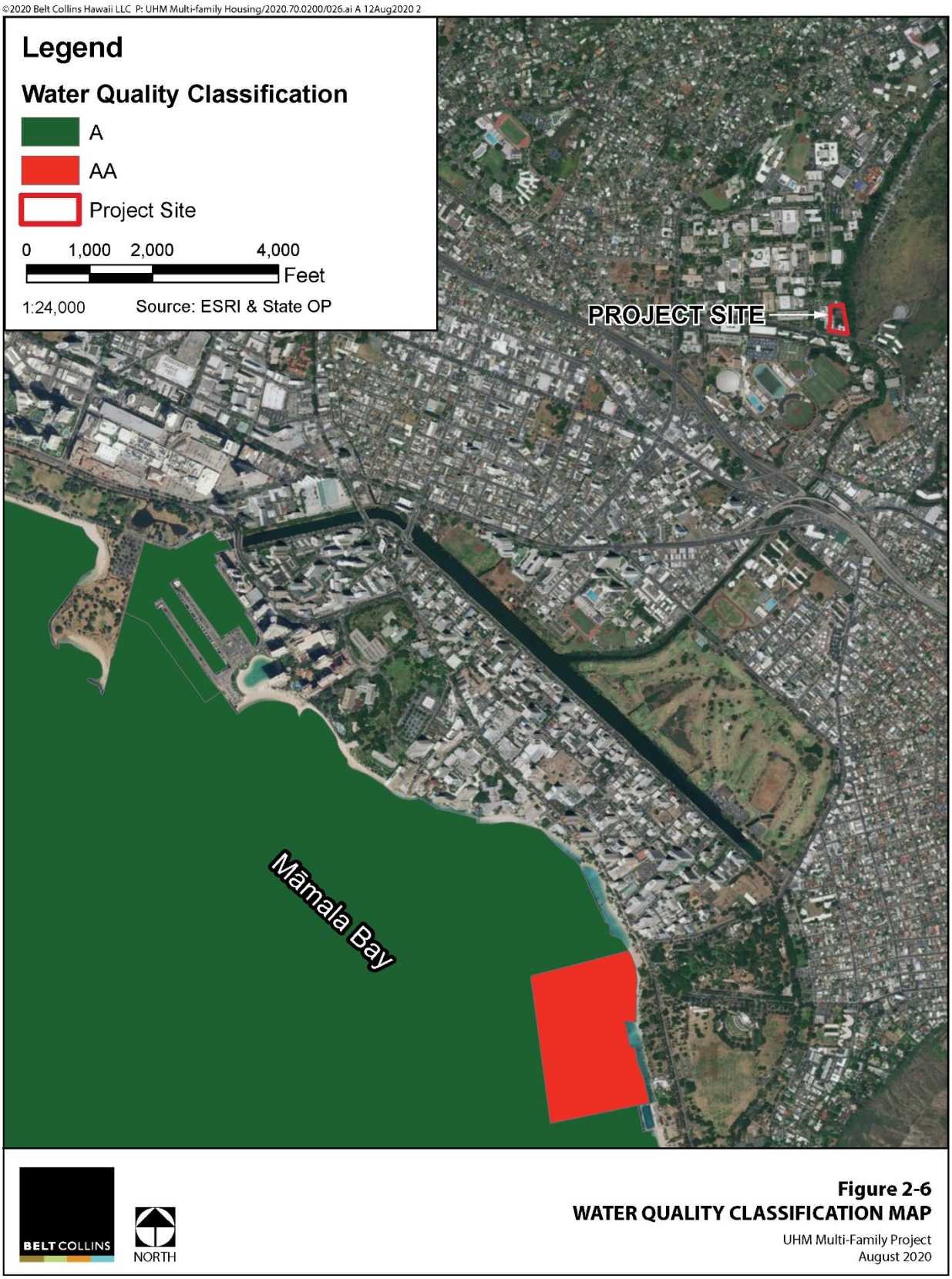
The Proposed Action would adhere to stringent BMPs during construction and operation to preserve coastal water resources. No discharges would occur to groundwater, surface waters or coastal waters. Any materials or wastes produced during construction or operations will be handled in compliance with the necessary City or State regulatory requirements. No short- or long-term significant impacts to coastal waters are anticipated during construction or operation of the Proposed Action, and no additional mitigation is required.

2.5 NATURAL HAZARDS

2.5.1 Climate Change

As the Earth's climate continues to shift around the world, it is recognized that island communities are particularly vulnerable to natural hazards. Current projections of sea level rise anticipate a 3.2 ft sea level rise exposure area (SLR-XA) as early as 2060 (Sweet et al., 2017), leading to a series of consequential impacts such as coastal erosion, intermittent flooding, storm surges, king tides and contamination of groundwater. Although the Project Site is not located within the 3.2-ft SLR-XA (*see* Figure 2-7), it is anticipated that these impacts may soon require City and State planning entities to adapt land use regulations and mitigation for increasing climate hazards. Storms, drought and heavy rains are also expected to increase in frequency and volatility, causing more flash

Figure 2-6: Water Quality Classification Map



flooding, runoff, sedimentation and potential impacts to existing infrastructure in regions across Oʻahu.

2.5.1.1 Impacts and Mitigation

No significant impacts are anticipated as the Proposed Action will adhere to applicable plans and policies related climate change mitigation and adaption, such as:

- Mayor's Directive on Climate Change (Directive 18-2);
- Land Use and Zoning Recommendations;
- Transit-Oriented Development (TOD) Adaption Guidelines;
- Building Code Updates;
- Future Conditions Climate Resilience Design Guidelines;
- Long Term Disaster Recovery Plan; and,
- Climate Adaption Strategy.

2.5.2 Flood

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM), the majority of project site is designated as Zone "X" which is determined to be outside the 0.2% annual chance flood plain (*see* Figure 2-8). The portion of the parcel that borders Mānoa Stream is designated as Zone AEF which is determined to be within the 1% annual chance flood plain. The vertical limits of Zone AEF lie approximately twelve ft below the top of the stream bank. Although the proximity to Mānoa Stream may pose a moderate risk during extreme flood events, no significant risk is anticipated under normal conditions.

In October 2004, Mānoa Valley experienced a major flash flood event that caused severe damage to the UHM campus and surrounding residences. Post-flood studies conducted by the U.S. Army Corps of Engineers indicated the cause to be insufficient capacity of clogged drainage channels in upper Mānoa Valley that pushed floodwaters overtop channel banks onto new courses and paths. Drainage channels have since been improved and repaired so that major flood impacts are not expected to pose imminent threats to the area. Potential impacts from flash flooding at Mānoa Stream may include erosion and sedimentation in nearby waters. However, overall risk to surrounding infrastructure is considered low.

Figure 2-7: Sea Level Rise Exposure Map

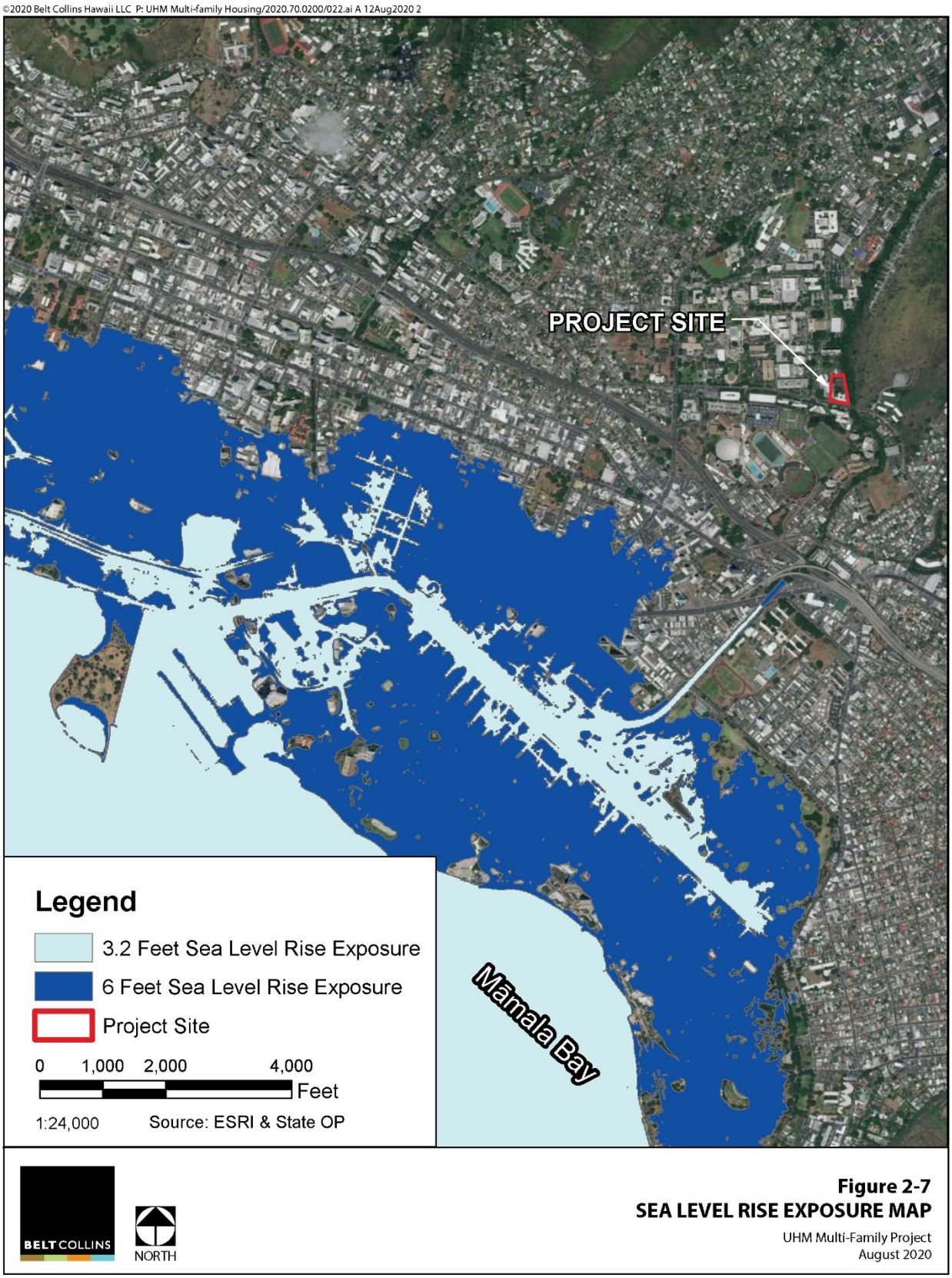
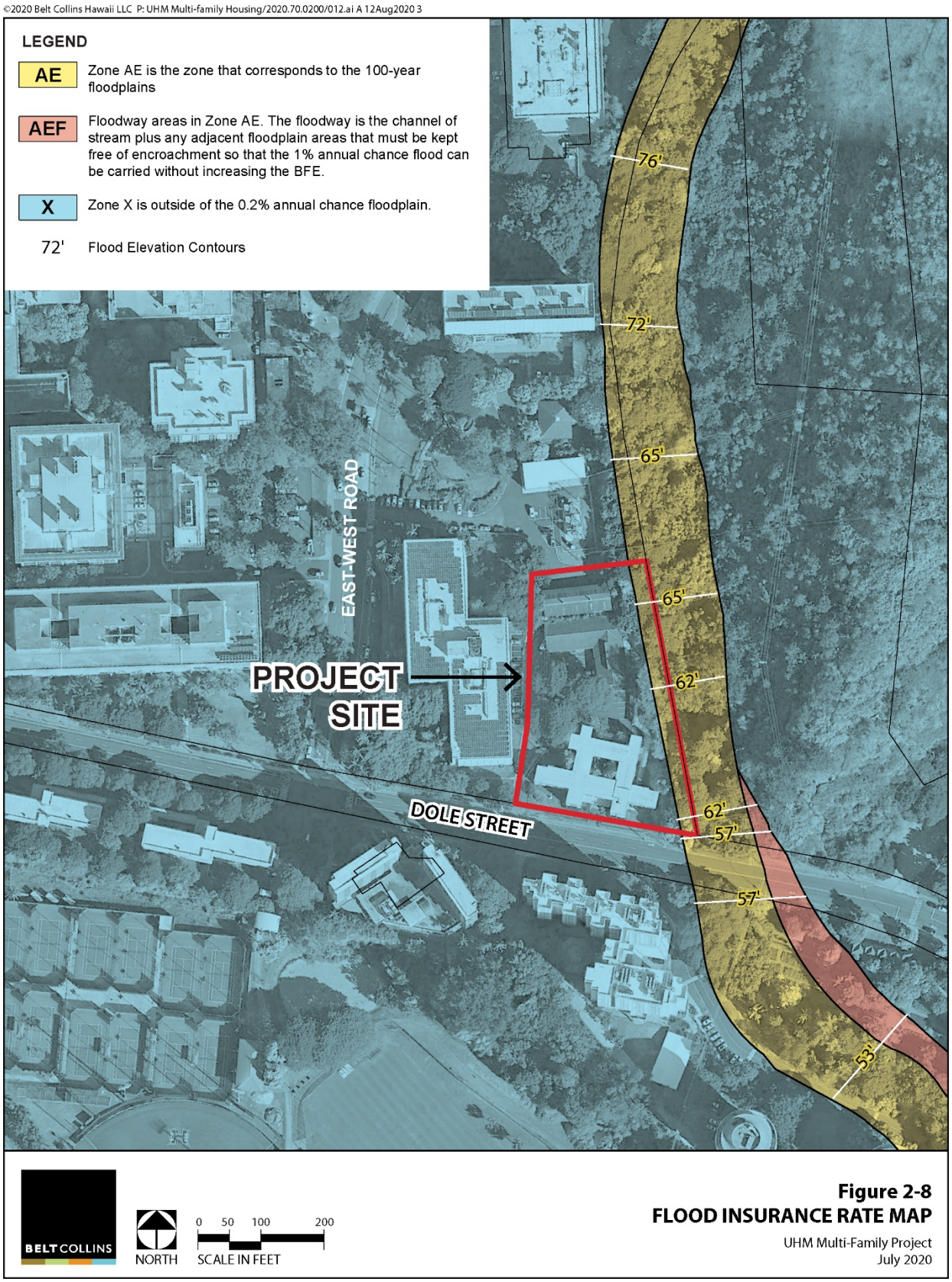


Figure 2-8: Flood Insurance Rate Map



2.5.2.1 Impacts and Mitigation

The Proposed Action would incorporate safety measures and built-in flood protection safeguards, such as elevated first floor and flood proofed walls, to minimize hazards at the Project Site. No construction activities or operations would occur within Zone AEF. Therefore, no short- or long-term significant impacts from flood hazards are anticipated, and no additional mitigation is required.

2.5.3 Tsunami

According to the City's Tsunami Evacuation Zone map, the Project Site lies entirely within the tsunami evacuation safe zone and would not be impacted by any tsunami inundation (*see* Figure 2-9: Tsunami Hazard Map).

2.5.3.1 Impacts and Mitigation

No short- or long-term significant impacts from tsunami hazards are anticipated, and no additional mitigation is required.

2.5.4 Hurricane

In Hawaiʻi, seasonal hurricanes have the potential to cause severe damage to property, land and life, primarily occurring from the late summer and early winter months. Early warning systems, such as Civil Defense sirens, radio and television broadcasts and news reports are deployed to provide residents with time to prepare and evacuate susceptible areas and situations. Specific impacts of a hurricane at the Project Site are difficult to predict due to differences in atmospheric pressure, tidal stage, topography and location of the site relative to the eye of a storm.

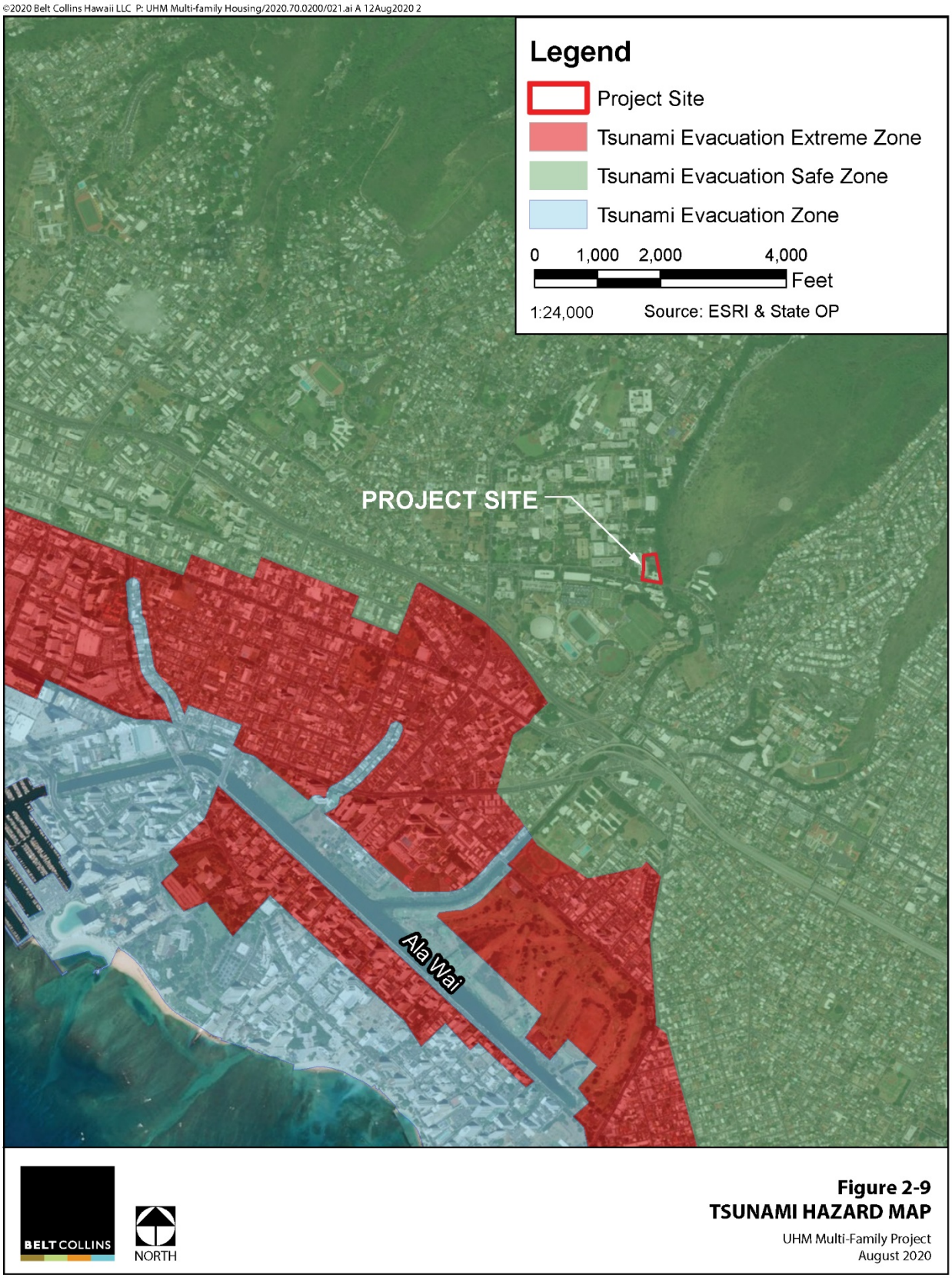
2.5.4.1 Impacts and Mitigation

The Proposed Action would be constructed in accordance with enhanced wind design criteria, which are more stringent than the International Building Code (IBC), as adopted and amended by the City. No short- or long-term significant impacts from hurricane hazards are anticipated, and no additional mitigation is required.

2.5.5 Earthquake

Earthquakes associated with volcanic or tectonic activity occur frequently in Hawaiʻi; however, many are too small to cause noticeable effects. The southern shoreline of Oʻahu lies within the Molokaʻi Seismic Zone, which is classified as 2A Seismic Zone under the Uniform Building Code (UBC) with earthquakes that may cause minor damage to structures. The majority of risk associated with earthquakes come from partial or total building collapse,

Figure 2-9: Tsunami Hazard Map



falling objects, debris and shattering glass. Although Oʻahu has not experienced significant impacts from earthquakes in recent decades, the Honolulu coastline is considered to have moderately high vulnerability to earthquakes (Fletcher et al., 2002).

2.5.5.1 Impacts and Mitigation

The Proposed Action would adhere to local building codes to minimize potential impacts of future seismic activity. No short- or long-term significant impacts from earthquake hazards are anticipated, and no additional mitigation is required.

2.6 HAZARDOUS MATERIALS

A *Hazardous Materials Assessment Survey* was conducted by Bureau Vistas at the Project Site as a part of the Hawaiʻinuiākea Architectural Design Program (WCIT 2017). The purpose of this survey was to assess the existing structures prior to potential future renovation activities. The survey analyzed building material samples for the presence of asbestos-containing materials (ACM), lead-based paint (LBP) and arsenic-containing materials (AsCM), as well as the visual inspection of polychlorinated biphenyls (PCB)-containing materials. The survey also conducted a subsurface soil assessment for the presence of chemicals of potential concern (COPC) due to the historical application of pesticides at the Project Site.

2.6.1 Building Hazards

2.6.1.1 Asbestos

Thirty-eight types of suspect ACM were identified and sampled in accordance with HAR Title 11, Chapter 501, Standard for Demolition and Renovation. Suspect ACM samples were analyzed using the Environmental Protection Agency (EPA) Method 600R-93/116 polarized light microscopy (PLM). Table 2-1 provides a summary of the ACM sample collection results. The EPA and the State Department of Health (DOH) define ACM as materials that contain greater than one percent (1%) asbestos fibers. Laboratory analysis identified the following seven building materials that contain asbestos above the regulatory limit:

Table 2-1: Summary of Asbestos Sample Collection Results

Building Material	Material Location	Type & Percent
1st Floor		
9- by 9-inch black with white and green speckled vinyl floor tile	Rooms: 101, 101A, 101B, 107, 110, 111, 113, 117, 118, 119, 120, 122 and 123A	Chrysotile 4-5%

Building Material	Material Location	Type & Percent
black vinyl floor tile beneath 12- by 12-inch mauve vinyl floor tile	Rooms: 114, 114A and 116	Chrysotile 4%
black vinyl floor tile beneath 12- by 12-inch gray "peel-n-stick" vinyl floor tile	Room 108	Chrysotile 4-5%
white fibrous backing beneath 12- by 12-inch gray "peel-n-stick" vinyl floor tile	Room 109	Chrysotile 15%
2nd Floor		
9- by 9-inch black with white and green speckled vinyl floor tile	Rooms: 201, 203, 204, 205, 206, 207, 212, 213, 214, 214A, 215, 216, 217, 222, 223 and 224	Chrysotile 4-6%
black vinyl floor tile beneath 12- by 12-inch beige vinyl floor tile	Rooms: 210 and 221	Chrysotile 3-5%
black sink undercoating	Room 207	Chrysotile 6-14%

2.6.1.2 Lead

Seventeen paint samples were collected from interior and exterior surfaces of the existing structures in accordance with the Hawaiʻi Occupational Safety and Health (HIOSH) Lead in Construction Standards. The paint samples were analyzed for total lead content using EPA Method 7000B Atomic Absorption Spectrophotometry (AAS). Table 2-2 provides a summary of the LBP sample collection results. The EPA and the Department of Housing and Urban Development (HUD) defines paint as lead-based when it contains one-half percent (0.5%) or more lead-by-weight. Laboratory results identified the following five paints that contain lead concentrations above the regulatory limit:

Table 2-2: Summary of Lead Sample Collection Results

Paint Description/Location	Sampling Location	Lead Content Percent by weight
1st Floor		
Brown paint	Interior, corridor, beam	1.8000
2nd Floor		
White paint (over green and pink paints)	Interior, corridor, ceiling/eave	3.5000
Green paint (over beige paint)	Interior, janitor closet near Room 201	0.6500
Brown paint (over green and red paints)	Interior, stairway handrail, near Room 204 and Women's Restroom	0.6100
Brown paint	Interior, corridor, handrail	2.7000

2.6.1.3 Arsenic

Three (3) suspect AsCM were identified and collected for laboratory analysis in accordance with all applicable HIOSH requirements. Suspect AsCM samples were analyzed using the EPA recommended Method 3051/6010B inductively coupled plasma (ICP). Table 2-3 provides a summary of the AsCM sample collection results. The EPA defines a material as arsenic-containing when it contains an arsenic concentration of 100 milligrams per kilogram (mg/kg) or more. Laboratory samples identified the following two samples that contain arsenic above the regulatory limit:

Table 2-3: Summary of Arsenic Sample Collection Results

Material Description	Sampling Location	Arsenic (mg/kg)
2- by 2-foot fibrous holed "canec" wall and ceiling tile	Room 108, right wall near light switch	1,700.0
fibrous "canec" bulletin board	Room 213	96.0

2.6.1.4 Chemicals

Stored chemicals and readily accessible mechanical equipment (electrical transformers, smoke detectors, emergency lights, etc.) were assessed for the potential of environmentally-hazardous components. Fluorescent lighting fixtures were also assessed for the presence or absence of PCB-containing lighting ballasts and mercury-containing fluorescent bulbs. Mercury-containing materials are considered universal waste under HAR §11-273 and are managed in accordance with the 40 Code of Federal Regulations (CFR) Part 273. The study observed numerous suspect mercury-containing fluorescent light tubes and one high-intensity discharge (HID) / high energy discharge (HED) bulbs within the project structure.

2.6.1.5 Impacts and Mitigation

The Proposed Action would perform a thorough inspection for the presence of hazardous building materials prior to demolition activities. Proper removal, storage and disposal methods for each hazardous material would be conducted in accordance with all applicable City and State requirements. All contractors would adhere to stringent BMPs and mitigation measures to prevent the distribution of hazardous materials to the surrounding environment. Regulations for handling materials under the Occupational Safety and Health Administration (OSHA) would be implemented for worker safety. No significant impacts are anticipated, and no additional mitigation is required.

2.6.2 Soil Hazards

Three subsurface boreholes were tested for the presence COPC using the EPA recommended Method 8081. The COPC identified on-site was limited to organochlorine pesticide technical chlordane. Survey results were analyzed using the DOH Tier 1 Environmental Action Levels (EALs), which is the evaluation for sites located less than 150 meters from a surface body water or classified as a potential source of drinking water. The Project Site is located inland of the Underground Injection Control (UIC) Line, and therefore determined to have groundwater utility that is classified as a potential source of drinking water. Table 2-4 provides a summary of the soil sample results. The DOH Tier 1 EAL is 7.6 mg/kg. The study concluded that organochlorine pesticide technical chlordane is present in soils under the building below the concrete slab at concentrations less than DOH Tier 1 EAL.

Table 2-4: Summary of Soil Sample Collection Results

Location	Sample ID	Collection Interval	Sample Results (mg/kg)
B1–- Ground floor exterior concrete walkway by Room 114	S1	0.5 to 2 ft bgs	2.083
B2–- Ground floor exterior concrete walkway by Room 121	S2	0.5 to 1.5 ft bgs	0.120
B3 – Ground floor inside Room 105	S3	0.5 to 1 ft bgs	ND<0.050

2.6.2.1 Impacts and Mitigation

The Proposed Action would adhere to stringent BMPs during demolition and construction to manage pesticide-contaminated soils at the Project Site. It is recommended that an Environmental Hazard Evaluation (EHE) and Environmental Hazard Management Plan (EHMP) are prepared to evaluate potential hazards and address long-term management requirements associated with the pesticide-impacted soil. Proper removal, storage and disposal would be conducted in accordance with all applicable City and State requirements. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

2.7 NATURAL ENVIRONMENT

2.7.1 Flora

A *Flora and Fauna Survey* was conducted on June 26, 2020 by SWCA Environmental Consultants (*see* Appendix B) and the following is a summary of the findings. The Project Site is identified as an altered urban environment, with much of the area composed of buildings, paved parking and walking paths. Two vegetation types were identified on-site: landscaped

and streamside ruderal. Landscaped vegetation around the existing buildings include common ornamental species, such as plumeria (*Plumeria rubra*), hibiscus (*Hibiscus rosa-sinensis*), monkeypod (*Samanea saman*) and Bermuda grass (*Cynodon dactylon*). Streamside ruderal vegetation along Mānoa Stream include a range of non-native species that have adapted to disturbed streamside areas, such as parasol tree (*Macaragna tanarius*), Chinese banyan (*Ficus microcarpa*), koa haole (*Leucaena lecuocephala*) and Guinea grass (*Urochloa maxima*). No Federal- or State- listed species were identified at the Project Site. The vegetation types and plant species identified during the survey are not considered unique.

2.7.1.1 Impacts and Mitigation

The Proposed Action would adhere to stringent BMPs during construction and operation to preserve flora resources at the Project Site. Construction and landscaping phases would be implemented to control erosion and protect the existing natural landscape. No alterations would occur to the landscape within Zone AEF. Contractors would implement the following measures, wherever possible, to reduce the potential for unintended spreading of non-native plant species:

- Regularly clear equipment, materials and personnel of excess soils and debris;
- Minimize the movement of soil and plant material between worksites;
- Wash and/or inspect imported equipment and materials for the presence of invasive species by a qualified botanist or entomologist prior to entering the Project Site;
- Purchase raw construction materials (e.g. fill) from on-island supplies to avoid the introduction of non-native species;
- Maximize use of native plant species or non-invasive plant species for landscaping; and
- Sterilize gear, such as work boots and vehicles, to prevent the spread of fungal pathogens.

The Proposed Action would incorporate natural landscaping features that create shaded pedestrian corridors and gathering spaces for residents and visitors on the Project Site. Landscaping will remain consistent with the objectives established by UHM's LRDP. No short- or long-term significant impacts to flora are anticipated during construction or operation of the Proposed Action, and no additional mitigation is required.

2.7.2 Fauna

Fauna observed during the flora and fauna survey primarily consisted of common avian species found in urban, garden and disturbed waterways on Oʻahu. Of the fourteen species detected, only two were native species: the black-crowned night heron (*Nycticorax nycticorax*) or ʻAukuʻu and white tern (*Gygis alba*), also known as the Manu-o-Kū. These two species, as well as the house finch (*Haemorhous mexicanus*) and the cattle egret (*Bubulcus*

ibis) observed on-site, are protected by the Migratory Bird Treaty Act (MBTA). No native invertebrates were observed. Non-native mammal species observed during the survey include feral cats (*Felis catus*), domestic dogs (*Canis familiaris*) and small Indian mongoose (*Herpestes javanicus*).

Suitable nesting habitat for all of the observed species protected under the MBTA, including the State-listed white tern, was found on-site. White terns are generally known to nest around the UHM campus, but none were observed nesting during this survey. Suitable roosting and foraging habitat were identified for two Federal- and State-listed species: the Hawaiian Hoary Bat *(Lasirus cinereus semotus)* and Hawaiian Duck (*Anas wyvilliana*). However, the preferred habitats of the Hawaiian Duck, montane streams and marshlands, are not located at or near the Project Site. Suitable habitat for the Federal- and State- listed Hawaiian Stilt (*Himantopus mexicanus knudsen*i) was identified at the Papa Loʻi O Kānewai located downstream from the Project Site. None of these listed species were observed on the Project Site during the survey period and are not anticipated to occur on-site, with the exception of the Hawaiian Hoary Bat.

The Project Site does not overlap with critical habitat for any listed terrestrial faunal species and the on-site habitat is not expected to support any other listed species beyond those previously discussed.

2.7.2.1 Impacts and Mitigation

The Proposed Action would adhere to stringent BMPs during construction and operation to protect fauna and habitats located at the Project Site. Short-term alterations would occur to landscaping around the existing buildings. No alterations would occur along Mānoa Stream. There are no anticipated impacts to aquatic resources, however in the extremely unlikely event that accidental discharges occur DAR will be notified immediately. The following measures would be taken during construction to prevent potential disturbances to nesting or foraging sites at the Project Site:

- Conduct nesting bird surveys by a qualified biologist within 72 hours prior to initiating construction, tree trimming or tree removal activities or after three (3) or more consecutive days of inactivity;
- Report active nesting sites of white terns to the Department of Forestry and Wildlife (DOFAW) and avoid active branches until the nest is determined inactive by a qualified biologist;
- Avoid active nesting sites of other MBTA protected species until the nest is determined inactive by a qualified biologist;
- Avoid construction activities with the potential to create temporary or permanent standing water to prevent waterbirds, such as the Hawaiian Duck or Hawaiian Stilt, from entering the Project Site;

- Avoid nighttime construction work during the seabird fledging season, between September 15 and December 15;
- Use of downfacing and shielded light fixtures, to prevent the disruption of seabirds in flight; and
- Avoid impacts to vegetation during the Hawaiian Hoary Bat birthing and pupping season, between June 1 and September 15;

If avoidance is not possible during this time frame, the Developer will consult with DOFAW prior to any disturbance, trimming or removal of woody vegetation greater than 15 ft (4.6 m) in height. No short- or long-term significant impacts to fauna are anticipated, and no additional mitigation is required.

2.8 AIR QUALITY

Air quality data for the Project Site is based on the Air Quality Index reported by Honolulu, Hawaiʻi Station No. 9 located at the HECO's power plant in Downtown Honolulu. Existing air quality conditions are classified as "good" with no major pollutants exceeding the National Ambient Air Quality Standards. The six criteria pollutants set by the EPA include carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone and particulate matter. One additional criteria pollutant, hydrogen sulfide, is regulated in the State of Hawaiʻi to evaluate potential air quality impacts related to volcanic activity on Hawaiʻi Island. No major pollutant generators, such as industrial incinerators or manufacturing plants, have been identified in the area, and there are no heavily trafficked thoroughfares or intersections generating excessive exhaust. Air quality at the Project Site is generally maintained as "good" due to the consistent flow of northeasterly trade winds that disperse pollutants towards the ocean.

2.8.1.1 Impacts and Mitigation

The Proposed Action would adhere to stringent BMPs during construction and operation to preserve existing air quality conditions. Project phasing and mitigation measures will be used to control fugitive dust, such as installing dust fences, spraying water on exposed soils and replanting vegetation as soon as possible to reduce potential sources of short-term exposure. Potential emissions would be negligible and quickly dissipate by northeast trade winds crossing through the Project Site.

The Proposed Action is designed to encourage multi-modal transportation systems, such as pedestrian, bicycle and public transit, that will not contribute to long-term air emissions. No short- or long-term significant impacts to air quality are anticipated during construction or operation of the Proposed Action, and no additional mitigation is required.

2.9 ACOUSTIC ENVIRONMENT

The acoustic environment surrounding the Project Site is consistent with an urban-residential setting. The majority of existing sound impacts are related to UHM activities as students and faculty travel across the campus along Dole Street. These activities occur throughout the week, and at a lesser extent in the evenings and on the weekends. Soundscapes of Mānoa Stream may be audible during these quieter hours.

2.9.1.1 Impacts and Mitigation

The Proposed Action would have short-term impacts to the acoustic environment from construction activities, such as excavation, grading and paving, that would vary according to the particular phase of construction. Mitigation measures would include the use of noise-attenuating equipment, such as mufflers and adherence to noise curfews. Each contractor would be responsible for maintaining noise levels within the regulatory limits, pursuant to HAR §11-46, "Community Noise Control." Contractors would be required to obtain a noise permit if construction noise levels are expected to exceed regulatory limits.

The Proposed Action would have a slight increase in long-term ambient noise levels due to an increase in pedestrian, residential and childcare activities at the Project Site. These impacts would generally occur during weekday hours and be consistent with the existing uses and activities. No short- or long-term significant impacts to the acoustic environment are anticipated, and no additional mitigation is required.

2.10 SCENIC RESOURCES

The visual characteristics of the Project Site provide a balance of urban and natural settings. The built environment includes several mid-sized buildings that accommodate classroom, office and residential activities on the UHM campus. Scenic resources accessible from the Project Site include the Mānoa Stream and Waʻahila Ridge. Visibility down to the stream while on the parcel is limited due to the presence of dense foliage between the stream and developed area. Unobstructed views of Mānoa Stream may be obtained while on the pedestrian bridge across Dole Street or other points of access across campus. More distant scenic resources include Diamond Head Crater, Waikīkī Beach and the Koʻolau Mountains beyond Mānoa Valley.

The Developer considered several design schemes with a focus on the scenic resources when determining building height, setback and configuration. Careful consideration was given to the visual impact and mass the buildings would create along Dole Street and the surrounding neighborhoods. Some of the alternative design schemes considered, but rejected for their potential impacts, included two 15-story buildings and setbacks closer to Dole Street. See Section 6: Alternatives Considered for more details. The preferred design scheme is

consistent with the visual characteristics of the surrounding area, for examples *see* Figure 2-10: KOP (Dole Street x St Louis Drive) through Figure 2-14: KOP (Alphonse Place x Waʻahila Ridge).

2.10.1.1Impacts and Mitigation

The Proposed Action would remain consistent with the visual characteristics of the surrounding area, including both urban and natural settings. Both structures of the housing facility will adhere to development guidelines of the City, State and UHM. The following key observation points (KOPs) were selected to assess the potential for visual impacts of the Proposed Action on scenic resources:

1. Dole Street and St Louis Drive (*see* Figure 2-10: KOP (Dole Street x St Louis Drive))
2. Dole Street and Mānoa Stream (*see* Figure 2-11: KOP (Dole Street x Mānoa Stream))
3. Dole Street and University Avenue (*see* Figure 2-12: KOP (Dole Street x University Avenue))
4. Dole Street and East-West Road (*see* Figure 2-13: KOP (Dole Street x East-West Road))
5. Alphonse Place across Waʻahila Ridge (*see* Figure 2-14: KOP (Alphonse Place x Waʻahila Ridge))

The Proposed Action is consistent with the character and size of surrounding buildings and does not anticipate having any significant impact to scenic resources in the surrounding area. Visual accessibility to Mānoa Stream will remain consistent with existing conditions. No significant impacts to scenic resources are anticipated, and no additional mitigation is required.

Figure 2-10: Key Observation Point (Dole Street x St Louis Drive)

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Figure 2-10
KOP (Dole Street x St. Louis Drive)
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Figure 2-11: Key Observation Points (Dole Street x Mānoa Stream)

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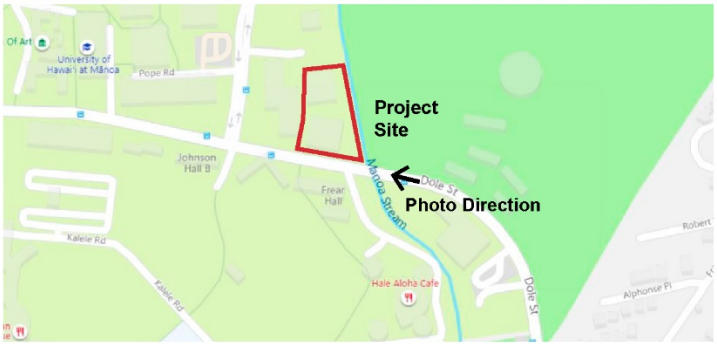

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Figure 2-11
KOP (Dole Street x Mānoa Stream)
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Figure 2-12: Key Observation Points (Dole Street x University Avenue)

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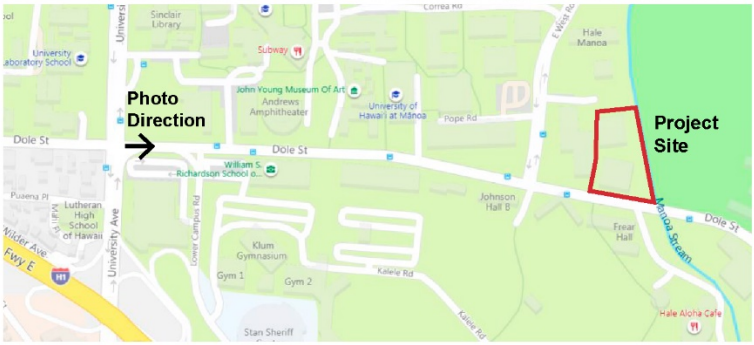

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Figure 2-12
KOP (Dole Street x University Avenue)
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Figure 2-13: Key Observation Points (Dole Street x East-West Road)

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Figure 2-13
KOP (Dole Street x East-West Road)
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Figure 2-14: Key Observation Points (Alphonse Place x Waʻahila Ridge)

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Figure 2-14
KOP (Alphonse Place x Waʻahila Ridge)
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August 2020

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3 HISTORIC, ARCHAEOLOGICAL AND CULTURAL RESOURCES

3.1 HISTORIC PROPERTIES

Three buildings exist on the Project Site, but none are presently listed on the Hawaiʻi or National Register of Historic Places. The two single-story annex buildings and the two-story NMFS administrative building were constructed at the Project Site after the Territory of Hawaiʻi conveyed the land to UHM in support of the Pacific Ocean Fisheries program.

In 1949, the U.S. Fish and Wildlife Service sought bids to construct the administrative building and selected noted architect Guy Rothwell to design the structure. The final design was minimalist in form, devoid of ornamentation and subtly invoked earlier interpretations of "International Style" along the lines of Hawaiʻi's 1940's military construction (Mason 2020). The finished building was a two-story stucco structure that contained 50 rooms, including biological and chemical laboratories, offices and a library. The adjacent annex buildings housed biological collections, aquaria for experiments, a cold storage refrigeration plant, a garage and a workshop (Mason 2020). In 1970, when NOAA was formed, the administrative and annex buildings were moved under their jurisdiction.

A Reconnaissance Level Survey (RLS) was conducted by Mason (2020) on the Project Site (attached as Appendix C) to evaluate whether the three buildings are eligible for listing on the Hawaiʻi and National Registers of Historic Places. The RLS noted that while the NMFS building has historic significance for its role in NOAA and commercial fishing, substantial changes to the original design and character over the past 70 years have resulted in the loss of this building's historic integrity. It also found that while the two annex buildings were previously part of the NMFS complex, neither was individually eligible for listing and the loss of the administrative building's historic integrity rendered grouping the buildings as a historic site or district inappropriate. Based on this, the RLS determined that none of the buildings are eligible for listing on the State or National Registers.

3.1.1.1 Impacts and Mitigation

The Proposed Action would demolish all three existing structures on the Project Site. None of these structures are considered eligible for historic listing. Therefore, no significant impact to historic properties would occur, and no additional mitigation is required.

3.2 CULTURAL RESOURCES

The Project Site is located within the moku (district) of Kona, within the Waikīkī Ahupuaʻa and the ʻili of Mānoa. The Project Site was utilized during the pre-European Contact and Historic periods by Native Hawaiians for agriculture and scattered habitation-sites. This is consistent with many moʻolelo (story/legend/history) of Mānoa Valley that described it as

containing abundant freshwater sources such as streams and springs. Agriculture, mainly wetland kalo (taro) cultivation in loʻi and inland fishponds, covered most of the Mānoa Valley floor during the pre-European Contact and early Historic periods. Historic accounts of Mānoa Valley describe the quantity and quality of agriculture production in the region being a continuous spread of loʻi and fishponds extending from the valley out to the sea.

During the post-European Contact period, agriculture cultivation continued in the valley and it was a favored spot of aliʻi. During this time, the land use and landscape appearance were similar to that of the pre-European Contact period landscape. However, this all changed following the Māhele of 1848, when private land ownership was established to the islands. A total of 68 Land Commission Awards (LCA) were issued for Mānoa Valley. The Project Site is located within the northern portion of LCA No. 1748 that was originally described as a house lot containing three homes bounded by a fence.

After the Māhele, urbanization in the late 19th and early 20th Centuries drastically modified the land use in Mānoa Valley. The loʻi and inland fishponds were replaced with housing, and as early as 1889, areas encompassing and adjacent to the Project Site were transformed into the Moʻiliʻili Quarry. In ill-fated effort by Chinese immigrants to shift from taro cultivation to growing rice quickly failed, and there are records that the valley was used as pastureland for more than one dairy enterprise. Following World War II and the induction into Statehood, the agricultural to urban change accelerated even more rapidly to accommodate a growing population in Honolulu and its surrounding areas.

With the transition to urbanization, many of the loʻi existing in the valley were removed but remnants of their presence remained. One example is the Ka Papa Loʻi o Kānewai, also known as the Kānewai Cultural Garden. Located less than a quarter of a mile downstream from the Project Site, Ka Papa Loʻi o Kānewai was rediscovered and restored in the 1980's and is an actively cultivated loʻi. It receives water from Mānoa Stream and is used to educate students and visitors about the cultural significance and historic agricultural practices of kalo cultivation. For further information, see Appendix C.

3.2.1 Impacts and Mitigation

The Project Site was historically used for agriculture, mainly kalo cultivation in loʻi and inland fishponds and for scattered human habitation dating back into the pre-European Contact and Historic periods. The Proposed Action will not impact traditional and cultural practices as there are no known sacred sites or cultural resources known to occur on-site. The following BMPs will be used to avoid impacts on Mānoa Stream that would affect Ka Papa Loʻi O Kānewai located downstream:

- Participation of the Developer's Development team and General Contractor team in a Ka Papa Loʻi O Kānewai community work day;

- Conduct cultural resources training as a component of safety training for subcontractors prior to working onsite;
- Utilize BMPs to protect Mānoa Stream to avoid impacts to Ka Papa Loʻi O Kānewai; and,
- Developer will coordinate water quality monitoring of Mānoa Stream entering the loʻi with Ka Papa Loʻi O Kānewai during construction.

3.3 ARCHAEOLOGICAL RESOURCES

An Archaeological Literature Review and Field Inspection (ALRFI) report (attached as Appendix C) was prepared by Scientific Consultant Services, Inc. (SCS), pursuant to HAR §13-275 and the following is a summary of the findings. Previously conducted archaeological studies and historical research were used to assess prior land use and identify existing archaeological and cultural resources at the Project Site.

Because of the land uses in Mānoa Valley during the pre-European Contact, Historic and post-European Contact periods, multiple archaeological studies conducted on and near the UHM campus have documented the presence of archeological historic properties, including human skeletal remains as single and clustered burials (*see* Figure 3-1 and Figure 3-2). Table 3-1 provides a list of the previous archaeological studies conducted in the surrounding area and summary of findings. The proximity of these burials to the Project Site, as well as evidence of past agricultural and settlement uses indicates there is potential for subsurface archaeological deposits (including possible human burials) to be present on-site (*see* Table 3-1).

Table 3-1: Summary of Previous Archaeological Studies

Reference	Location	Description and Results (SIHP # 50-80-14-XXXX)
Ching 1968	Former Magoon property given to UH Mānoa	A possible unnamed heiau consisting of two rock structures were observed. One rock structure was a linear rock mound and the other rock structure was a platform. Site was designated as SIHP # -3874
Barrera 1985	Mānoa Hillside	Documented an old road, no SIHP number assigned
Bath et al. 1988	2030 Wilder Avenue	Partially disturbed burial removed, designated as SIHP # -4038
Smith & Kawachi 1989	UH Mānoa near Keller Hall	Identified human remains, designated as SIHP # -4191
Douglas 1990	UH Mānoa near Keller Hall	Identified human remains from previously identified SIHP # -4191, determined to represent a single adult male

Hammatt & Shideler 1991	Kānewai	18 human skeletal remains found offsite on Dole Street, designated as SIHP # -4266
Liston & Burtchard 1996	Hawaiian Studies Institute	Paleoenvironmental sampling and stratigraphic profiling at Mānoa Stream identified a prehistoric irrigation system carbon dated to AD 1443-1681 at Ka Papa loʻi o Kānewai, designated as SIHP # -4498
Wolforth & Haun 1996	Mānoa	Identified numerous historic buildings within the UH Mānoa campus, including the Kānewai Cultural Garden (SIHP # -1252) and agricultural terraces and walls along Waʻahila Ridge (SIHP # -5463)
Tomonari-Tuggle 1998	National Marine Fisheries Service Laboratory (current Project Site)	Archaeological Assessment, recommended subsurface testing or archaeological monitoring for future ground-disturbing activities within the Project Site
O'Hare et al. 2007	Kamehameha Schools University parcels and Varsity Theatre	A literature review and field inspection identified previous agricultural use of the area
Shideler & Hammatt 2008	UH Mānoa Campus	A literature review and field inspection identified previously recorded sites within the campus [SIHP #s -1252 (architectural sites), -4191 (burial), -4498 (agricultural features), the Koana Cave and the site of Hipawai Heiau]
Enanoria et al. 2016	Varsity Parcels	Identified wetland soil deposits (SIHP #s -7588 and -7667) and early to mid-twentieth century structural remnants (SIHP # -7670)

Figure 3-1: Previous Archaeological Studies Map

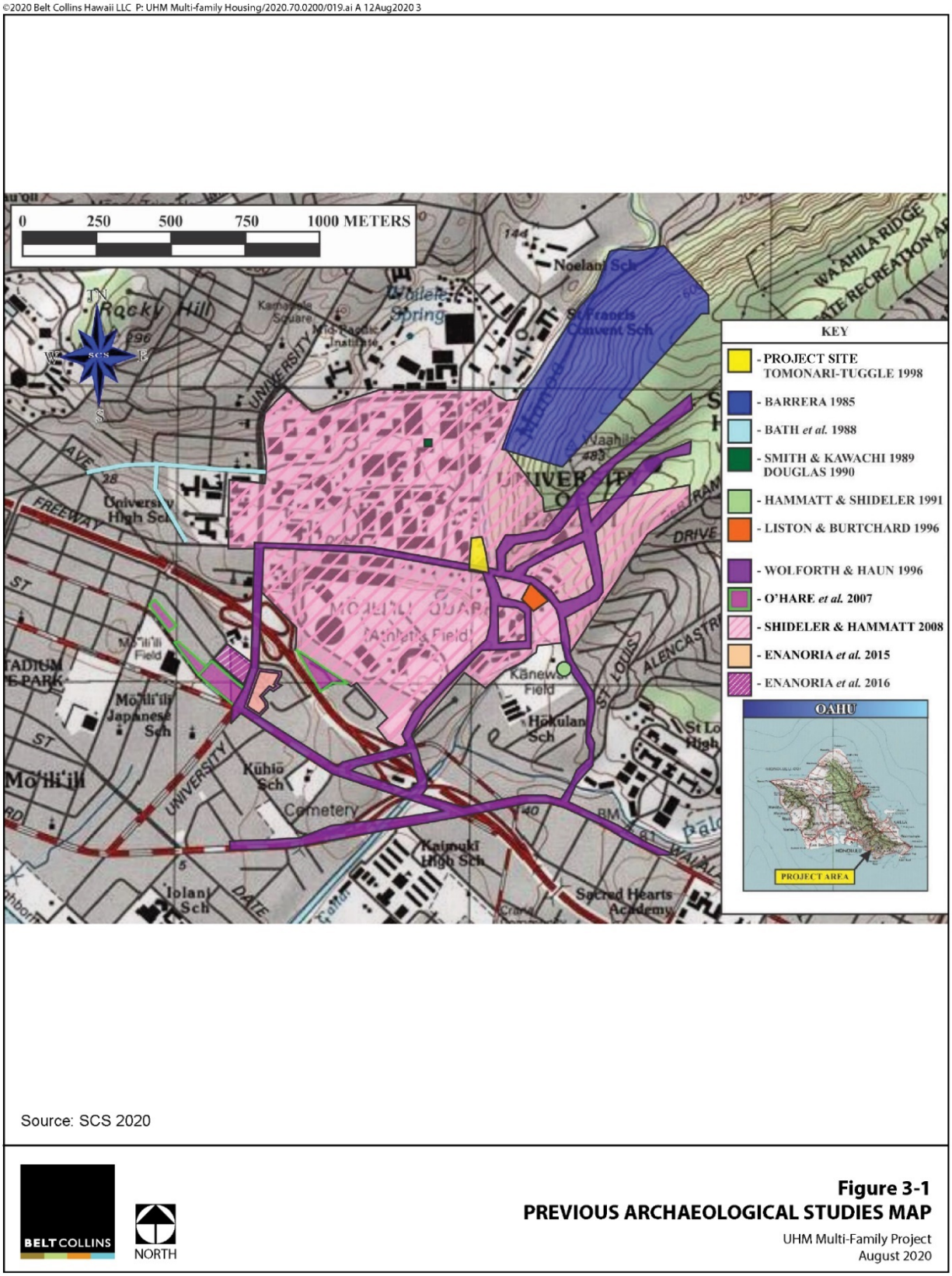

Figure 3-2: Historic Properties Map

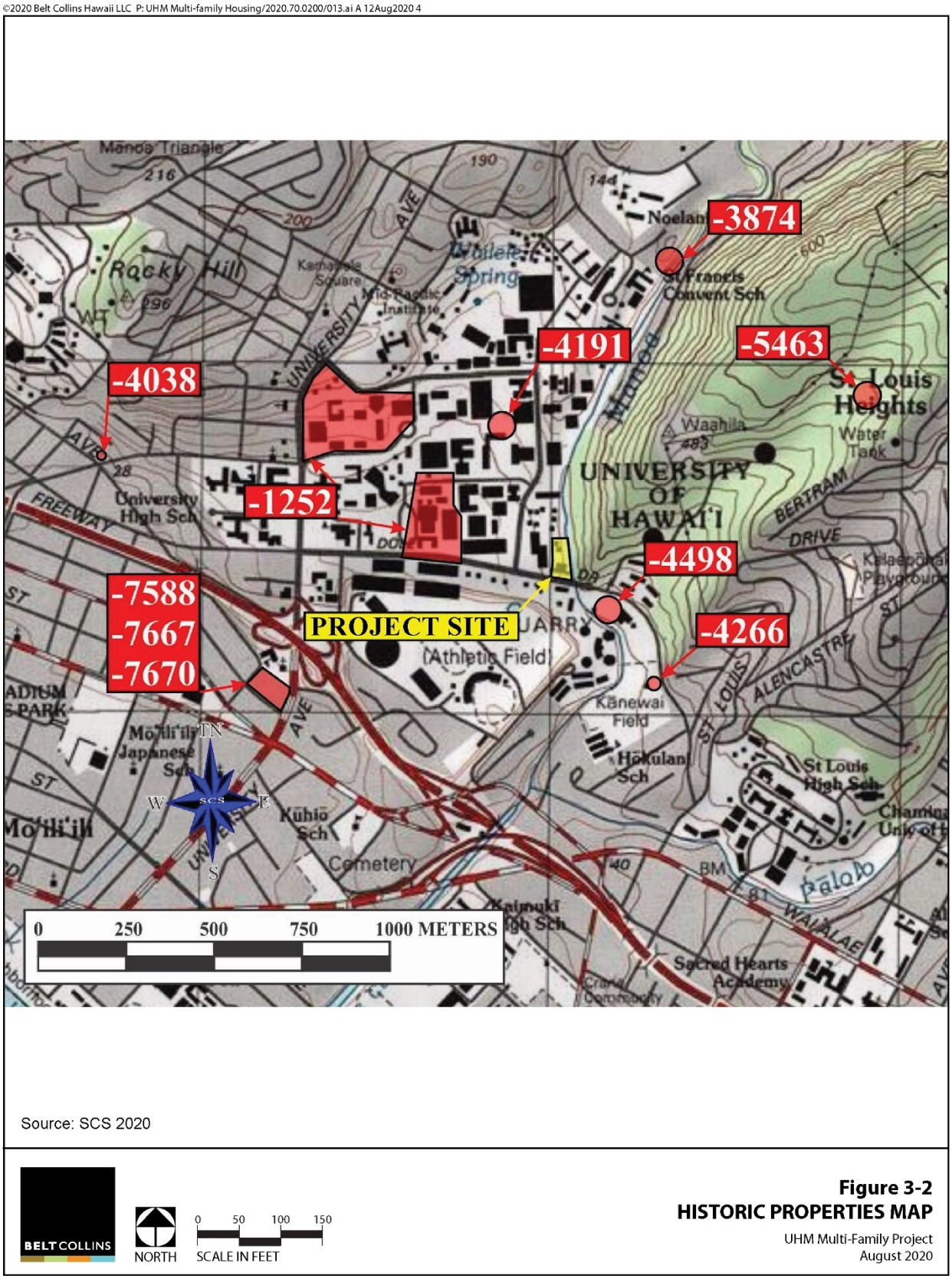

Figure 3-3: Field Inspection Photo Map

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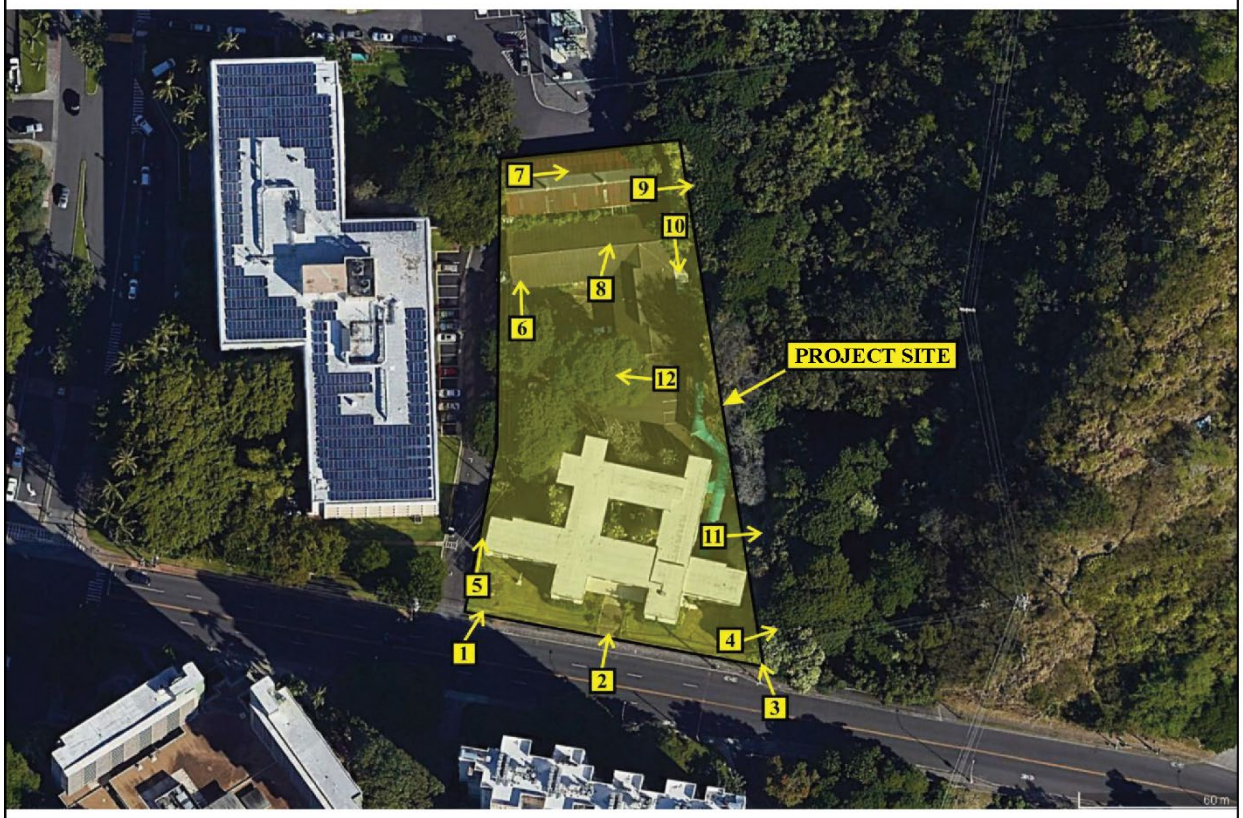

Source: SCS 2020

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NORTH

Figure 3-3
FIELD INSPECTION PHOTO MAP
UHM Multi-Family Project
August 2020

3.3.1 Impacts and Mitigation

Due to the presence of human burials near the Project Site, there is potential for subsurface archaeological deposits to be present. In order to minimize any potential impact on these resources, the following mitigation methods are recommended:

- Conduct an Archaeological Inventory Survey (AIS) with subsurface testing during the demolition phase of the existing buildings; and,
- Consult with SHPD concerning archaeological testing prior to initiating an AIS. If during the consultation SHPD determines that an AIS must be done prior to demolition the Developer will comply.

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4 PUBLIC RESOURCES

4.1 EMERGENCY SERVICES

4.1.1 Honolulu Fire Department

Fire services at the Project Site would be provided by the City and County of Honolulu Fire Department (HFD). Several fire stations are located in close proximity to the UHM campus, including the Mānoa Fire Station (1.4 miles), Makiki Fire Station (1.9 miles) and McCully Fire Station (1.4 miles). The Project Site is located between the Upper Campus and Lower Campus, and easily accessible by public roadways wide enough to permit access by fire trucks. Fire truck access is provided along Dole Street and at the entrance to the driveway. Fire hydrants are located within 400 ft of the nearest point on the building.

4.1.1.1 Impacts and Mitigation

The Proposed Action would be built in accordance with the Uniform Fire Code, as amended by the City. A fire protection system would be installed in the building, including an automatic fire sprinkler system, smoke detection system, heat detection system, carbon dioxide-based automatic fire suppression system, manual fire extinguishers, audio/visual signaling devices and fire alarm system. A dry standpipe system would be provided at the emergency exit stairwell and other areas as required by the Uniform Fire Code. No short- or long-term significant impacts to fire services are anticipated, and no additional mitigation is required.

4.1.2 Honolulu Police Department

Police services would be provided by the City and County of Honolulu Police Department (HPD). The UHM campus falls within District 7 – East Honolulu, Sector 1, which is served by the Alapaʻi Police Headquarters, located approximately three miles west of the Project Site. Other stations within close proximity to the UHM campus include the Waikīkī Substation (3 miles) and Downtown Substation (3.5 miles).

4.1.2.1 Impacts and Mitigation

The Proposed Action may require the use of flagmen or off-duty police officers to direct traffic and emergency vehicles to minimize the potential disturbance of construction activities to traffic flow. The Developer would be responsible for communicating and scheduling HPD support during the construction schedule as necessary. The Developer would also be responsible for using necessary safety devices (e.g. signs, lights, barricades, etc.) during construction to ensure public safety. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.1.3 University Department of Public Safety

Security services would be provided by the UHM Department of Public Safety (DPS). DPS is responsible for providing ground surveillance, safety escort and incident response services across the UHM campus 24 hours a day, 365 days a year. DPS also provides specialized services such as incident management, victim and survivor assistance, emergency preparedness plans, security assessments, specialized trainings, outreach programs and special event support.

4.1.3.1 Impacts and Mitigation

The Proposed Action would not create a significant increase in demand on DPS services on the UHM campus. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.1.4 University Health Services

Medical services are offered on-campus through the University Health Services Mānoa (UHSM) of the Office of Student Affairs. The UHSM is staffed by physicians, nurse practitioners, nurses, nutritionists, pharmacists, laboratory technicians and other support staff. Services and programs include: General Medicine; Specialized Clinics, such as women's health, sport's medicine, psychiatry, dermatology and nutrition; Pharmacy and Laboratory Services; Health Promotion Program; and student training, employment and volunteer opportunities.

The UHSM Health Promotion Program is located at the Queen Liliʻuokalani Center for Student Services. The Health Promotion Program provides services to assist students, faculty and staff in maintaining and improving their health and well-being and to contribute to a healthy campus community. Activities range from health fairs and classroom presentations by peer educators, to mass media educational campaigns, to providing resource materials and individual counseling on health-related topics, including alcohol and other drugs.

4.1.4.1 Impacts and Mitigation

The Proposed Action would not create a significant increase in demand on UHSM services. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.1.5 Honolulu Emergency Services Department

Emergency medical services would be provided by the Emergency Medical Services (EMS) Division of the City and County of Honolulu Emergency Services Department. The UHM Campus is served by District 2, which includes the southeast region of Oʻahu. The EMS, in

coordination with the HFD, would be responsible for responding to medical emergencies on- and off-campus.

After-hour care, private medical facilities and emergency response facilities are located within close proximity to the UHM Campus. The closest hospital is Kapiʻolani Medical Center for Women and Children, located approximately 1.5 miles west of the Project Site on Punahou Street. Other facilities within close vicinity include Kaiser Permanente, Kuakini Medical Center, Queen's Medical Center, Saint Francis Medical (Honolulu) and Straub Medical Center.

4.1.5.1 Impacts and Mitigation

The Proposed Action would not create a significant increase in demand in emergency services already responding to the UHM campus and surrounding neighborhoods. The Proposed Action is not expected to increase the student population, but instead provide a centralized "live-work-play" environment that would create more direct access to the existing students and faculty population using these services. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.2 PUBLIC FACILITIES

4.2.1 Education

The Project Site is located within the Hawaiʻi State Department of Education's (DOE) Kaimukī-McKinley-Roosevelt Complex Area, which currently includes nineteen elementary schools, five middle schools, three high schools, five charter schools, two special schools and two community schools. The nearest public-school facilities include Kaimukī High School, Voyager Public Charter School, Noelani Elementary School and Hōkūlani Elementary School all located within approximately two miles of the Project Site.

UHM is one of ten campuses, including three universities and seven community colleges or community-based learning centers, that offer learning, training and research opportunities within the State's public-school system for higher education. The University of Hawaiʻi System is considered to be one of the State's leading engine for economic growth and diversification, by stimulating the local economy with jobs, research and skilled workers.[2]

4.2.2 Recreation

A county park offering recreational facilities is in close proximity to the Project Site and operated and managed by the City and County of Honolulu Department of Parks and Recreation (DPR). Along with general park management and maintenance, the DPR offers

[2] https://www.hawaii.edu/about-uh/ (UH 2020)

various recreation and community programs to the community, including culture and arts, arts and crafts, sports, aquatics, therapeutic recreation, senior citizen and special event programs.[3] UHM falls within District 1: East Honolulu. The closest facility is Kānewai Community Park, a public recreation complex with softball fields, basketball and tennis courts and an outdoor lap pool, located approximately 0.3 miles southwest of the Project Site along Dole Street. Other facilities within close proximity include Kamānele Square, Kalo Place Mini Park and Kalaepōhaku Neighborhood Park (Manoa District Park) (*see* Figure 4-1).

Recreational programs offered at UHM are managed by Student Recreation Services (SRS), which provides a spectrum of experiences for students, faculty and UH workforce through innovative recreational activities and services. Specific programs available to the UHM community include informal recreation, intramural sports, group exercise training (G.E.T. Fit), special programs (S.P. Fit) and outdoor education programs. The UHM Warrior Recreation Center is located approximately 0.6 miles from the Project Site on Campus Road. Other facilities used for UHM sports and student recreation and fitness programs include the Stan Sheriff Center, UH Tennis Complex, Clarence T.C. Ching Complex, Duke Kahanamoku Aquatic Complex, Les Murakami Stadium, Rainbow Wahine Softball Stadium, Aloha Stadium and Waipiʻo Peninsula Soccer Stadium.[4]

4.2.2.1 Impacts and Mitigation

The Proposed Action would allow students and faculty to enjoy a "live-work-play" environment that offers easier access to the services and facilities available within the vicinity of the Project Site. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.3 INFRASTRUCTURE AND UTILITIES

4.3.1 Water

Potable water at the Project Site is supplied by the City and County of Honolulu Board of Water Supply (BWS). There is currently one twelve-inch and one twenty-inch cast iron main located along Dole Street with a point of connection at the southwest corner of the existing NOAA facility. The water lateral extends from the main building point of connection to the structure located on the north side of the parking lot. Both structures are served by a two-inch water meter #00700836 located within the property line on Dole Street and within an unidentified easement area. The BWS premise ID is 4679857322 (*see* Figure 4-2). There are three fire hydrants located within the vicinity of the Project Site. One is located across Dole Street in front of Gateway House. Another is located on the near side of Dole on the west side

[3] http://www.honolulu.gov/parks/default/about-us.html (CCH DPR, 2020)
[4] https://hawaiiathletics.com/sports/2015/6/9/GEN_0609152010.aspx (UHM, 2020)

of East-West Road intersection. A third is located on the near side of Dole on the east side of Mānoa Stream.

4.3.1.1 Impacts and Mitigation

The Proposed Action would incorporate improvements to the existing water infrastructure to accommodate the anticipated water demand on-site. The final project design would incorporate water system BMPs and mitigation measures that are consistent with LEED Silver certification status. Final design and siting of water lines and connections would be determined during the design phase and submitted to BWS for review and approval. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

Figure 4-1: Map of Nearby Facilities and Services

Figure 4-2: Civil Utilities Assessment Map

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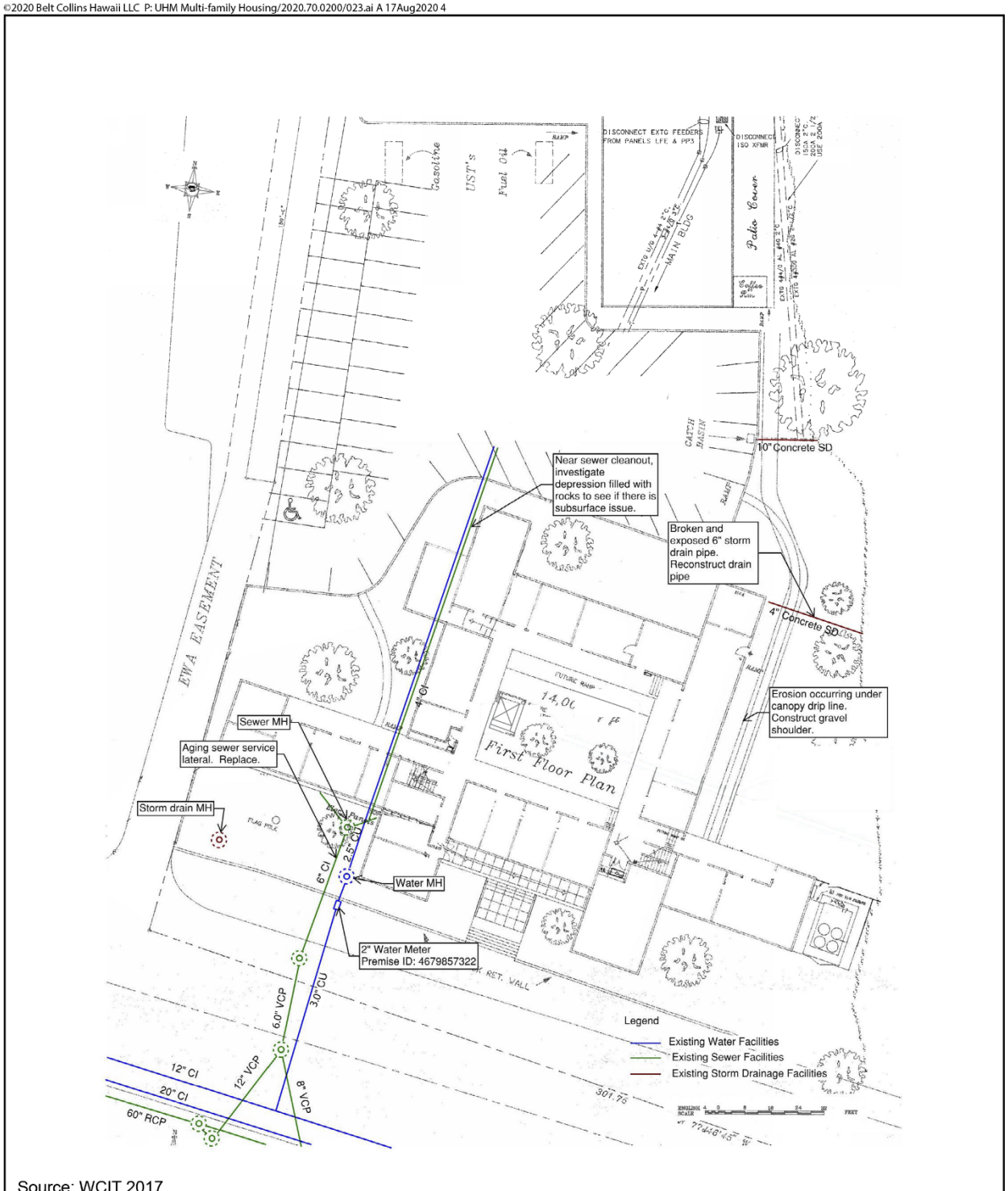

Source: WCIT 2017

BELT COLLINS NORTH

Figure 4-2
CIVIL UTILITIES ASSESSMENT MAP
UHM Multi-Family Project
August 2020

4.3.2 Wastewater

Wastewater services at the Project Site are provided by the City and County of Honolulu Department of Environmental Services (ENV). There is currently one six-inch cast iron gravity sewer lateral constructed in 1950 that connects at the southwest corner of the existing building. The lateral connects to a gravity main crossing Dole Street, then to a sixty-inch gravity sewer main running parallel along Dole Street. The same lateral provides service upstream to the structure located on the north side of the parking lot. Sewer cleanouts were observed on both sides of the northwest corner of the building during previous assessments of the Project Site (*see* Figure 4-3). A sewer manhole is located at the southwest corner of the building.

4.3.2.1 Impacts and Mitigation

The Proposed Action would incorporate improvements to the existing sewer lateral. Final improvements would be determined by the UHM Sewer Master Plan Update. The Project Site would remain within the total capacity allocated for wastewater infrastructure on the UHM campus. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.3.3 Drainage

The existing drainage system includes multiple downspouts located around the perimeter of the existing building and two corners within the interior courtyard (*see* Photo 3 of Figure 4-3). The roof currently drains on the east side of the building and is piped underground to an outlet near the top of the embankment at Mānoa Stream (*see* Photo 9 of Figure 4-3). Two roof drains located near the entrance of the south side building are piped underground.

A drainage inlet located within the landscaped courtyard includes a drain box substructure with internal dimensions of approximately twelve-by-twelve ft (*see* Photo 6 of Figure 4-3). Another inlet located in the floor of the east walkway includes a vertical pipe, approximately six-inches in diameter. A storm drain inlet located in the parking lot includes a shallow curb that opens into a six-inch concrete pipe and outlets near the top of the embankment at Mānoa Stream (*see* Photos 8 & 9 of Figure 4-3). A storm drain manhole is located at the southwest corner of the property, partially exposed at the embankment.

Figure 4-3: Civil Utilities Assessment Photos

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Photo 3
Downspout to underground

Photo 24
Sewer Cleanout at Northwest Bldg. Corner

Photo 6
Inlet in landscaped courtyard

Photo 7
Inlet in east walkway

Photo 8
Curb inlet in parking lot

Photo 9
Curb inlet outlet pipe at embankment

Source: WCIT 2017

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Figure 4-3
CIVIL UTILITIES ASSESSMENT PHOTOS
UHM Multi-Family Project
August 2020

4.3.3.1 Impacts and Mitigation

The Proposed Action would incorporate improvements to the drainage system, including BMPs and mitigation consistent with LEED Silver certification status, to accommodate the final project design. The Proposed Action would not alter the existing conditions of cross sections, slope or materials that would increase drainage to Mānoa Stream above current discharge levels. Water quality protection and pollution control would be implemented pursuant to HAR §11-54 and HAR §11-55. No short- or long-term significant impacts are anticipated and no additional mitigation is required.

4.3.4 Solid Waste

Solid waste collection and disposal service is provided by the ENV for incineration at the Campbell Industrial Park H-POWER Plant.

4.3.4.1 Impacts and Mitigation

The Proposed Action would dispose of construction and demolition material at the PVT landfill in Waiʻanae. Contractors would adhere to stringent BMPs to ensure no significant impact would occur to the surrounding area. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.3.5 Power and Communications

Electrical power on the island of Oʻahu is provided by HECO. Telephone service is provided in the area by Hawaiian Telcom. The local Community Access Television service is provided by Spectrum Enterprise.

4.3.5.1 Impacts and Mitigation

The Proposed Action would have access to existing power and communication services in the area. The final project design would seek to implement new technologies and innovations in grid management that support UHM's commitment to reaching net-zero energy by 2035 and carbon neutrality by 2050. Increased storage opportunities and energy generation strategies would be incorporated into the building design to promote long-term energy efficiency on-site. Energy demand and usage would be comparable to existing housing facilities on the UHM campus. Residential and non-residential spaces at the Project Site would be metered separately. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.4 TRANSPORTATION AND CIRCULATION

4.4.1 Traffic

A Traffic Impact Report (TIR) was prepared by Wilson Okamoto to assess existing and anticipated traffic impacts from the Proposed Action (attached as Appendix E) and the following is a summary of the findings. The Project Site lies mauka (north) of Dole Street and is approximately 200 ft east of the Dole Street and East-West Road Intersection. The main roadway system surrounding the Project Site includes the following corridors (*see* Figure 4-4).

- Dole Street is a four-lane, two-way roadway oriented in the east-west direction at the makai (south) boundary of the Project Site;
- East-West Road is a two-lane roadway oriented in the north-south direction. The roadway is located west of the Project Site and provides access to UHM's Upper Campus at the intersection with Dole Street;
- Lower Campus Road is a three-lane, north-south oriented roadway. The roadway is located west of the Project Site and provides access to UHM's Lower Campus at the intersection with Dole Street. The eastbound approach of Dole Street has two through-lanes and an exclusive right-turn lane while the westbound approach has two lanes that serve left-turn and through traffic movements;
- St. Louis Drive is a two-lane, two-way north-south oriented roadway. The intersection between St. Louis Drive is located east of the property. The eastbound approach of Dole Street has an exclusive left-turn lane and an exclusive right-turn lane. At the intersection with Dole Street, the northbound approach of St. Louis Drive has an exclusive left-turn lane and one through lane, while the southbound approach has one through lane and an exclusive right-turn lane.

Traffic counts were conducted from April 18-23, 2019, during the morning peak hours, between 6:00 AM and 9:00 AM, and afternoon peak hours, between 3:00 PM and 6:00 PM. The analysis performed in this study was based upon the Highway Capacity Manual (HCM), Transportation Research Board (2000) and the "Synchro" software, developed by Trafficware. The Level of Service (LOS) was identified for each intersection ranging from LOS "A," meaning ideal or free-flow traffic operating conditions, to LOS "F," meaning unacceptable or potentially congested traffic operating conditions. Table 4-1 shows the existing operating conditions and projected operating conditions in 2025 with and without the Proposed Action. The analysis in this EA follows guidance from the State of Hawaiʻi Department of Transportation (DOT), which considers LOS "E" and "F" as unacceptable.

Figure 4-4: Existing Roadway System

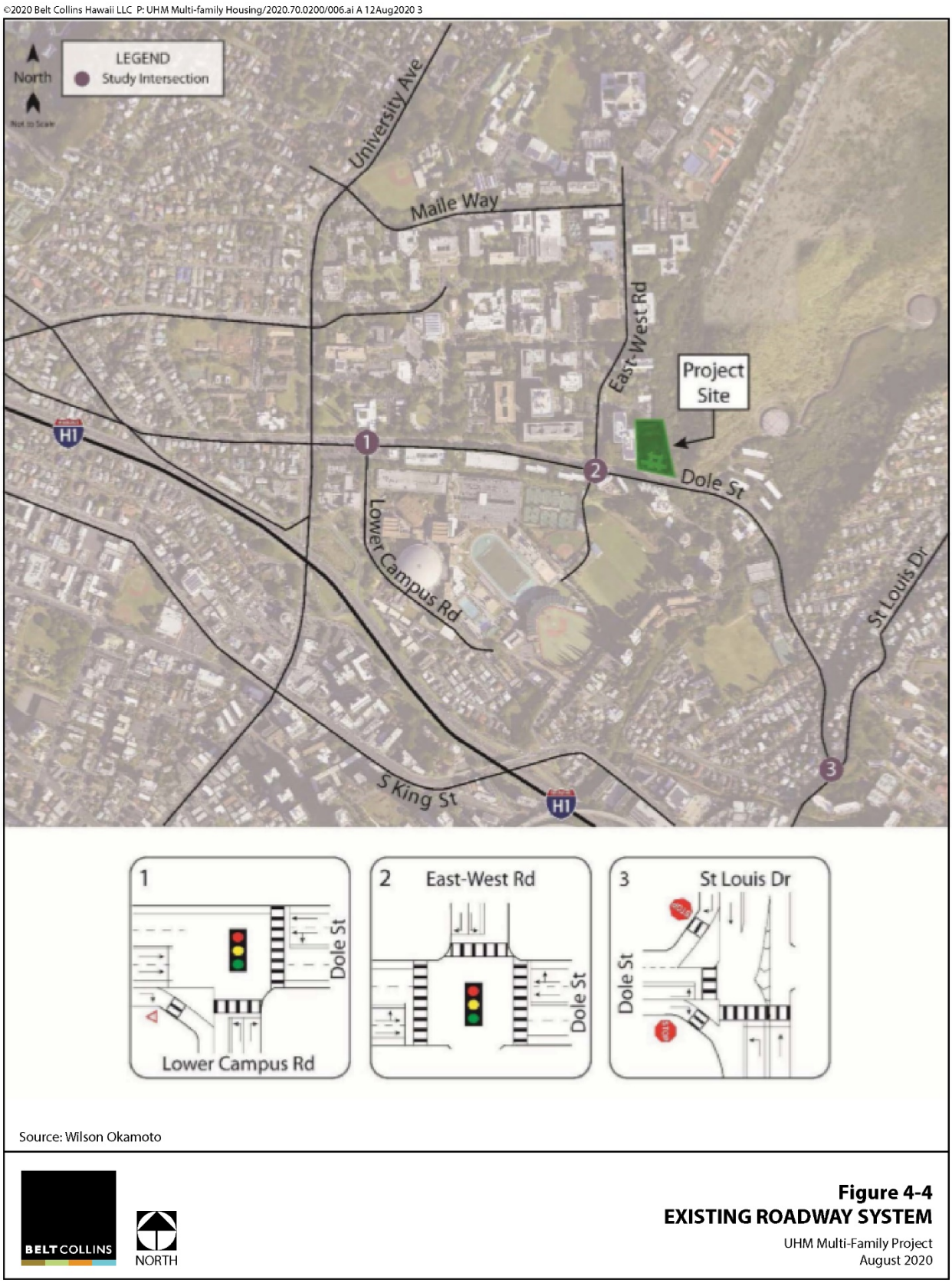

Table 4-1: Summary of Traffic Impact Analysis

Intersection	Critical Movement	AM			PM		
		Exist Cond.	2025 w/out Project	2025 w/ Project	Exist Cond.	2025 w/out Project	2025 w/ Project
Lower-Campus Rd/ Dole St	Eastbound	A	A	A	A	A	A
	Westbound	A	A	A	A	A	A
	Northbound	B	B	B	B	B	B
East-West Rd/ Dole St	Eastbound	A	A	A	B	B	B
	Westbound	B	B	B	C	C	C
	Southbound	B	C	C	B	B	B
St. Louis Dr/ Dole St	Eastbound	D	D	D	E	E	E
	Northbound (*LT)	B	B	B	A	A	A

*LT = Left Turn

The LOS analysis for each intersection is summarized as follow:

- Lower-Campus Road/Dole Street: Existing AM and PM conditions are considered acceptable for eastbound and westbound traffic (LOS A), and northbound traffic (LOS B).
- East-West Road/Dole Street: Existing AM and PM conditions are considered acceptable from all traffic directions, ranging from LOS A, B and C.
- St. Louis Drive/Dole Street: Existing conditions for eastbound traffic are considered acceptable at LOS D during the AM peak period, but unacceptable at LOS E during the PM peak period due to a high volume of right-turning vehicles from the stop-controlled approach. Existing AM and PM conditions are considered acceptable for northbound traffic (LOS A and B).

4.4.1.1 Impacts and Mitigation

Projected traffic operating conditions under the Traffic Study's No Action scenario (2025 w/o Project) were anticipated to remain generally consistent with the conditions under the Proposed Action (2025 with Project) and are summarized in the following:

- Lower-Campus Road/Dole Street:
  - Under the No Action scenario, traffic conditions are expected to continue operating at LOS A in both eastbound and westbound directions for AM and PM conditions and LOS B in the northbound direction for both peak periods.
  - The traffic conditions under the Proposed Action will remain the same as under the No Action scenario. No significant impacts are anticipated, and no mitigation measures are required.

- East-West Road/Dole Street:
  - Traffic operating conditions under the No Action scenario are expected to continue operating at LOS A in the eastbound direction during the AM period and at LOS B for the PM period. Westbound traffic conditions remain the same at LOS B for the AM period and LOS C for the PM period. The traffic conditions decrease from a LOS B to LOS C for the southbound direction in the AM period and remains at LOS B for the PM period.
  - Likewise, traffic conditions under the Proposed Action will operate similarly under the No Action Scenario. Southbound traffic conditions are also expected to lower from a LOS B to LOS C during the AM period, however it is anticipated that there will be no significant impact as conditions will operate similarly without the project. No additional mitigation is required.
- St. Louis Drive/Dole Street:
  - The traffic conditions are expected to remain at LOS D for the eastbound direction during the AM period and LOS E for the PM period, and a LOS B in the AM period and LOS A in the PM period in the northbound direction under the No Action Scenario.
  - Traffic conditions under the Proposed Action will remain the same with existing conditions as under the No Action scenario. The St. Louis and Dole Street intersection is expected to operate at LOS D and LOS E during AM and PM periods in the eastbound direction with the Proposed Action; however, it is anticipated that there will be no significant impacts as the current conditions as well as projected conditions in the No Action scenario operate on these LOS ratings. No mitigation measures are anticipated.

The Proposed Action would not contribute significant traffic demand to the surrounding intersections. According to the 2007 LRDP and 2012 Transportation Demand Management Plan (TMDP), it is expected that the volume of vehicles within the vicinity of the Project Site is expected to decrease as future improvements are made to multi-modal transportation systems and facilities across the UHM campus (UHM 2007 and UHM 2009). The project location and design would contribute long-term positive impacts to traffic demand by providing a "live-work-play" environment for students and faculty.

4.4.2 Access and Circulation

The sole accessway onto the Project Site is through an existing driveway off Dole Street which serves as both site access and egress. The driveway provides access to a parking lot that is currently utilized for visitors or permitted parking by UHM.

4.4.2.1 Impacts and Mitigation

The Proposed Action will incorporate new access points for pedestrian and bicycle access on-site. No changes are anticipated for the existing driveway. The proposed housing facility is designed to promote multi-modal transportation and decrease commuting and parking demand on the UHM campus. The Proposed Action will incorporate the following recommendations to mitigate potential concerns related to multi-modal transportation access and circulation on-site:

- Maintain sufficient sight distance for motorists to safely enter and exit the project driveways to enhance pedestrian, bicyclist and motorist awareness at potential conflict points.
- Provide adequate on-site loading and off-loading service areas and prohibit off-site loading operations.
- Provide adequate turn-around area for service, delivery and refuse collection vehicles to maneuver on the project site to avoid vehicle-reversing maneuvers onto public roadways.
- Provide sufficient turning radii within all driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.
- Provide adequate signage to indicate the designated uses of on-site parking stalls and monitor stall usage to minimize potential conflicts.
- Provide convenient access to bicycle parking facilities located within the housing facility.
- Coordinate with the City and County of Honolulu's Department of Transportation Services regarding their plans for additional bike facilities along Dole Street and East-West Road.
- Prepare a Transportation Management Plan for the Project Site to determine specific traffic and circulation mitigation measures implemented on-site.
- Prepare a Construction Management Plan for the Project Site to determine operational conditions associated with traffic circulation, traffic control and parking usage during the construction period.

No short- or long-term significant impact is anticipated, and no additional mitigation is required.

4.4.3 Parking Facilities

Parking requirements for the UHM campus are established by the existing PRU, LRDP, and TMDP plans and policies, which aim to increase multi-modal transportation on campus by decreasing future supply and demand of UHM parking facilities (UHM 2009 and UHM 2012). According to the *Parking Supply/Demand Study & Site Alternatives Evaluation* (UHM 2007), the existing parking infrastructure would not be sufficient to support peak hour activities at

the Project Site (typically from 7:30 AM to 3:30 PM Mondays through Fridays). However, this is consistent with the objectives set forth in the LRDP.

4.4.3.1 Impacts and Mitigation

The Proposed Action would prioritize on-site parking for short-term rideshare, carshare and childcare loading zones to promote multi-modal transportation objectives of the LRDP. No long-term parking will be provided for residents on-site as well as staff members, however alternative permit and visitor parking facilities are available on campus as needed (*see* Figure 4-5). UHM is currently in the process of planning and securing funds for a multi-level parking facility mauka of the Project Site. Current parking structures on campus and the addition of the future multi-level parking facility would mitigate any potential impacts of additional parking demands created by residents of the Proposed Action.

The Proposed Action is consistent with the objectives set forth in the LRDP to decrease parking demand and increase multi-modal transportation across the UHM campus. No short- or long-term significant impacts are anticipated, and no additional mitigation is required.

4.4.4 Transit Facilities

Several transit services and facilities are located within the vicinity of the Project Site. The City and County of Honolulu's public bus system, called "TheBus", currently offers a total of four stops with eleven unique routes within a quarter mile radius of the Project Site (*see* Figure 4-6: Transit Facilities). The UHM "Rainbow Shuttle" offers additional transit services for students and faculty through the campus and surrounding neighborhoods, such as Mōʻiliʻili and Koko Head Avenue. There are five Rainbow Shuttle stops within a quarter mile radius of the Project Site.

4.4.4.1 Impacts and Mitigation

The Proposed Action would be one of several projects implemented to support UHM's transportation and connectivity goals by creating a "live-work-play" environment for students and faculty on campus. The Project Site is located close to the new Transportation Management Center, which will serve as a transit hub with shuttle and bus accommodations, rideshare, carshare, bikeshare programs and more. The new housing facility will have a long-term positive impact on the utilization of on-campus transit facilities and infrastructure because it will reduce vehicular traffic in the area.

Figure 4-5: Parking Facilities

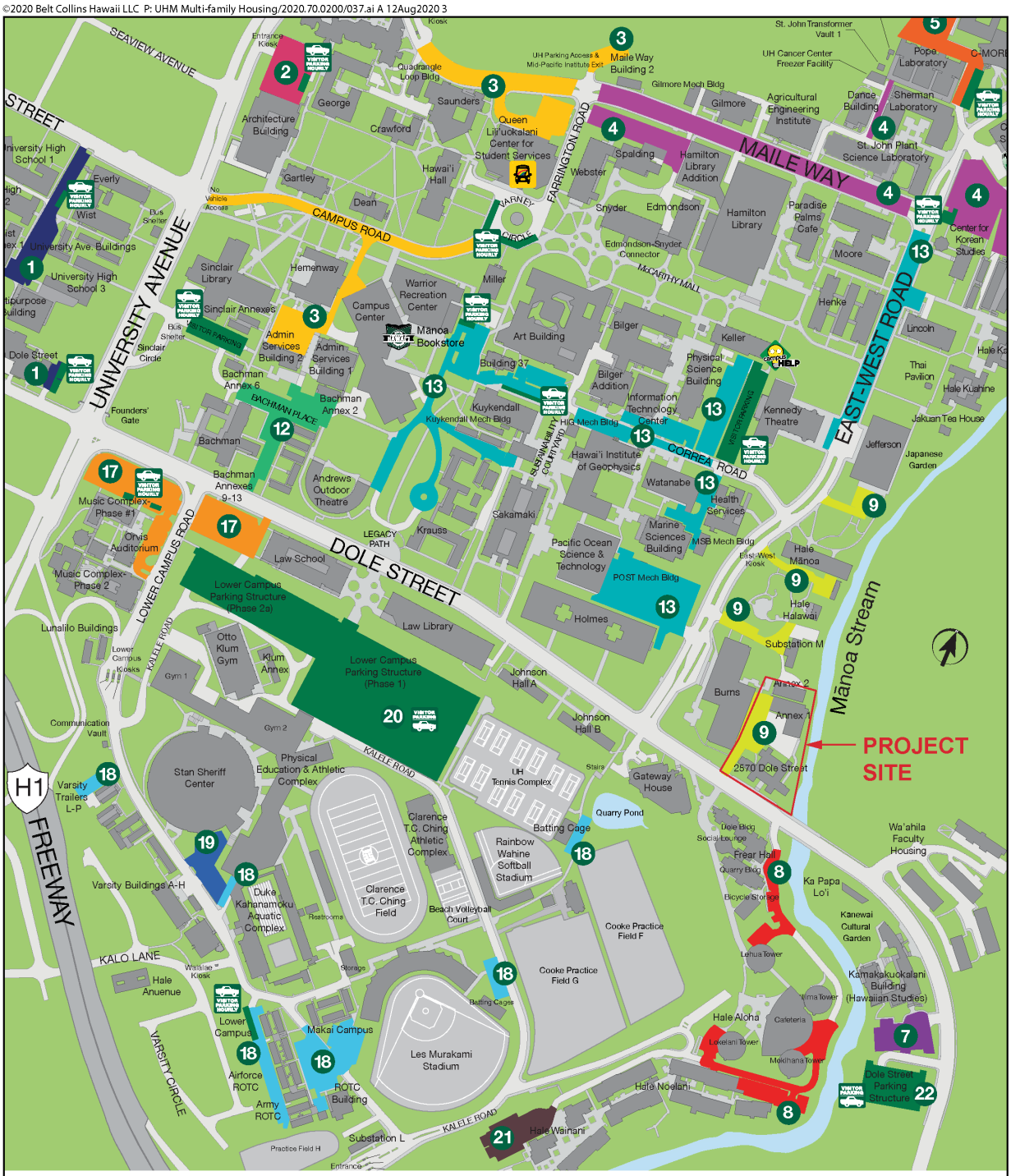

Figure 4-6: Transit Facilities

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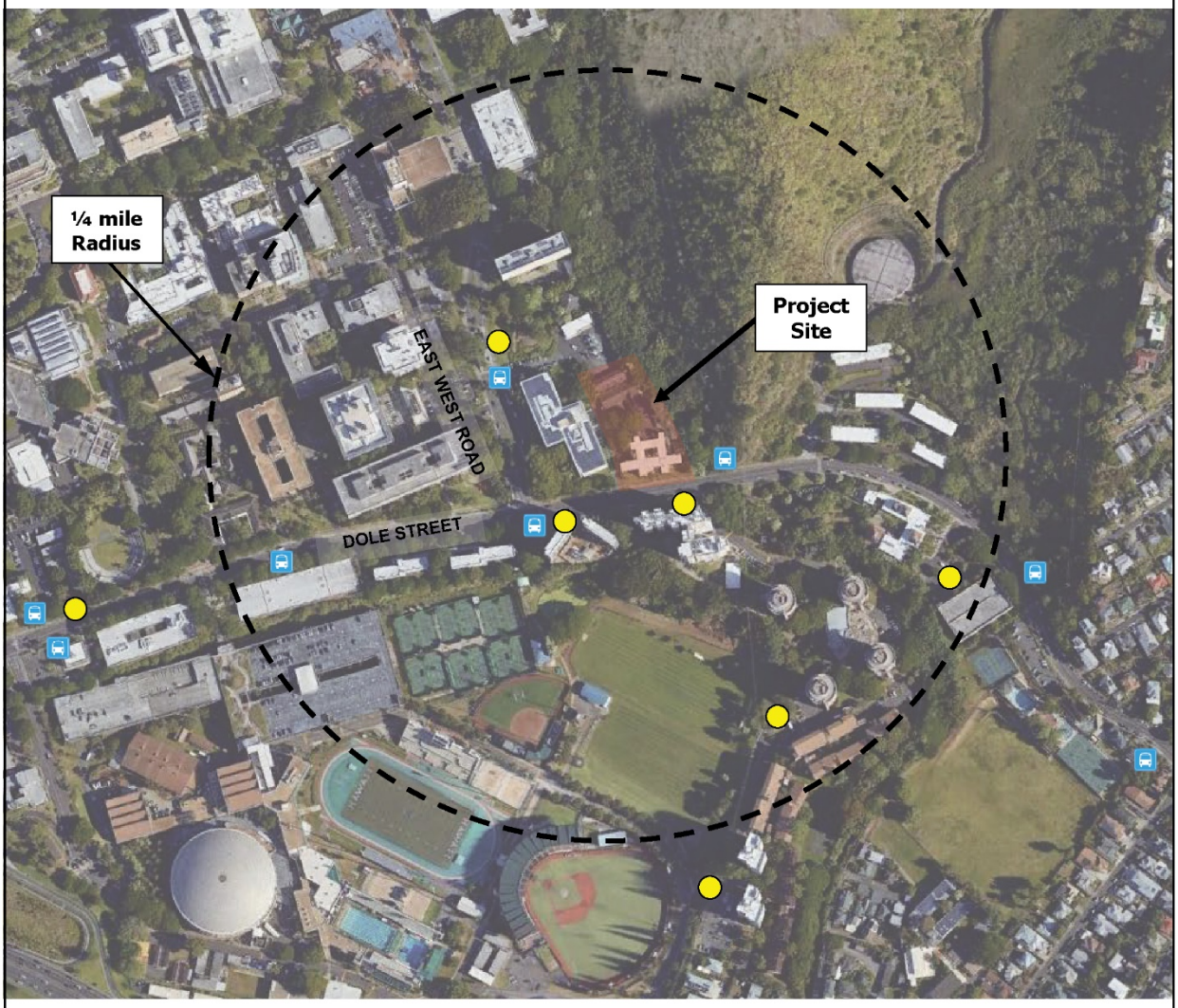

Adjacent Bus Facilities

Bus Stop(s)	Bus Routes
University Ave & Dole St	4, 6, 13, 18
Dole St & Lower Campus Rd	6, 18, 85, 80A, 85
East-West Rd & Dole St	6, 80

LEGEND

- Bus Stop
- Rainbow Shuttle Stop

Source: Wilson Okamoto Corporation

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Figure 4-6
TRANSIT FACILITIES
UHM Multi-Family Project
August 2020

4.4.5 Bicycle Facilities

Bicycle facilities located within the vicinity of the Project Site include bikeshare stations, short-term bike racks and long-term bike storage locations. The "Biki" bikeshare system, owned and operated by a nonprofit called Bikeshare Hawaiʻi, offers several stations within a quarter mile of the Project Site. The nearest stations are located south of the Project Site along Dole Street, west of the Project Site along Dole Street, southwest of the Project Site at the Lower Campus parking structure, and north of the Project Site towards the center of campus (*see* Figure 4-7: Bicycle Facilities). Bicycle lanes extend across campus, connecting the Lower Campus and Upper Campus along Dole Street, University Avenue and East-West Road.

4.4.5.1 Impacts and Mitigation

The Proposed Action will provide short- and long-term bicycle parking for residents and visitors on-site to promote multi-modal transportation objectives of UHM's LRDP. Bicycle racks will offer short-term parking options near the south end of the Project Site, closest to Dole Street. Long-term bicycle storage will be provided on the ground or second floor of the housing facility for residents. The new housing facility will have a long-term positive impact on the utilization of bicycle transportation and facilities on campus.

4.4.6 Pedestrian Connectivity

Pedestrian connectivity around the Project Site is achieved through a network of sidewalks, crosswalks, signal phases and curb ramps. A signalized mid-block crosswalk on Dole Street between Lower Campus Road and East-West Road connects the UHM parking garage and pedestrian pathway called the UHM "Legacy Path" (*see* Figure 4-8: Pedestrian Connectivity). Trees and streetlights positioned along these roadways provide elements of safety and comfort, which enhances the pedestrian environment.

4.4.6.1 Impacts and Mitigation

The Proposed Action will incorporate paving and landscaping that promotes pedestrian activity and connectivity on and around the Project Site. The "live-work-play" environment will support UHM's LRDP objective to establish pedestrian gateways across campus, specifically along University Avenue, Maile Way, Dole Street and East-West Road. The Project Site will incorporate elements of lighting, shading and seating to facilitate places of gathering that feel safe and comfortable for students, residents, faculty and visitors on campus. The new housing facility will have a long-term positive impact on pedestrian connectivity across the UHM campus.

Figure 4-7: Bicycle Facilities

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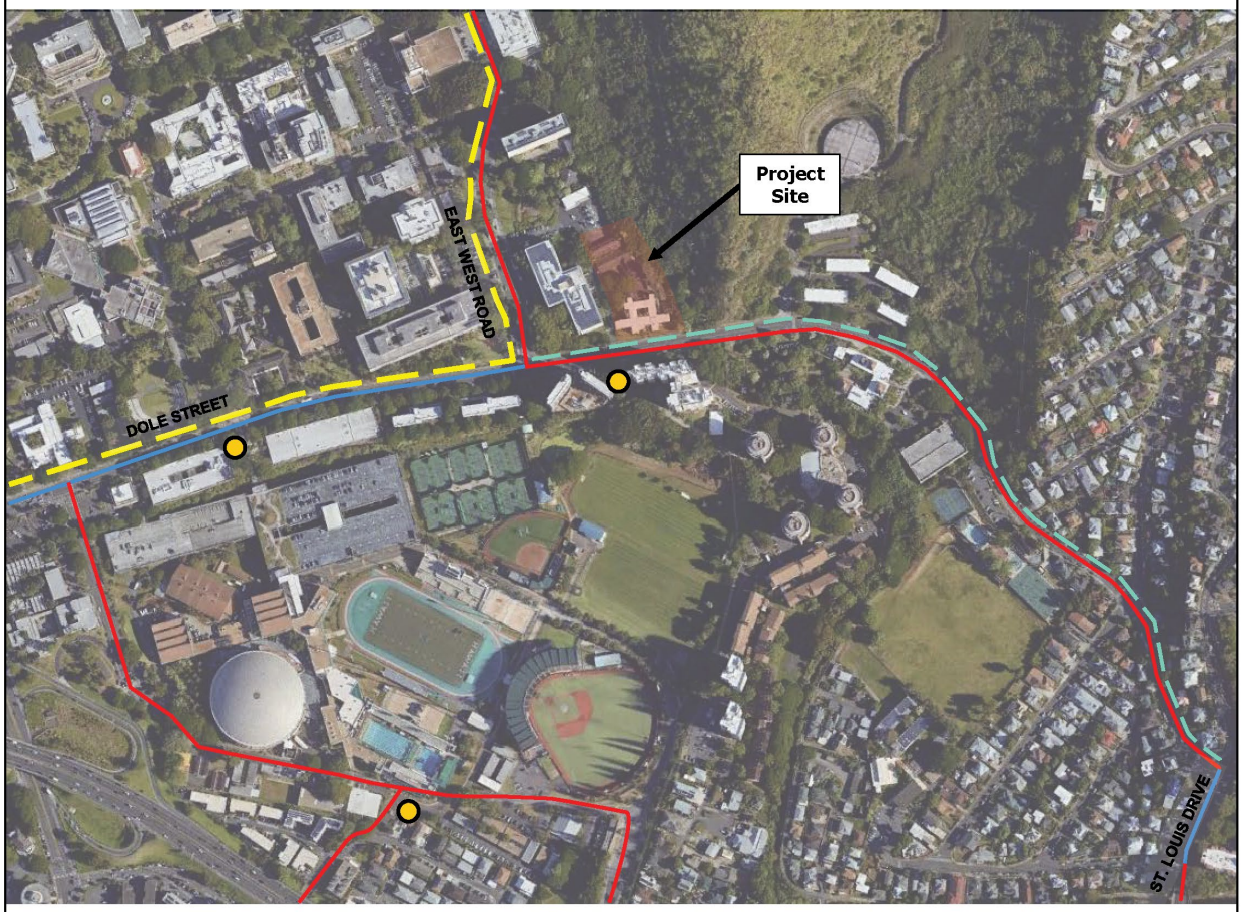

LEGEND

- Existing Bike Lane
- Existing Shared Roadway
- Proposed Protected Bike Lane
- Proposed Bike Lane
- Existing Bikeshare Station

Source: Wilson Okamoto Corporation

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Figure 4-7
BICYCLE FACILITIES
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August 2020

Figure 4-8: Pedestrian Connectivity

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Source: Wilson Okamoto Corporation

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Figure 4-8
PEDESTRIAN CONNECTIVITY
UHM Multi-Family Project
August 2020

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5 RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS

5.1 STATE OF HAWAIʻI

5.1.1 Hawaiʻi State Plan

The Hawaiʻi State Plan is a broad policy document that guides all activities, programs and decisions made by local and State agencies (DPED 1986). The purpose of the plan is to: (1) improve the planning process; (2) increase the effectiveness of government and private actions; (3) improve coordination among agencies and levels of government; (4) provide for the wise use of Hawaiʻi's resources; and (5) guide the future development of the state. Part I of the Plan references Overall Theme, Goals, Objectives and Policies while Part III references the Priority Guidelines. Because Part II pertains primarily to internal government affairs it is not applicable to the Proposed Action and was not addressed. Table 5-1 outlines the Proposed Action's consistency with Part I objectives. Table 5-2 outlines the consistency with Part III objectives.

Table 5-1: Consistency with Hawaiʻi State Plan

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
HRS § 226-4: State Goals			
(a) Objectives: In order to guarantee, for the present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:			
(1) A strong, viable economy characterized by stability, diversity and growth that enables fulfillment of the needs and expectations of Hawaiʻi's present and future generations.	X		
(2) 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.	X		
(3) Physical, social and economic well-being, for individuals and families in Hawaiʻi, that nourishes a sense of community responsibility, of caring and of participation in community life.	X		
Discussion: The Proposed Action would support State goals by fostering a unique and engaging "live-work-play" environment on the UHM campus that is affordable, and therefore accessible, for students and faculty. The physical environment would incorporate natural landscaping features and open gathering spaces to promote connectivity and participation in community life across campus. The Proposed Action would protect and preserve the integrity of Manoa Stream along the Project Site, while maintaining visual accessibility to the stream and surrounding scenic resources from key observation points in the surrounding area.			

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
HRS § 226-5: Objectives and Policies for Population			
Objective: It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic and social objectives contained in this chapter.			
(a) Policies:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaiʻi's people to pursue their physical, social and economic aspirations while recognizing the unique needs of each county.			X
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.			X
(3) Promote increased opportunities for Hawaiʻi's people to pursue their socio-economic aspirations throughout the islands.	X		
(4) Encourage research activities and public awareness programs to foster an understanding of Hawaiʻi's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaiʻi's population.			X
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			X
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			X
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.			X
Discussion: The Proposed Action would support population growth and mobility. Affordable housing developments increase opportunities for low-income residents to pursue higher education without the cost barriers associated with rent and transportation.			
HRS § 226-6: Objectives and Policies for the Economy in General			
Objectives: Planning for the State's economy in general shall be directed toward achievement of the following objectives:			
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice and improved living standards for Hawaiʻi's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries and includes the development and expansion of industries on the neighbor islands.			X
(a) Policies:			

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(1) Promote and encourage entrepreneurship within Hawaiʻi by residents and nonresidents of the State.			X
(2) Expand Hawaiʻi's national and international marketing, communication and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			X
(3) Promote Hawaiʻi as an attractive market for environmentally and socially sound investment activities that benefit Hawaiʻi's people.			X
(4) Transform and maintain Hawaiʻi as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.	X		
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaiʻi.	X		
(6) Seek broader outlets for new or expanded Hawaiʻi business investments.			X
(7) Expand existing markets and penetrate new markets for Hawaiʻi's products and services.			X
(8) Assure that the basic economic needs of Hawaiʻi's people are maintained in the event of disruptions in overseas transportation.			X
(9) Strive to achieve a level of construction activity responsive to and consistent with, state growth objectives.	X		
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawaiʻi's small-scale producers, manufacturers and distributors.	X		
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.	X		
(12) Encourage innovative activities that may not be labor-intensive but may otherwise contribute to the economy of Hawaiʻi.	X		
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawaiʻi's employment and economic growth opportunities.	X		
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.	X		
(15) Maintain acceptable working conditions and standards for Hawaiʻi's workers.	X		
(16) Provide equal employment opportunities for all segments of Hawaiʻi's population through affirmative action and nondiscrimination measures.			X
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
(18) Encourage businesses that have favorable financial multiplier effects within Hawaiʻi's economy, particularly with respect to emerging industries in science and technology.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(19) Promote and protect intangible resources in Hawaiʻi, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.	X		
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general and requirements of new, potential growth industries in particular.	X		
(21) Foster a business climate in Hawaiʻi - including attitudes, tax and regulatory policies and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			X
Discussion: The Proposed Action would support the economy by leveraging private and public expertise and capital through a P3 partnership that would not otherwise be available. Construction of the proposed facility will provide and promote job opportunities and contribute to the economic growth and vitality of Hawaiʻi. Operation of the proposed facility will provide long-term job opportunities and incorporate space for community engagement and collaboration that promotes innovation and future growth. The Project Site will preserve and enhance scenic beauty and healthy living by promoting pedestrian and bicycle connectivity across the UHM campus.			
HRS § 226-7: Objectives and Policies for the Economy–Agriculture			
Objectives: Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:			
(1) Viability of Hawaiʻi's sugar and pineapple industries.			X
(2) Growth and development of diversified agriculture throughout the State.			X
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaiʻi's strategic, economic and social well-being.			X
(a) Policies:			
(1) Establish a clear direction for Hawaiʻi's agriculture through stakeholder commitment and advocacy.			X
(2) Encourage agriculture by making best use of natural resources.			X
(3) Provide the governor and the legislature with information and options needed for prudent decision making for the development of agriculture.			X
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			X
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawaiʻi's economy.			X
(6) Seek the enactment and retention of federal and state legislation that benefits Hawaiʻi's agricultural industries.			X
(7) Strengthen diversified agriculture by developing an effective promotion, marketing and distribution system between Hawaiʻi's food producers and consumers in the State, nation and world.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency and enhance the development of new products and agricultural by-products.			X
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			X
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			X
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			X
(12) In addition to the State's priority on food, expand Hawaiʻi's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture and other potential enterprises.			X
(13) Promote economically competitive activities that increase Hawaiʻi's agricultural self- sufficiency, including the increased purchase and use of Hawaiʻi-grown food and food products by residents, businesses and governmental bodies as defined under HRS §103D-104.			X
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			X
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			X
(16) Facilitate the transition of agricultural lands in economically non-feasible agricultural production to economically viable agricultural uses.			X
Discussion: The Proposed Action does not affect the objectives and policies of for the economy-agriculture.			
HRS § 226-8: Objectives and Policies for the Economy–Visitor Industry			
Objective: Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaiʻi's economy.			
(a) Policies:			
(1) Support and assist in the promotion of Hawaiʻi's visitor attractions and facilities.			X
(2) Ensure that visitor industry activities are in keeping with the social, economic and physical needs and aspirations of Hawaiʻi's people.			X
(3) Improve the quality of existing visitor destination areas by utilizing Hawaiʻi's strengths in science and technology.			X
(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaiʻi's people.			X
(6) Provide opportunities for Hawaiʻi's people to obtain job training and education that will allow for upward mobility within the visitor industry.			X
(7) Foster a recognition of the contribution of the visitor industry to Hawaiʻi's economy and the need to perpetuate the aloha spirit.			X
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaiʻi's cultures and values.			X
Discussion: The Proposed Action does not affect the objectives and policies of the Economy-Visitor Industry.			
HRS § 226-9: Objective and Policies for the Economy–Federal Expenditures			
Objective: Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawaiʻi's economy.			
(a) Policies:			
(1) Encourage the sustained flow of federal expenditures in Hawaiʻi that generates long- term government civilian employment.			X
(2) Promote Hawaiʻi's supportive role in national defense, in a manner consistent with Hawaiʻi's social, environmental and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development and related dual-use technology sectors in Hawaiʻi's economy.			X
(3) Promote the development of federally supported activities in Hawaiʻi that respect state-wide economic concerns, are sensitive to community needs and minimize adverse impacts on Hawaiʻi's environment.			X
(4) Increase opportunities for entry and advancement of Hawaiʻi's people into federal government service.			X
(5) Promote federal use of local commodities, services and facilities available in Hawaiʻi.			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaiʻi.			X
(7) Pursue the return of federally controlled lands in Hawaiʻi that are not required for either the defense of the nation or for other purposes of national importance and promote the mutually beneficial exchanges of land between federal agencies, the State and the counties.			X
Discussion: The Proposed Action does not affect the objectives and policies of the Economy-Federal Expenditures.			
HRS § 226-10: Objectives and Policies for the Economy–Potential Growth and Innovative Activities			

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(a) **Objective:** Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawaiʻi's economic base.	X		
(b) **Policies:**			
(1) Facilitate investment and employment in economic activities that have the potential to expand and diversify Hawaiʻi's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care and science and technology-based sectors.			X
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawaiʻi through the export of services or products or substitution of imported services or products.			X
(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill or initial inclination to commercially exploit their discoveries or achievements.			X
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable and equipped with the attitude necessary to undertake innovative activity.			X
(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic or visitor-oriented events without a business focus.			X
(6) Expand Hawaiʻi's capacity to attract and service international programs and activities that generate employment for Hawaiʻi's people.	X		
(7) Enhance and promote Hawaiʻi's role as a center for international relations, trade, finance, services, technology, education, culture and the arts.	X		
(8) Accelerate research and development of new energy- related industries based on wind, solar, ocean and underground resources and solid waste.			X
(9) Promote Hawaiʻi's geographic, environmental, social and technological advantages to attract new economic activities into the State.	X		
(10) Provide public incentives and encourage private initiative to attract new industries that best support Hawaiʻi's social, economic, physical and environmental objectives.	X		
(11) Increase research and the development of ocean-related economic activities such as mining, food production and scientific research.			X
(12) Develop, promote and support research and educational and training programs that will enhance Hawaiʻi's ability to attract and develop economic activities of benefit to Hawaiʻi.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawaiʻi.			X
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaiʻi's social, economic, physical and environmental objectives.			X
(15) Increase research and development of businesses and services in the telecommunications and information industries.			X
(16) Foster the research and development of non-fossil fuel and energy efficient modes of transportation.			X
(17) Recognize and promote health care and health care information technology as growth industries.			X
Discussion: The Proposed Action would support opportunities for potential growth and innovation in the economy as a leading P3 partnership at UHM. The project design will promote and incorporate values of Hawaiʻi's unique social, economic, physical, and environmental setting and provide services that support economic growth through private investment.			
HRS § 226-10.5: Objectives and Policies for the Economy–Information Industry			
(a) Objective: Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawaiʻi as a leader in broadband and wireless communications and applications in the Pacific Region.			X
(b) Policies:			
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawaiʻi and between Hawaiʻi and the world, and make high speed communication available to all residents and businesses in Hawaiʻi.	X		
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaiʻi to accommodate future growth and innovation in Hawaiʻi's economy.	X		
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawaiʻi.			X
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees or contractors to live in and work from Hawaiʻi, using technology to communicate with their headquarters, offices or customers located out-of-state.			X
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry.	X		
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic and physical needs and aspirations of Hawaiʻi's people.	X		

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(7) Provide opportunities for Hawaiʻi's people to obtain job training and education that will allow for upward mobility within the information industry.	X		
(8) Foster a recognition of the contribution of the information industry to Hawaiʻi's economy.	X		
(9) Assist in the promotion of Hawaiʻi as a broker, creator and processor of information in the Pacific.	X		
Discussion: The Proposed Action would support the economy-information industry by making high speed communication available to residents of the new housing facility. As a P3 partnership, this project will serve as a model for cooperation between public and private sectors and encourage other mainland or foreign companies to pursue future business opportunities in Hawaiʻi.			
HRS § 226-11: Objectives and Policies for the Physical Environment–Land-Based, Shoreline and Marine Resources			
(a) Objectives: Planning for the State's physical environment with regard to land-based, shoreline and marine resources shall be directed towards achievement of the following objectives:	X		
(1) Prudent use of Hawaiʻi's land-based, shoreline and marine resources.			X
(2) Effective protection of Hawaiʻi's unique and fragile environmental resources.	X		
(b) Policies:			
(1) Exercise an overall conservation ethic in the use of Hawaiʻi's natural resources.	X		
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	X		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	X		
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.	X		
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			X
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaiʻi.	X		
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			X
(8) Pursue compatible relationships among activities, facilities and natural resources.	X		
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational and scientific purposes.			X
Discussion: The Project Site is located within Urban Land Use District on the UHM campus and the design is consistent with these standards. As part of the EA process, a flora and fauna survey was conducted. It determined that the Proposed Action may create minor short-term impacts to avian fauna found on-site during construction, however, these will only be temporary and have no long-			

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
term effects. Mitigation measures recommended in the report were included in the EA to prevent any significant or long-term impacts on the Project Site's natural environment or resources.			
HRS § 226-12: Objective and Policies for the Physical Environment–Scenic, Natural Beauty and Historic Resources			
(a) Objective: Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaiʻi's scenic assets, natural beauty and multi-cultural/historical resources.	X		
(b) Policies:			
(1) Promote the preservation and restoration of significant natural and historic resources.			X
(2) Provide incentives to maintain and enhance historic, cultural and scenic amenities.	X		
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes and other natural features.	X		
(4) Protect those special areas, structures and elements that are an integral and functional part of Hawaiʻi's ethnic and cultural heritage.	X		
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	X		
Discussion: The Proposed Action would support the objectives and policies for protecting scenic, natural, and historic beauty of the Project Site and surrounding area. The proposed design was selected to maximize the preservation of scenic resources and natural features. No historic properties or archaeological resources have been identified on-site, however an AIS will be implemented for all ground disturbing activities. The timing of the AIS will be based on 6-E consultation with SHPD.			
HRS § 226-13: Objectives and Policies for the Physical Environment–Land, Air and Water Quality			
(a) Objectives: Planning for the State's physical environment with regard to land, air and water quality shall be directed towards achievement of the following objectives:	X		
(1) Maintenance and pursuit of improved quality in Hawaiʻi's land, air and water resources.	X		
(2) Greater public awareness and appreciation of Hawaiʻi's environmental resources.			X
(b) Policies:			
(1) Foster educational activities that promote a better understanding of Hawaiʻi's limited environmental resources.	X		
(2) Promote the proper management of Hawaiʻi's land and water resources.	X		
(3) Promote effective measures to achieve desired quality in Hawaiʻi's surface, ground and coastal waters.	X		
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaiʻi's people.	X		

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions and other natural or man-induced hazards and disasters.	X		
(6) Encourage design and construction practices that enhance the physical qualities of Hawaiʻi's communities.	X		
(7) Encourage urban developments in close proximity to existing services and facilities.	X		
(8) Foster recognition of the importance and value of the land, air and water resources to Hawaiʻi's people, their cultures and visitors.	X		
Discussion: During construction, any potential impacts to air quality will be minimized by using industry BMPs and project phasing. The design elements of the space will reflect the traditions, history and spiritual significance of Mānoa Valley and Hawaiian culture. It incorporates shaded common areas that visually connect pedestrians and residents to the Mānoa Stream and green corridors between the Upper Campus and Lower Campus.			
HRS § 226-14: Objective and Policies for Facility Systems–In General			
(a) Objective: Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal and energy and telecommunication systems that support statewide social, economic and physical objectives.	X		
(b) Policies:			
(1) Accommodate the needs of Hawaiʻi's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.	X		
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.			X
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.	X		
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction and maintenance of facility systems.			X
Discussion: The location and timing of the Proposed Action align with the availability of adequate water supply, sewage treatment, drainage, transportation and public safety facilities. The Project Site is adjacent to other on-campus housing, and its placement encourages clustering of development as a cost reduction for providing utilities and other public facilities.			
HRS § 226-15: Objectives and Policies for Facility Systems–Solid and Liquid Wastes			
(a) Objectives: Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives: **(1)** Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes. **(2)** Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility and other areas.	X		

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(b) Policies:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.	X		
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.			X
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			X
Discussion: The Proposed Action will be included in the UHM Updated Master Sewage Plan that will complement planned growth.			
HRS § 226-16: Objective and Policies for Facility Systems–Water			
(a) Objective: Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational and other needs within resource capacities.	X		
(b) Policies:			
(1) Coordinate development of land use activities with existing and potential water supply.	X		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			X
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.	X		
(4) Assist in improving the quality, efficiency, service and storage capabilities of water systems for domestic and agricultural use.			X
(5) Support water supply services to areas experiencing critical water problems.			X
(6) Promote water conservation programs and practices in government, private industry and the general public to help ensure adequate water to meet long-term needs.	X		
Discussion: The location and timing of the Proposed Action align with the availability of adequate water supply, sewage treatment, drainage, transportation and public safety facilities. It will incorporate water conservation methods into the design using LEED standards as guidelines and Low Impact Development (LID) practices will ensure that stormwater runoff will remain on-site.			
HRS § 226-17: Objectives and Policies for Facility Systems–Transportation			
(a) Objectives: Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives:	X		
(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe and convenient movement of people and goods.	X		
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			X
(c) Policies:			

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(1) Design, program and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;	X		
(2) Coordinate state, county, federal and private transportation activities and programs toward the achievement of statewide objectives;	X		
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			X
(4) Provide for improved accessibility to shipping, docking and storage facilities;			X
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			X
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;	X		
(7) Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;			X
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			X
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			X
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaiʻi's natural environment;	X		
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;	X		
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and			X
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.	X		
Discussion: The Project Site is located in the vicinity of several transit service lines and serviced by UHM's Rainbow Shuttle, as well as the "Biki" bikeshare system and short-and-long term bike storage racks. The Proposed Action would prioritize on-site parking for short-term rideshare, carshare and childcare loading zones to promote multi-modal transportation.			
HRS § 226-18: Objectives and Policies for Facility Systems–Energy			
(a) **Objectives:** Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			
(1) Dependable, efficient and economical statewide energy systems capable of supporting the needs of the people;			X
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawaiʻi's dependence on imported fuels for electrical generation and ground transportation;			X
(3) Greater diversification of energy generation in the face of threats to Hawaiʻi's energy supplies and systems;			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(4) Reduction, avoidance or sequestration of greenhouse gas emissions from energy supply and use; and			X
(5) Utility models that make the social and financial interests of Hawaiʻi's utility customers a priority.			X
(b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably priced and dependable energy services to accommodate demand.			X
(c) Other Policies:			
(1) Support research and development as well as promote the use of renewable energy sources;			X
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			X
(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural and public health costs and benefits;			X
(4) Promote all cost-effective conservation of power and fuel supplies through measures including:			
(A) Development of cost-effective demand-side management programs;			X
(B) Education;			X
(C) Adoption of energy-efficient practices and technologies; and	X		
(D) Increasing energy efficiency and decreasing energy use in public infrastructure.			X
(5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies;			X
(6) Support research, development, demonstration and use of energy efficiency, load management and other demand-side management programs, practices and technologies;			X
(7) Promote alternate fuels and transportation energy efficiency;			X
(8) Support actions that reduce, avoid or sequester greenhouse gases in utility, transportation and industrial sector applications;			X
(9) Support actions that reduce, avoid or sequester Hawaiʻi's greenhouse gas emissions through agriculture and forestry initiatives;			X
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			X
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited- term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawaiʻi.			X
Discussion: LEED standards will be used as guidelines during the Proposed Action's design process to integrate water and energy conservation.			
HRS § 226-18.5: Objectives and Policies for Facility Systems–Telecommunications			
(a) **Objective:** Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient and economical statewide telecommunications systems capable of supporting the needs of the people.			X
(b) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced and dependable telecommunications services to accommodate demand.			X
(c) **Other Policies:**			
(1) Facilitate research and development of telecommunications systems and resources;			X
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			X
(3) Promote efficient management and use of existing telecommunications systems and services; and			X
(4) Facilitate the development of education and training of telecommunications personnel.			X
Discussion: The Proposed Action does not affect the objectives and policies of the Facility Systems-Telecommunications.			
HRS § 226-19: Objectives and Policies for Socio-Cultural Advancement–Housing			
(a) **Objectives:** Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:	X		
(1) Greater opportunities for Hawaiʻi's people to secure reasonably priced, safe, sanitary and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawaiʻi's population.	X		

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(2) The orderly development of residential areas sensitive to community needs and other land uses.	X		
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaiʻi's people.	X		
(b) Policies:			
(1) Effectively accommodate the housing needs of Hawaiʻi's people.	X		
(2) Stimulate and promote feasible approaches that increase housing choices for low- income, moderate-income and gap-group households.	X		
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style and size of housing.			X
(4) Promote appropriate improvement, rehabilitation and maintenance of existing housing units and residential areas.			X
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services and other concerns of existing communities and surrounding areas.	X		
(6) Facilitate the use of available vacant, developable and underutilized urban lands for housing.	X		
(7) Foster a variety of lifestyles traditional to Hawaiʻi through the design and maintenance of neighborhoods that reflect the culture and values of the community.	X		
(8) Promote research and development of methods to reduce the cost of housing construction in Hawaiʻi.			X
Discussion: The Proposed Action is intended to provide affordable, family-oriented housing to UHM graduate students and junior faculty that are unable to utilize existing subsidized rental housing on campus because they do not meet specific eligibility criteria or are unable to afford the high cost of living in the neighborhoods surrounding UH. It would serve to expand the inventory of affordable housing on campus as a high-density, mixed-use, transit-oriented development.			
HRS § 226-20: Objectives and Policies for Socio-Cultural Advancement–Health			
(a) Objectives: Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:			
(1) Fulfillment of basic individual health needs of the general public.	X		
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaiʻi's communities.	X		
(3) Elimination of health disparities by identifying and addressing social determinants of health.			X
(b) Policies:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			X
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			X
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			X
(5) Provide programs, services and activities that ensure environmentally healthful and sanitary conditions.	X		
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring and enforcement.			X
(7) Prioritize programs, services, interventions and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702 and to reduce health disparities.			X
Discussion: The Proposed Action will use LEED design standards to create environmentally healthy and sanitary living conditions.			
HRS § 226-21: Objective and Policies for Socio-Cultural Advancement–Education			
(a) Objective: Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities and aspirations.	X		
(b) Policies:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation and cultural pursuits of all groups.			X
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.	X		
(3) Provide appropriate educational opportunities for groups with special needs.			X
(4) Promote educational programs which enhance understanding of Hawaiʻi's cultural heritage.	X		
(5) Provide higher educational opportunities that enable Hawaiʻi's people to adapt to changing employment demands.			X
(6) Assist individuals, especially those experiencing critical employment problems or barriers or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			X
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking and reasoning.	X		
(8) Emphasize quality educational programs in Hawaiʻi's institutions to promote academic excellence.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(9) Support research programs and activities that enhance the education programs of the State.			X
Discussion: The primary purpose of the Proposed Action is to provide affordable, family-oriented housing to UHM graduate students and junior faculty that are unable to utilize existing rental housing on the UHM campus or afford market rental housing in surrounding neighborhoods. UHM has identified the need for housing as a priority for future growth on the UHM campus. The Proposed Action intends to create affordable housing for UHM students and faculty for those who may not includes creating a childcare facility onsite for student and faculty children from two to five years old that would serve to develop resources and programs, like basic listening, speaking and reasoning skills, for early childhood education. It's close proximity to Kāpapa Loʻi ʻo Kānewai could encourage student and visitor engagement and understanding of this cultural resource.			
HRS § 226-22: Objective and Policies for Socio-Cultural Advancement–Social Services			
(a) Objective: Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families and groups to become more self-reliant and confident to improve their well-being.	X		
(b) Policies:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			X
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families and groups to deal effectively with social problems and to enhance their participation in society.	X		
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaiʻi's communities.			X
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X
(5) Support public and private efforts to prevent domestic abuse and child molestation and assist victims of abuse and neglect.			X
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			X
Discussion: The Proposed Action is a P3 partnership between the Developer and UHM. It is intended to provide affordable, family-friendly housing on-campus.			
HRS § 226-23: Objective and Policies for Socio-Cultural Advancement–Leisure			
(a) Objective: Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic and recreational needs for present and future generations.	X		

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(b) Policies:			
(1) Foster and preserve Hawaiʻi's multi-cultural heritage through supportive cultural, artistic, recreational and humanities-oriented programs and activities.			X
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic and recreational needs of all diverse and special groups effectively and efficiently.			X
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities and improved facility design and maintenance.			X
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological or biological values while ensuring that their inherent values are preserved.	X		
(5) Ensure opportunities for everyone to use and enjoy Hawaiʻi's recreational resources.			X
(6) Assure the availability of sufficient resources to provide for future cultural, artistic and recreational needs.			X
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaiʻi's people.			X
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk and traditional art forms.			X
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawaiʻi's population to participate in the creative arts.			X
(10) Assure adequate access to significant natural and cultural resources in public ownership.	X		
Discussion: The Proposed Action would create a centralized "live-work-play" environment within UHM's park-like campus and encourage social interaction and connectivity across the campus. The Project Site's proximity to Ka Papa Loʻi o Kānewai could encourage student and visitor engagement with this cultural resource			
HRS § 226-24: Objective and Policies for Socio-Cultural Advancement–Individual Rights and Personal Well-being			
(a) Objective: Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.			X
(b) Policies:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			X
(2) Uphold and protect the national and state constitutional rights of every individual.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(3) Assure access to, and availability of, legal assistance, consumer protection and other public services which strive to attain social justice.			X
(4) Ensure equal opportunities for individual participation in society.			X
Discussion: The Proposed Action does not affect the objectives and policies of the Socio-Cultural Advancement—Individual Rights and Personal Well-Being.			
HRS § 226-25: Objective and Policies for Socio-Cultural Advancement-Culture			
(a) Objective: Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs and arts of Hawaiʻi's people.	X		
(b) Policies:			
(1) Foster increased knowledge and understanding of Hawaiʻi's ethnic and cultural heritages and the history of Hawaiʻi.	X		
(2) Support activities and conditions that promote cultural values, customs and arts that enrich the lifestyles of Hawaiʻi's people and which are sensitive and responsive to family and community needs.	X		
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaiʻi.			X
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaiʻi's people and visitors.	X		
Discussion: The design elements of the space will reflect the traditions, history and spiritual significance of Mānoa Valley and Hawaiian culture. It incorporates shaded common areas that visually connect pedestrians and residents to the Mānoa Stream and green corridors between the Upper Campus and Lower Campus.			
HRS § 226-26: Objectives and Policies for Socio-Cultural Advancement–Public Safety			
(a) Objectives: Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			
(1) Assurance of public safety and adequate protection of life and property for all people.	X		
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters and other major disturbances.			X
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaiʻi's people.			X
(b) Policies Related to Public Safety:			
(1) Ensure that public safety programs are effective and responsive to community needs.	X		
(2) Encourage increased community awareness and participation in public safety programs.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
(c) Policies Related to Criminal Justice:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			X
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			X
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			X
(d) Policies Related to Emergency Management:			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural or technological disasters and civil disturbances at all times.			X
(2) Enhance the coordination between emergency management programs throughout the State.			X
Discussion: The HPD was contacted as part of the EA pre-consultation process. Their comments were included in the EA to ensure the Project Site is a safe environment for UHM students, residents and visitors.			
HRS § 226-27: Objectives and Policies for Socio-Cultural Advancement–Government			
(a) Objectives: Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives: **(1)** Efficient, effective and responsive government services at all levels in the State. **(2)** Fiscal integrity, responsibility and efficiency in the state government and county governments.			X
(b) Policies:			
(1) Provide for necessary public goods and services not assumed by the private sector.			X
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction and response.			X
(3) Minimize the size of government to that necessary to be effective.			X
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawaiʻi.			X
(5) Assure that government attitudes, actions and services are sensitive to community needs and concerns.			X
(6) Provide for a balanced fiscal budget.			X
(7) Improve the fiscal budgeting and management system of the State.			X
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			X

HAWAIʻI STATE PLAN PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	Consistent?		
	Yes	No	N/A
Discussion: The Proposed Action does not affect the objectives and policies of the Socio-Cultural Advancement—Government.			

Table 5-2 outlines the Proposed Action's consistency with the Hawaiʻi State Plan Part III Priority Guidelines. Those that do not apply are not discussed.

Table 5-2: Consistency with Hawaiʻi State Plan Part III

HAWAIʻI STATE PLAN PART III. PRIORITY GUIDELINES	Consistent?		
	Yes	No	N/A
HRS§226-103 Economic Priority Guidelines			
Discussion: The Economic Priority Guidelines are not applicable to the Proposed Action.			
HRS §226-104 Population Growth and Land Resources Priority Guidelines			
(a) Priority guidelines to effect desired statewide growth and distribution:	X		
(1) Encourage planning and resource management to ensure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaiʻi's people.	X		
(2) Manage a growth rate for Hawaiʻi's economy that will parallel future employment needs for Hawaiʻi's people.			X
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.			X
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			X
(5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.			X
(6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.			X
(7) Support the development of high technology parks on the neighbor islands.			X
Discussion: The Project Site is located within the Primary Urban Center. It would not increase population growth rates, but instead redistribute UHM students and faculty from other areas across Oʻahu into a designated urban growth area.			
(b) Priority guidelines for regional growth distribution and land resource utilization			
(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.	X		
(2) Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			X
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.			X
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			X
(5) In order to preserve green belts, give priority to state capital improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a non-contiguous new urban core.			X

HAWAIʻI STATE PLAN PART III. PRIORITY GUIDELINES	Consistent?		
	Yes	No	N/A
(6) Seek participation from the private sector for the cost of building infrastructure and utilities and maintaining open spaces.	X		
(7) Pursue rehabilitation of appropriate urban areas.	X		
(8) Support the redevelopment of Kakaʻako into a viable residential, industrial, and commercial community.			X
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.	X		
(10) Identify critical environmental areas in Hawaiʻi to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.			X
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			X
(12) Utilize Hawaiʻi's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	X		
(13) Protect and enhance Hawaiʻi's shoreline, open spaces, and scenic resources.			X
Discussion: The Proposed Action is a P3 project between UHM and the Developer. It is intended to encourage urban growth within existing urban area by providing affordable housing for UHM students and faculty on campus. The Project's design and the use of BMPs during construction will mitigate potential negative impacts on the surrounding environment.			
HRS §226-105 Crime and Criminal Justice			
Discussion: The Crime and Criminal Justice Guidelines are not applicable to the Proposed Action.			
HRS §226-106 Affordable Housing **Priority guidelines for the provision of affordable housing:**			
(1) Seek to use marginal or non-essential agricultural land and public land to meet housing needs of low and moderate-income and gap-group households.			X
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			X
(3) Improve information and analysis relative to land availability and suitability for housing.			X
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawaiʻi's low and moderate-income households, gap-group households, and residents with special needs.			X
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaiʻi's people for the purchase of initial owner-occupied housing.			X
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.	X		

HAWAIʻI STATE PLAN PART III. PRIORITY GUIDELINES	Consistent?		
	Yes	No	N/A
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			X
(8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.			X
Discussion: The Proposed Action is a P3 project between UHM and the Developer that intends to provide affordable housing for UHM students and faculty on campus.			
HRS §226-107 Quality Education **Priority guidelines to promote quality education:**			
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement.			X
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs			X
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force.			X
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities.			X
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for: (A) The electronic exchange of information; (B) Statewide electronic mail; and (C) Access to the Internet. Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives.			X
(6) Pursue the establishment of Hawaiʻi's public and private universities and colleges as research and training centers of the Pacific.			X
(7) Develop resources and programs for early childhood education.	X		
(8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education.			X
(9) Strengthen and expand educational programs and services for students with special needs.			X
Discussion: The Proposed Action includes creating a childcare facility onsite for student and faculty children from two to five years old that would serve to develop resources and programs for early childhood education.			
HRS §226-108 Sustainability **Priority guidelines and principals to promote sustainability:**			
(1) Encouraging balanced economic, social, community, and environmental priorities.	X		
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State.	X		
(3) Promoting a diversified and dynamic economy.			X
(4) Encouraging respect for the host culture.	X		

HAWAIʻI STATE PLAN PART III. PRIORITY GUIDELINES	Consistent?		
	Yes	No	N/A
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.	X		
(6) Considering the principles of the ahupuaʻa system.			X
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawaiʻi.			X
Discussion: The Proposed Action encourages balanced economic, social, community and environmental priorities by providing affordable housing, a childcare center and retail spaces for the UHM community. LEED standards will help guide the design to respect the State's natural resources, while design elements of the space will reflect the traditions, history, and spiritual significance of Mānoa Valley and Hawaiian culture.			
HRS §226-109 Climate Change Adaption			
Discussion: The Climate Change and Adaptation Guidelines are not applicable to the Proposed Action.			

5.1.2 Hawaiʻi State Functional Plan

The Hawaiʻi State Plan directs appropriate State agencies to prepare Functional Plans which address statewide needs, problems and issues and recommend policies and actions to mitigate those problems. The Functional Plans are prepared to further define and implement statewide goals, objectives, policies and priority guidelines contained in the Hawaiʻi State Plan. Thirteen Functional Plans were prepared to implement the State Plan provisions in the areas of agriculture, conservation lands, education, employment, energy, health, higher education, historic preservation, housing, human services, recreation, tourism and transportation. Table 5-3 outlines the Proposed Action's consistency with those objectives.

Table 5-3: Consistency with Hawaiʻi State Functional Plans

HAWAIʻI STATE FUNCTIONAL PLANS		Consistent?		
		Yes	No	N/A
1	**Agricultural State Functional Plan (1991)**			
Purpose: Continued viability of agriculture throughout the State.				X
Discussion: The Proposed Action is not applicable to the Agricultural State Functional Plan.				
2	**Conservation Lands State Functional Plan (1991)**			
Purpose: Addresses issues of population and economic growth and its strain on current natural resources; broadening public use of natural resources while protecting lands and shorelines from overuse; additionally, promotes the aquaculture industry.				X
Discussion: The Proposed Action is not applicable to the Conservation Lands State Functional Plan.				
3	**Education State Functional Plan (1989)**			

HAWAIʻI STATE FUNCTIONAL PLANS	Consistent?		
	Yes	No	N/A
Purpose: Improvements to Hawaiʻi's educational curriculum, quality of educational staff and access to adequate facilities.			X
Discussion: The Proposed Action is not applicable to the Education State Functional Plan.			
4 Agricultural State Functional Plan (1991)			
Purpose: Continued viability of agriculture throughout the State.			X
Discussion: The Proposed Action is not applicable to the Agricultural State Functional Plan.			
5 Employment State Functional Plan (1990)			
Purpose: Improve the qualifications, productivity and effectiveness of the State's workforce through better education and training of workers as well as efficient planning of economic development, employment opportunities and training activities.			X
Discussion: The Proposed Action is not applicable to the Employment State Functional Plan.			
6 Health State Functional Plan			
Purpose: Improve the health care system by providing for those who do not have access to private health care providers; increasing preventative health measures; addressing 'quality of care' elements in private and public sectors to cut increasing costs.			X
Discussion: The Proposed Action is not applicable to the Health State Functional Plan.			
7 Higher Education Functional Plan (1984)			
Purpose: Prepare Hawaiʻi's citizens for the demands of an increasingly complex world through providing technical and intellectual tools.			X
Discussion: The Proposed Action is not applicable to the Higher Education Functional Plan.			
8 Historic Preservation State Functional Plan (1991)			
Purpose: Preservation of historic properties, records, artifacts and oral histories; provide public with information/education on the ethnic and cultural heritages and history of Hawaiʻi	X		
Discussion: The Proposed Action will support the Historic Preservation State Functional Plan. No significant impacts to historic resources are anticipated for the Proposed Action because no historic properties occur on-site. However, because of the Project Site's proximity to known cultural resources an Archaeological Literature Review and Field Inspection report was prepared in connection with the EA. Recommendations from the report will be used to avoid impacts to any potential resources that may be found on-site during construction. As such, the Proposed Action, through the EA process, is consistent with the Historic Preservation State Functional Plan.			
9 Housing State Functional Plan (1989)			
Purpose: Provide affordable rental and for-sale housing; increase homeownership and amount of rental housing units; acquiring public and privately-owned lands for future residential development; maintain a statewide housing data system.	X		
Discussion: The Proposed Action supports the Housing State Functional Plan by providing new and affordable rental housing units to UHM students and junior faculty.			
10 Human Services State Functional Plan (1991)			

HAWAIʻI STATE FUNCTIONAL PLANS	Consistent?		
	Yes	No	N/A
Purpose: Refining support systems for families and individuals by improving elderly care, increasing preventative measures to combat child/spousal abuse and neglect; providing means for 'self-sufficiency'			X
Discussion: The Proposed Action is not applicable to the Human Services State Functional Plan.			
11 Recreation State Functional Plan (1991)			
Purpose: Manage the use of recreational resources via addressing issues: (1) ocean and shoreline recreation, (2) mauka, urban and other recreation, (3) public access to shoreline and upland recreation areas, (4) resource conservation and management, (5) management of recreation programs/facilities/areas and (6) wetlands protection and management.			X
Discussion: The Proposed Action is not applicable to the Recreation State Functional Plan.			
12 Tourism State Functional Plan (1991)			
Purpose: Balance tourism/economic growth with environmental and community concerns; development that is cognizant of the limited land and water resources of the islands; maintaining friendly relations between tourists and community members; development of a productive workforce and enhancement of career and employment opportunities in the visitor industry.			X
Discussion: The Proposed Action is not applicable to the Tourism State Functional Plan.			
13 Transportation State Functional Plan (1991)			
Purpose: Development of a safer, more efficient transportation system that also is consistent with planned physical and economic growth of the state; construction of facility and infrastructure improvements; develop a transportation system balanced with new alternatives; pursue land use initiatives which help reduce travel demand.	X		
Discussion: The Proposed Action supports the Transportation State Functional Plan by reducing travel demand on Honolulu's existing transportation systems by pursuing land use that promotes a "live-work-play" environment for students and faculty on the UHM campus. This would reduce the number of daily commuters and help reduce the travel demands on and around campus.			

5.1.3 State Land Use Law

The State Land Use Law, HRS §205, is intended to preserve, protect and encourage the development of lands in the State for uses that are best suited to the public health and welfare of Hawaiʻi's people. Under HRS §205, all lands in the State of Hawaiʻi are classified by the State Land Use Commission (LUC) into one of four major categories of State Land Use Districts. These districts are identified as the Urban District, Agricultural District, Conservation District and Rural District. Permitted uses within the districts are prescribed under HRS §205-2 and the LUC's Administrative Rules prescribed under HAR §15-15-3.

The Project is situated entirely in the Urban State Land Use District. The Urban District generally include lands characterized by "city-like" concentrations of people, structures and

services. This District also includes vacant areas for future development. Jurisdiction of Urban Districts lie primarily with the county. In general, lot sizes and uses permitted in the district area are established by the County ordinances or rules. The purpose and intent of the Proposed Action is consistent with the Urban State Land Use District.

5.1.4 Hawaiʻi Coastal Zone Management Plan

The National Coastal Zone Management (CZM) Program was created through passage of the Coastal Zone Management Act of 1972. The U.S. Congress enacted the CZM Act to assist states in better managing coastal and estuarine environments. The Act provides grants to states that develop and implement federally approved CZM plans. The goal of the CZM Act is to "preserve, protect, develop and where possible, to restore or enhance the resources of the nation's coastal zone." Hawaiʻi's CZM Act, adopted as HRS §205A, provides a basis for protecting, restoring and responsibly developing coastal communities and resources. In Hawaiʻi, the "coastal zone management area" means all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the territorial sea.

The Proposed Action's conformance with the ten objectives and numerous policies of the State of Hawaiʻi CZM Plan is set forth in Table 5-4 below (OP 1990). The Proposed Action does not include the use of land that is within the Special Management Area as designated by the City (*see* Figure 1-1: Location Map). Therefore, Special Management Area permits are not required to implement the Proposed Action.

Table 5-4: Consistency with the Hawaiʻi Coastal Zone Management Program

HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM OBJECTIVES	Consistent?		
	Yes	No	N/A
1 Recreational Resources			
Objective: Provide coastal recreational opportunities accessible to the public.			X
Policies:			
(A) Improve coordination and funding of coastal recreational planning and management; and			X
(B) Provide adequate, accessible and diverse recreational opportunities in the coastal zone management area by:			X
(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;			X
(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;			X
(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			X
(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;			X
(v) Ensuring public recreational uses of county, state and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;			X
(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;	X		
(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches and artificial reefs for surfing and fishing; and			X
(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources and county authorities; and crediting such dedication against the requirements of section 46-6.			X
Discussion: The Proposed Action is not a coastal dependent development, is not located on the coastline and is not in the SMA. Most policies are not applicable to the Proposed Action. However, the Proposed Action will comply with State water quality standards NPDES permit program conditions. The stormwater management system is designed to retain stormwater on-site. No impact to coastal waters is anticipated.			

HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM OBJECTIVES	Consistent?		
	Yes	No	N/A
2 Historic Resources			
Objective: Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.	X		
Policies:			
(A) Identify and analyze significant archaeological resources;	X		
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and	X		
(C) Support state goals for protection, restoration, interpretation and display of historic resources.	X		
Discussion: While the Proposed Action does not fall within the coastal zone management area it will protect historic and archaeological resources. No significant impacts to historic resources are anticipated for the Proposed Action because no historic properties occur on-site. However, because of the Project Site's proximity to known cultural resources an ALRFI report was prepared in connection with the EA. Recommendations from the report will be used to avoid impacts to any potential resources that may be found on-site during construction.			
3 Scenic and Open Space Resources			
Objective: Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.	X		
Policies:			
(A) Identify valued scenic resources in the coastal zone management area;	X		
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;	X		
(C) Preserve, maintain and, where desirable, improve and restore shoreline open space and scenic resources; and			X
(D) Encourage those developments that are not coastal dependent to locate in inland areas.	X		
Discussion: The Proposed Action will preserve and maintain the integrity of Mānoa Stream through the use of temporary and permanent best management practices.			
4 Coastal Ecosystems			
Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.	X		
Policies:			
(A) Exercise an overall conservation ethic, practice stewardship in the protection, use and development of marine and coastal resources;			X
(B) Improve the technical basis for natural resource management;			X
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;			X

HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM OBJECTIVES	Consistent?		
	Yes	No	N/A
(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization and similar land and water uses, recognizing competing water needs; and			X
(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.	X		
Discussion: The Proposed Action is not a coastal dependent development, is not located on the coastline and is not in the SMA. Most policies are not applicable to the Proposed Action. However, the Proposed Action will comply with State water quality standards, including the HDOH NPDES permit program. The stormwater management system is designed to retain stormwater on-site. No impact to coastal waters is anticipated.			
5 Economic Uses			
Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.			X
Policies:			
(A) Concentrate coastal dependent development in appropriate areas;			X
(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed and constructed to minimize adverse social, visual and environmental impacts in the coastal zone management area; and			X
(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long- term growth at such areas and permit coastal dependent development outside of presently designated areas when:			X
(i) Use of presently designated locations is not feasible;			X
(ii) Adverse environmental effects are minimized; and			X
(iii) The development is important to the State's economy.			X
Discussion: The Proposed Action is not a coastal dependent development, is not located on the coastline and does not contain any coastal ecosystems; therefore, these policies are not applicable.			
6 Coastal Hazards			
Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.	X		
Policies:			
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence and point and nonpoint source pollution hazards;	X		
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence and point and nonpoint source pollution hazards;	X		
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and	X		

HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM OBJECTIVES	Consistent?		
	Yes	No	N/A
(D) Prevent coastal flooding from inland projects.	X		
Discussion: The Proposed Action is located 1.6 miles inland from the coastline and outside of the projected storm wave, sea level rise and tsunami zones. It is adjacent to Mānoa Stream; however it is outside the 500-year floodplain and will comply with Federal Flood Insurance Program requirements as appropriate. Stormwater runoff will be managed on-site through LID design principals.			
7 Managing Development			
Objective: Improve the development review process, communication and public participation in the management of coastal resources and hazards.			X
Policies:			
(A) Use, implement and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;			X
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and			X
(C) Communicate the potential short and long-term impacts of proposed significant proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.			X
Discussion: The Proposed Action is not a coastal development, is not located on the coastline and is not in the SMA; therefore, these policies are not applicable.			
8 Public Participation			
Objective: Stimulate public awareness, education and participation in coastal management.			X
Policies:			
(A) Promote public involvement in coastal zone management processes;			X
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact and public workshops for persons and organizations concerned with coastal issues, developments and government activities; and			X
(C) Organize workshops, policy dialogues and site-specific mediations to respond to coastal issues and conflicts.			X
Discussion: The Proposed Action is not a coastal development and is not in the SMA; therefore, these policies are not applicable.			
9 Beach Protection			
Objective: Protect beaches for public use and recreation.			X
Policies:			
(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes and minimize loss of improvements due to erosion;			X

HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM OBJECTIVES	Consistent?		
	Yes	No	N/A
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and			X
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.			X
(D) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and			X
(E) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.			X
Discussion: The Proposed Action is not a coastal dependent development, is not located on the coastline and is not in the SMA; therefore, these policies are not applicable.			
10 Marine Resources			
Objective: Promote the protection, use and development of marine and coastal resources to assure their sustainability.			X
Policies:			
(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;			X
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;			X
(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;			X
(D) Promote research, study and understanding of ocean processes, marine life and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and			X
(E) Encourage research and development of new, innovative technologies for exploring, using or protecting marine and coastal resources.			X
Discussion: The Proposed Action is not a coastal dependent development, is not located on the coastline and is not in the SMA; therefore, these policies are not applicable.			

5.1.5 Long Range Development Plan

For decades, the UHM campus developed without the benefit of an organized vision and approved physical development plan. This was rectified in 1987, when the first UHM LRDP was approved and adopted. It envisioned a vital urban setting similar to a successful small town, within a pedestrian-friendly environment organized around gateways, outdoor malls, paths and plazas. The 1987 LRDP was updated in 1994 to respond to changes in academic priorities, capital improvement priorities, enrollment, environmental issues, funding and changes across the campus created in part by new developments.

The 1994 LRDP was updated in 2007, and this document is the LRDP guiding the Proposed Action. Additionally, the Proposed Action is one of several projects identified in the forthcoming UHM 2019 LRDP Update and aligns with its guiding principles for the UHM Framework for the Future as well as its Building Design and Performance Standards for the campus.

The 2007 LRDP puts emphasis on the next five to ten years of development and is based upon the principles of the 1987 Plan (UHM 2007). However, it incorporates several new "Major Themes" that were developed through a participatory visioning process that included students, staff, administrators and members of the community. The Major Themes were intended to create a vision for future development, while addressing current facility needs and the desire to create a more complete campus community experience. The Major Themes established are:

- Globally Connected Hawaiian Place of Learning, Leadership and Service
- Livable Urban Campus
- Outdoor Spaces for Living and Learning
- Leader in Environmental Sustainability

The Proposed Action fulfills these themes as it would create a centralized "live-work-play" environment on UHM's campus that encourages social interaction and connectivity. It aims to create affordable housing for graduate students and junior faculty within a mixed-use collaborative environment and create a gathering space for students and faculty to shop, dine, interact and live near other UHM housing. This would create a livable urban campus by eliminating the need for students and faculty to commute to UHM, and the adjacency to other housing would foster a more complete campus community experience. Additionally, the Project Site's proximity to Ka Papa Loʻi o Kānewai could encourage student and visitor engagement with this cultural resource furthering the vision of creating a globally connected Hawaiian place of learning, leadership and service.

The design elements of the space will reflect the traditions, history and spiritual significance of Mānoa Valley and Hawaiian culture and create outdoor spaces for living and learning by

incorporating shaded common areas. The design encourages walkability by visually connecting pedestrians and residents to the Mānoa Stream and green corridors between the Upper Campus and Lower Campus. UHM's vision of being a leader in environmental sustainability is met by using LEED standards and LID practices to guide the design process to create an environmentally conscious development space.

5.2 CITY AND COUNTY OF HONOLULU

5.2.1 Oʻahu General Plan

The *Oʻahu General Plan* is a statement of objectives and policies for the long-range social, economic, environmental and design objectives of the City planning process. The Proposed Action's consistency with objectives and policies of the Oʻahu General Plan is discussed in Table 5-5 (CCH DPP 2002). Objectives that are not applicable are noted, but do not include a discussion.

Table 5-5: Consistency with Oʻahu General Plan

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
I. Population			
Objective A: To control the growth of Oʻahu's resident and visitor populations in order to avoid social, economic and environmental disruptions.			X
Policies			
(1) Participate in State and Federal programs which seek to develop social, economic, legal and environmental controls over population growth.			X
(2) Seek a balance between the rate of immigration and the rate of outmigration by reducing immigration.			X
(3) Support Federal policies providing for a more even distribution of immigrants throughout the country.			X
(4) Seek to maintain a desirable pace of physical development through City and County regulations.			X
(5) Encourage family planning.			X
(6) Publicize the desire of the City and County to limit population growth			X
Objective B: To plan for future population growth.			X
Policies			
(1) Allocate efficiently the money and resources of the City and County in order to meet the needs of Oʻahu's anticipated future population.			X
(2) Provide adequate support facilities to accommodate future growth in the number of visitors to Oʻahu.			X
Objective C: To establish a pattern of population distribution that will allow the people of Oʻahu to live and work in harmony.	X		
Policies			
(1) Facilitate the full development of the primary urban center.	X		
(2) Encourage development within the secondary urban center at Kapolei and the ʻEwa and Central Oʻahu urban-fringe and rural areas and meet housing needs not readily provided in the urban center.			X
(3) Manage physical growth and development in the urban-fringe and rural areas so that: **(a)** An undesirable spreading of development is prevented; and, **(b)** Their population densities are consistent with the character of development and environmental qualities desired for such areas.			X
(4) Direct growth according to Policies 1, 2 and 3 above by providing land development capacity and needed infrastructure to seek a 2025 distribution of Oʻahu's residential population as follows:	X		

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
LOCATION — % SHARE OF 2025 ISLANDWIDE POPULATION Primary Urban Center — 46.0% Ewa — 13.0% Central Oahu — 17.0% East Honolulu — 5.3% Koolaupoko — 11.6% Koolauloa — 1.4% North Shore — 1.7% Waianae — 4.0% 100.0%			
Discussion: The Proposed Action would have positive impacts on Population policy objectives. UHM is located within the PUC, and the Proposed Action would create additional affordable housing units there. It would reduce physical growth and development in the urban-fringe areas by lowering the number of student and faculty commuters from these areas, creating a reduction in the undesirable spreading of development.			
II. Economic Activity			
Objective A: To promote employment opportunities that will enable all the people of Oʻahu to attain a decent standard of living.	X		
Policies			
(1) Encourage the growth and diversification of Oʻahu's economic base.	X		
(2) Encourage the development of small businesses and larger industries which will contribute to the economic and social well-being of Oʻahu residents.	X		
(3) Encourage the development in appropriate locations on Oʻahu of trade, communications and other industries of a nonpolluting nature.	X		
(4) Encourage the development of local, national and world markets for the products of Oʻahu-based industries.			X
(5) Encourage the wider distribution of available employment opportunities through such methods as shortening the work week and reducing the use of overtime.			X
(6) Encourage the continuation of a significant level of Federal employment on Oʻahu.			X
Discussion: The Proposed Action would have positive impacts on Economic Activity policy objectives. The Proposed Action includes retail space that would provide employment opportunities for UHM students or members of the community, which would contribute to the economic and social well-being of Oʻahu residents.			
Objective B: To maintain the viability of Oʻahu's visitor industry.			X

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
Policies			
(1) Provide for the long-term viability of Waikīkī as Oʻahu's primary resort area by giving the area priority in visitor industry related public expenditures.			X
(2) Provide for high quality and safe environment for visitors and residents in Waikīkī.			X
(3) Encourage private participation improvements to facilities in Waikīkī.			X
(4) Prohibit major increases in permitted development densities in Waikīkī.			X
(5) Prohibit further growth in permitted development densities in Waikīkī.			X
(6) Permit the development of secondary resort areas in West Beach, Kahuku, Makaha and Laie.			X
(7) Manage the development of secondary resort areas in a manner which respects existing lifestyles, the natural environment and avoids substantial increases in the cost of providing public services in the area.			X
(8) Preserve the well-known and widely publicized of Oʻahu for visitors as well as residents.			X
(9) Encourage the visitor industry to provide a high level of service to visitors.			X
Objective C: To maintain the viability of agriculture on Oʻahu.			X
Policies			
(1) Assist the agricultural industry to ensure the continuation of agriculture as an important source of income and employment.			X
(2) Support agricultural diversification in all agricultural areas on Oʻahu.			X
(3) Support the development of markets for local products, particularly those with the potential for economic growth.			X
(4) Provide sufficient agricultural land in ʻEwa, Central Oʻahu and the North Shore to encourage the continuation of sugar and pineapple as viable industries.			X
(5) Maintain agricultural land along the Windward, North Shore and Waiʻanae coasts for truck farming, flower growing, aquaculture, livestock production and other types of diversified agriculture.			X
(6) Encourage the more intensive use of productive agricultural land.			X
(7) Encourage the use of more efficient production practices by agriculture, including the efficient use of water.			X
(8) Encourage the more efficient use of non- potable water for agricultural use.			X
Objective D: To make full use of the economic resources of the sea.			X
Policies			
(1) Assist the fishing industry to maintain its viability.			X
(2) Encourage the development of aquaculture, ocean research and other ocean-related activities.			X

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
(3) Focus the development of ocean related economic activities in the Northwestern Hawaiian Islands on those which are compatible with preserving the area's unique environmental, marine and wildlife assets.			X
Objective E: To prevent the occurrence of large-scale unemployment.			X
Policies			
(1) Encourage the training and employment of present residents for currently available and future jobs.			X
(2) Make full use of State and Federal employment and training programs.			X
(3) Encourage the provision of retraining programs for workers in industries with planned reductions in their labor force.			X
Objective F: To increase the amount of Federal spending on Oʻahu.			X
Policies			
(1) Take full advantage of Federal programs and grants which will contribute to the economic and social well-being of Oʻahu residents.			X
(2) Encourage the Federal government to pay for the cost of public services used by Federal agencies.			X
(3) Encourage the Federal government to lease new facilities rather than construct them on tax-exempt public land.			X
(4) Encourage the military to purchase locally all needed services and supplies which are available on Oʻahu.			X
Objective G: To bring about orderly economic growth on Oʻahu.			X
Policies			
(1) Direct major economic activity and government services to the primary urban center and the secondary urban center at Kapolei.			X
(2) Permit the moderate growth of business centers in the urban-fringe areas.			X
(3) Maintain sufficient land in appropriately located commercial and industrial areas to help ensure a favorable business climate on Oʻahu.			X
(4) Encourage the continuation of a high level of military-related employment in the Hickam-Pearl Harbor, Wahiawa, Kailua-Kāneʻohe and ʻEwa areas.			X
III. Natural Environment			
Objective A: To protect and preserve the natural environment.	X		
Policies			
(1) Protect Oʻahu's natural environment, especially the shoreline, valleys and ridges, from incompatible development.	X		
(2) Seek the restoration of environmentally damaged areas and natural resources.			X
(3) Retain the Island's streams as scenic, aquatic and recreation resources.	X		

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
(4) Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water- recharge areas, distinctive landforms and existing vegetation.	X		
(5) Require sufficient setbacks of improvements in unstable shoreline areas to avoid the future need for protective structures.			X
(6) Design surface drainage and flood-control systems in a manner which will help preserve their natural settings.	X		
(7) Protect the natural environment from damaging levels of air, water and noise pollution.	X		
(8) Protect plants, birds and other animals that are unique to the State of Hawaiʻi and the Island of Oʻahu.	X		
(9) Protect mature trees on public and private lands and encourage their integration into new developments.			X
(10) Increase public awareness and appreciation of Oʻahu's land, air and water resources.			X
(11) Encourage the State and Federal governments to protect the unique environmental, marine and wildlife assets of the Northwestern Hawaiian Islands.			X
Discussion: The Proposed Action will adhere to stringent BMPs during construction and operation to prevent impacts to surface and groundwater resources. As part of the EA process, a Flora and Fauna Survey was conducted. It determined that the Proposed Action may create minor short-term impacts to avian fauna found on-site during construction, these will only be temporary and have no long-term effects. Mitigation measures recommended in the report were included in the EA to prevent any significant or long-term impacts on the Project Site's natural environment.			
Objective B: To preserve and enhance the natural monuments and scenic views of Oʻahu for the benefit of both residents and visitors.	X		
Policies			
(1) Protect the Island's well-known resources: its mountains and craters; forests and watershed areas; marshes, rivers and streams; shoreline, fishponds and bays; and reefs and offshore islands.			X
(2) Protect Oʻahu's scenic views, especially those seen from highly developed and heavily traveled areas.	X		
(3) Locate roads, highways and other public facilities and utilities in areas where they will least obstruct important views of the mountains and the sea.			X
(4) Provide opportunities for recreational and educational use and physical contact with Oʻahu's natural environment.			X
Discussion: The Proposed Action is similar in height and design to neighboring buildings and would not inhibit Oʻahu's scenic views. During construction, potential impacts to air quality will be minimized using industry BMPs and project phasing. The Proposed Action anticipates potential			

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
minor short-term impacts to the acoustic environment from construction activities, such as excavation, grading and paving. These would be temporary, and no long-term impacts are anticipated.			
IV. Housing			
Objective A: To provide decent housing for all the people of Oʻahu at prices they can afford.	X		
Policies			
(1) Develop programs and controls which will provide decent homes at the least possible cost.			X
(2) Streamline approval and permit procedures for housing and other development projects.			X
(3) Encourage innovative residential development which will result in lower costs, added convenience and privacy and the more efficient use of street and utilities.	X		
(4) Establish public, and encourage private, programs to maintain and improve the condition of existing housing.	X		
(5) Make full use of State and Federal programs that provide financial assistance for low- and moderate-income homebuyers.			X
(6) Expand local funding mechanisms available to pay for government housing programs.			X
(7) Provide financial and other incentives to encourage the private sector to build homes for low- and moderate-income homebuyers.			X
(8) Encourage and participate in joint public-private development of low- and moderate-income housing.	X		
(9) Encourage the preservation of existing housing which is affordable low- and moderate-income housing.			X
(10) Promote the construction of affordable dwellings which take advantage of Oʻahu's year-round moderate climate.			X
(11) Encourage the construction of affordable homes with established low-density communities by such means as ʻohana units, duplex dwellings and cluster development.			X
(12) Encourage the production and maintenance of affordable rental housing.	X		
(13) Encourage the provision of affordable housing designed for the elderly and the handicapped.			X
(14) Encourage equitable relationships between landowners and leaseholders, between landlords and tenants and between condominium developers and owners.			X
Discussion: The Proposed Action is a P3 partnership between the Developer and UHM. The primary purpose of the Proposed Action is to provide affordable, family-oriented housing to UHM graduate			

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
students and junior faculty that are unable to utilize existing rental housing on campus or in surrounding neighborhoods.			
Objective B: To reduce speculation in land and housing.			X
Policies			
(1) Encourage the State government to coordinate its urban-area designations with the developmental policies of the City and County.			X
(2) Discourage private developers from acquiring and assembling land outside of areas planned for urban use.			X
(3) Seek public benefits from increases in the value of land owing to City and State developmental policies and decisions.			X
(4) Require government-subsidized housing to be delivered to appropriate purchasers and renters.			X
(5) Prohibit the selling or renting of government-subsidized housing for large profits.			X
Objective C: To provide the people of Oʻahu with a choice of living environments which are reasonably close to employment, recreation and commercial centers and which are adequately served by public utilities.			X
Policies			
(1) Encourage residential developments that offer a variety of homes to people of different income levels and to families of various sizes.			X
(2) Encourage the fair distribution of low- and moderate-income housing throughout the Island.			X
(3) Encourage residential development near employment centers.			X
(4) Encourage residential development in areas where existing roads, utilities and other community facilities are not being used to capacity.			X
(5) Discourage residential development where roads, utilities and community facilities cannot be provided at a reasonable cost.			X
(6) Preserve older communities through self-help, housing-rehabilitation, improvement districts and other governmental programs.			X
V. Transportation and Utilities			
Objective A: To create a transportation system which will enable people and goods to move safely, efficiently and at a reasonable cost; serve all people, including the poor, the elderly and the physically handicapped; and offer a variety of attractive and convenient modes of travel.	X		
Policies			
(1) Develop and maintain an integrated ground-transportation system consisting of the following elements and their primary purposes:	X		
(a) Public transportation-for travel to and from work and travel within Central Honolulu;			X

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES		Consistent?		
	Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
(b)	Roads and highways-for commercial traffic and travel in nonurban areas;			X
(c)	Bikeways-for recreational activities and trips to work, schools, shopping centers and community facilities; and	X		
(d)	Pedestrian walkways-for getting around Downtown and Waikīkī, and for trips to schools, parks and shopping centers.			X
(2)	Provide transportation services to people living within the Ewa, Central Oʻahu and Pearl City-Hawaiʻi Kai corridors primarily through a mass transit system including exclusive right-of-way rapid transit and feederbus components as well as through the existing highway system with limited improvements as may be appropriate.			X
(3)	Provide transportation services outside the Ewa, Central Oʻahu and Pearl City-Hawaiʻi Kai corridors primarily through a system of express- and feeder-buses as well as through the highway system with limited to moderate improvements sufficient to meet the needs of the communities being served.			X
(4)	Improve transportation facilities and services in the Ewa corridor and in the trans-Koʻolau corridors to meet the needs of Ewa and Windward communities.			X
(5)	Improve roads in existing communities to reduce congestion and eliminate unsafe conditions.			X
(6)	Consider both environmental impact as well as construction and operating costs as important factors in planning alternative nodes of transportation.			X
(7)	Promote the use of public transportation as a means of moving people quickly and efficiently, of conserving energy and of guiding urban development.	X		
(8)	Make available transportation services to people with limited mobility: the young, the elderly, the handicapped and the poor.			X
(9)	Promote programs to reduce dependence on the use of automobiles.			X
(10)	Discourage the inefficient use of the private automobile, especially in congested corridors and during peak-hour	X		
(11)	Make public and encourage private, improvements to major walkway systems.	X		
(12)	Encourage the provision of separate aviation facilities for small civilian aircraft.			X
(13)	Facilitate the development of a second deep-water harbor to relieve congestion in Honolulu Harbor.			X
Discussion: The Proposed Action is one of several projects proposed to support the UHM's LRDP transportation and connectivity goals by helping to create a "live-work-play" environment for students and faculty on campus. To support UHM's objective of promoting multi-modal transportation, the Proposed Action would encourage the use of existing parking structures found on the UHM campus instead of developing long-term parking on-site. The Project Site is located in the				

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
vicinity of several transit service lines and serviced by UHM's Rainbow Shuttle, as well as a "Biki" bikeshare system and short-and-long term bike storage racks. It will incorporate paving and landscaping that promotes pedestrian activity and connectivity on and around the Project Site.			
Objective B: To meet the needs of the people of Oʻahu for an adequate supply of water and for environmentally sound systems of waste disposal.			X
Policies			
(1) Develop and maintain an adequate supply of water for both residents and visitors.			X
(2) Develop and maintain an adequate supply of water for agricultural and industrial needs.			X
(3) Encourage the development of new technology which will reduce the cost of providing water and the cost of waste disposal.			X
(4) Encourage a lowering of the per-capita consumption of water and the per-capita production of waste.			X
(5) Provide safe, efficient and environmentally sensitive waste-collection and waste- disposal services.			X
(6) Support programs to recover resources from solid-waste and recycle wastewater.			X
(7) Require the safe disposal of hazardous waste.			X
Objective C: To maintain a high level of service for all utilities.			X
Policies			
(1) Maintain existing utility systems in order to avoid major breakdowns.			X
(2) Provide improvements to utilities in existing neighborhoods to reduce substandard conditions.			X
(3) Plan for the timely and orderly expansion of utility systems.			X
(4) Increase the efficiency of public utilities by encouraging a mixture of uses with peak periods of demand occurring at different times of the day**.**			X
Objective D: To maintain transportation and utility systems which will help Oʻahu continue to be a desirable place to live and visit.			X
Policies			
(1) Give primary emphasis in the capital- improvement program to the maintenance and improvement of existing roads and utilities.			X
(2) Use the transportation and utility systems as a means of guiding growth and the pattern of land use on Oʻahu.			X
(3) Encourage the study and use of telecommunications as an alternative to conventional transportation facilities.			X
(4) Evaluate the social, economic and environ- mental impact of additions to the transportation and utility systems before they are constructed.			X
(5) Require the installation of underground utility lines wherever feasible			X

O'AHU GENERAL PLAN OBJECTIVES AND POLICIES	Consistent?		
Amended October 3, 2002 (Resolution 02-205, CD1)	**Yes**	**No**	**N/A**
(6) Seek improved taxing powers for the City and County in order to provide a more equitable means of financing transportation and utility services.			X
VI. Energy			
Objective A: To maintain an adequate, dependable and economical supply of energy for Oʻahu residents.			X
Policies			
(1) Develop and maintain a comprehensive plan to guide and coordinate energy conservation and alternative energy development and utilization programs on Oʻahu.			X
(2) Establish economic incentives and regulatory measures which will reduce Oʻahu's dependence on petroleum as its primary source of energy.			X
(3) Support programs and projects which contribute to the attainment of energy self- sufficiency on Oʻahu.			X
(4) Promote and assist efforts to establish adequate petroleum reserves within Hawaiʻi's boundaries.			X
(5) Give adequate consideration to environ- mental, public health and safety concerns, to resource limitations and to relative costs when making decisions concerning alternatives for conserving energy and developing natural energy resources.			X
(6) Work closely with the State and Federal governments in the formulation and implementation of all City and County energy-related programs.			X
Objective B: To conserve energy through the more efficient management of its use.			X
Policies			
(1) Ensure that the efficient use of energy is a primary factor in the preparation and administration of land use plans and regulations.			X
(2) Provide incentives and, where appropriate, mandatory controls to achieve energy-efficient siting and design of new developments.			X
(3) Carry out public, and promote private, programs to more efficiently use energy in existing buildings and outdoor facilities.			X
(4) Promote the development of an energy-efficient transportation system.			X
Objective C: To fully utilize proven alternative sources of energy.			X
Policies			
(1) Encourage the use of commercially available solar energy systems in public facilities, institutions, residences and business developments.			X
(2) Support the increased use of operational solid waste energy recovery and other biomass energy conversion systems.			X

Objective D: To develop and apply new, locally available energy resources.			X
Policies			
(1) Support and participate in research, development, demonstration and commercialization programs aimed at producing new, economical and environmentally sound energy supplies from:			X
(a) solar insolation;			X
(b) biomass energy conversion;			X
(c) wind energy conversion;			X
(d) geothermal energy; and			X
(e) ocean thermal energy conversion.			X
(2) Secure State and Federal support of City and County efforts to develop new sources of energy.			X
Objective E: To establish a continuing energy information program.			X
Policies			
(1) Supply citizens with the information they need to fully understand the potential supply, cost and other problems associated with Oʻahu's dependence on imported petroleum.			X
(2) Foster the development of an energy conservation ethic among Oʻahu residents.			X
(3) Keep consumers informed about available alternative energy sources and their costs and benefits.			X
(4) Provide information concerning the impact of public and private decisions on future energy use.			X
Discussion: The Proposed Action will have no effect on the energy objectives; therefore, these policies are not applicable.			
VII. Physical Development and Urban Design			
Objective A: To coordinate changes in the physical environment of Oʻahu to ensure that all new developments are timely, well-designed and appropriate for the areas in which they will be located.	X		
Policies			
(1) Plan for the construction of new public facilities and utilities in the various parts of the Island according to the following order of priority: first, in the primary urban center; second, in the secondary urban center at Kapolei; and third, in the urban- fringe and rural areas.	X		
(2) Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation and public safety facilities.	X		
(3) Phase the construction of new developments so that they do not require more regional supporting services than are available.			X
(4) Require new developments to provide or pay the cost of all essential community services, including roads, utilities, schools, parks and emergency facilities that are intended to directly serve the development			X

(5)	Provide for more compact development and intensive use of urban lands where compatible with the physical and social character of existing communities.	X		
(6)	Encourage the clustering of developments to reduce the cost of providing utilities and other public services.	X		
(7)	Locate new industries and new commercial areas so that they will be well related to their markets and suppliers and to residential areas and transportation facilities.			X
(8)	Locate community facilities on-sites that will be convenient to the people they are intended to serve.	X		
(9)	Exclude from residential areas, uses which are major sources of noise and air pollution.			X
(10)	Establish danger zones to exclude incompatible uses from hazardous areas surrounding airfields, electromagnetic- radiation sources and storage places for fuel and explosives			X
(11)	Prohibit new airfields, electromagnetic- radiation sources and storage places for fuel and explosives from locating on-sites where they will endanger or disrupt nearby communities.			X
Discussion: The Project Site is located within a designated Urban Land Use area on the UHM campus. The location and timing of the Proposed Action align with the availability of adequate water supply, sewage treatment, drainage, transportation and public safety facilities. The Project Site is adjacent to other on-campus housing, and its placement encourages clustering of development as a cost reduction for providing utilities and other public facilities.				
Objective B: To develop Honolulu (Waiʻalae-Kāhala to Hālawa), ʻAiea and Pearl City as the Island's primary urban center.				X
Policies				
(1)	Stimulate development in the primary urban center by means of the City and County's capital improvement program and State and Federal grant and loan programs.			X
(2)	Provide for the expanded development of low-rise multi-unit housing.			X
(3)	Encourage the establishment of mixed-use districts with appropriate design and development controls to insure an attractive living environment and compatibility with surrounding land uses.			X
(4)	Provide downtown Honolulu and other major business centers with a well-balanced mixture of uses.			X
(5)	Encourage the development of attractive residential communities in downtown and other business centers.			X
(6)	Maintain and improve downtown as the financial and office center of the Island and as a major retail center.			X
(7)	Provide for the continued viability of the Hawaiʻi Capital District as a center of government activities and as an attractive park-like setting in the heart of the City			X

(8) Foster the development of Honolulu's waterfront as the State's major port and maritime center, as a people-oriented mixed-use area and as a major recreation area.			X
(9) Facilitate the redevelopment of Kakaʻako as a major residential, as well as commercial and light industrial area.			X
Objective C: To develop a secondary urban center in ʻEwa with its nucleus in the Kapolei area.			X
Policies			
(1) Allocate funds from the City's capital-improvement program for public projects that are needed to facilitate development of the secondary urban center at Kapolei.			X
(2) Encourage the development of a major residential, commercial and employment center within the secondary urban center at Kapolei.			X
(3) Encourage the continuing development of Barbers Point as a major industrial center.			X
(4) Coordinate plans for the development of the secondary urban center at Kapolei with the State and Federal governments and with the sugar industry.			X
(5) Cooperate with the State and Federal governments in the development of a deep-water harbor at Barbers Point.			X
(6) Encourage the development of the ʻEwa Marina Community as a major residential and recreation area emphasizing recreational boating activities through the provision of a major marina and a related maritime commercial center containing light-industrial, commercial and visitor accommodation uses.			X
Objective D: To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live.			X
Policies			
(1) Develop and maintain urban-fringe areas as predominantly residential areas characterized by generally low rise, low density development which may include significant levels of retail and service commercial uses as well as satellite institutional and public uses geared to serving the needs of households			X
(2) Coordinate plans for developments within the Ewa and Central Oʻahu urban-fringe areas with the State and Federal governments and with the sugar, pineapple and other emerging agricultural industries.			X
(3) Establish a green belt in the Ewa and Central Oʻahu areas of Oʻahu in the Development Plans.			X
(4) Maintain rural areas as areas which are intended to provide environments supportive of lifestyle choices which are dependent on the availability of land suitable for small to moderate size agricultural pursuits, a relatively open and scenic setting and/or a small town, country atmosphere consisting of communities which are small in size, very low density and low rise in character and may contain a mixture of uses.			X

Objective E: To create and maintain attractive, meaningful and stimulating environments throughout Oʻahu.			X
Policies			
(1) Prepare and maintain a comprehensive urban-design plan for the Island of Oʻahu.			X
(2) Integrate the City and County's urban- design plan into all levels of physical planning and developmental controls.			X
(3) Encourage distinctive community identities for both new and existing districts and neighborhoods.			X
(4) Require the consideration of urban-design principles in all development projects.	X		
(5) Require new developments in stable, established communities and rural areas to be compatible with the existing communities and areas.			X
(6) Provide special design standards and controls that will allow more compact development and intensive use of lands in the primary urban center.	X		
(7) Promote public and private programs to beautify the urban and rural environments.	X		
(8) Preserve and maintain beneficial open space in urbanized areas.	X		
(9) Design public structures to meet high aesthetic and functional standards and to complement the physical character of the communities they will serve.			X
(10) Establish a review process to evaluate the design of major development projects.			X
Discussion: The Proposed Action is a P3 partnership between the Developer and UHM that is intended to provide compact development and more intense land use on the UHM campus, which is within the Primary Urban Center. The design elements of the space will reflect the traditions, history and spiritual significance of Mānoa Valley and Hawaiian culture. It will incorporate shaded common areas that visually connect pedestrians and residents to the Mānoa Stream and green corridors between the Upper Campus and Lower Campus.			
Objective F: To promote and enhance the social and physical character of Oʻahu's older towns and neighborhoods.			X
Policies			
(1) Encourage new construction to complement the ethnic qualities of the older communities of Oʻahu.			X
(2) Encourage, wherever desirable, the rehabilitation of existing substandard structures.			X
(3) Provide and maintain roads, public facilities and utilities without damaging the character of older communities.			X
(4) Seek the satisfactory relocation of residents before permitting their displacement by new development, redevelopment or neighborhood rehabilitation.			X
VIII. Public Safety			
Objective A: To prevent and control crime and maintain public order.	X		

Policies				
(1)	Provide a safe environment for residents and visitors on Oʻahu.	X		
(2)	Provide adequate criminal justice facilities and staffing for City and County law- enforcement agencies.			X
(3)	Emphasize improvements to police and prosecution operations which will result in a higher proportion of wrongdoers who are arrested, convicted and punished for their crimes.			X
(4)	Keep the public informed of the nature and extent of criminal activity on Oʻahu.			X
(5)	Establish and maintain programs to encourage public cooperation in the prevention and solution of crimes.			X
(6)	Seek the help of State and Federal law- enforcement agencies to curtail the activities of organized crime syndicates on Oʻahu			X
(7)	Conduct periodic reviews of criminal laws to ensure their relevance to the community's needs and values.			X
(8)	Cooperate with other law-enforcement agencies to develop new methods of fighting crime.			X
(9)	Encourage the improvement of rehabilitation programs and facilities for criminals and juvenile offenders.			X
Discussion: The HPD was contacted as part of the EA pre-consultation process. Their comments were included in the EA to ensure the Project Site is a safe environment for UHM students, residents and visitors.				
Objective B: To protect the people of Oʻahu and their property against natural disasters and other emergencies, traffic and fire hazards and unsafe conditions.				X
Policies				
(1)	Keep up-to-date and enforce all City and County safety regulations.	X		
(2)	Require all developments in areas subject to floods and tsunamis to be located and constructed in a manner that will not create any health or safety hazard.			X
(3)	Participate with State and Federal agencies in the funding and construction of flood- control projects.			X
(4)	Cooperate with State and Federal agencies to provide tsunami warning and protection for Oʻahu.			X
(5)	Cooperate with State and Federal agencies to provide protection from war, civil disruptions and other major disturbances.			X
(6)	Reduce hazardous traffic conditions.			X
(7)	Provide adequate fire protection and effective fire prevention programs.	X		
(8)	Provide adequate search and rescue and disaster response services.			X
(9)	Design safe and secure public buildings.			X
(10)	Provide adequate staff to supervise activities at public facilities.			X
(11)	Develop civil defense plans and programs to protect and promote public health, safety and welfare of the people.			X

(12) Provide educational materials on civil defense preparedness, fire protection, traffic hazards and other unsafe conditions.			X
Discussion: The HFD was contacted as part of the EA pre-consultation process. Their comments were included in the EA to ensure the Project Site contains adequate fire protection on-site. All applicable safety regulations will be included in the design process of the Proposed Action.			
IX. Health and Education			
Objective A: To protect the health of the people of Oʻahu.			X
Policies			
(1) Encourage the provision of health-care facilities that are accessible to both employment and residential centers.			X
(2) Encourage prompt and adequate ambulance and first-aid services in all areas of Oʻahu.			X
(3) Coordinate City and County health codes and other regulations with State and Federal health codes to facilitate the enforcement of air-, water- and noise-pollution controls.			X
Objective B: To provide a wide range of educational opportunities for the people of Oʻahu.	X		
Policies			
(1) Support education programs that encourage the development of employable skills.			X
(2) Encourage the provision of informal educational programs for people of all age groups.			X
(3) Encourage the after-hours use of school buildings, grounds and facilities.			X
(4) Encourage the construction of school facilities that are designed for flexibility and high levels of use.			X
(5) Facilitate the appropriate location of learning institutions from the preschool through the university levels.	X		
Discussion: The Proposed Action is a mixed-use development and includes a new child-care facility to replace an existing one that services approximately one hundred (100) children of UHM students and employees between the ages of two and five years old. The Project Site is appropriately placed to continue serving the childcare and development needs of UHM students and employees.			
Objective C: To make Honolulu the center of higher education in the Pacific.			X
Policies			
(1) Encourage continuing improvement in the quality of higher education in Hawaiʻi.			X
(2) Encourage the development of diverse opportunities in higher education.			X
(3) Encourage research institutions to establish branches on Oʻahu.			X
X. Culture and Recreation			
Objective A: To foster the multiethnic culture of Hawaiʻi.	X		
Policies			
(1) Encourage the preservation and enhancement of Hawaiʻi's diverse cultures.			X

(2) Encourage greater public awareness, understanding and appreciation of cultural heritage and contributions to Hawaiʻi made by the City's various ethnic groups.	X		
(3) Encourage opportunities for better interaction among people with different ethnic, social and cultural backgrounds.			X
(4) Encourage the protection of the ethnic identities of the older communities of Oʻahu .			X
Discussion: The design elements of the space will reflect the traditions, history and spiritual significance of Mānoa Valley and Hawaiian culture. Further, the Project Site's proximity to Ka Papa Loʻi o Kānewai could encourage student and visitor engagement with this cultural resource.			
Objective B: To protect Oʻahu's cultural, historic, architectural and archaeological resources.	X		
Policies			
(1) Encourage the restoration and preservation of early Hawaiian structures, artifacts and landmarks.			X
(2) Identify, and to the extent possible, preserve and restore buildings, sites and areas of social, cultural, historic, architectural and archaeological significance.	X		
(3) Cooperate with the State and Federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural and archaeological resources.	X		
(4) Promote the interpretive and educational use of cultural, historic, architectural and archaeological sites, buildings and artifacts.			X
(5) Seek public and private fund and public participation and support, to protect social, cultural, historic, architectural and archaeological resources.			X
(6) Provide incentives for the restoration, preservation and maintenance of social, cultural, historic, architectural and archaeological resources.			X
Discussion: No significant impacts to historic resources are anticipated for the Proposed Action because no historic properties occur on-site. However, because of the Project Site's proximity to known cultural resources, an ALRFI report was prepared in connection with the EA. Recommendations from the report will be used to avoid impacts to any potential resources that may be found on-site during construction. As such, the Proposed Action, through the EA process, is consistent with the Historic Preservation State Functional Plan.			
Objective C: To foster the visual and performing arts.			X
Policies			
(1) Encourage and support programs and activities for the visual and performing arts.			X
(2) Encourage creative expression and access to the arts by all segments of the population.			X
(3) Provide permanent art in appropriate City public buildings and places.			X
Objective D: To provide a wide range of recreational facilities and services that are readily available to all residents of Oʻahu.			X
Policies			

(1)	Develop and maintain community-based parks to meet the needs of the different communities on Oʻahu.			X
(2)	Develop and maintain a system of regional parks and specialized recreation facilities.			X
(3)	Develop and maintain urban parks, squares and beautification areas in high density urban places.			X
(4)	Encourage public and private botanic and zoological parks on Oʻahu to foster an awareness and appreciation of the natural environment.			X
(5)	Encourage the State to develop and maintain a system of natural resource-based parks, such as beach, shoreline and mountain parks.			X
(6)	Provide convenient access to all beaches and inland recreation areas.			X
(7)	Provide for recreation programs which serve a broad spectrum of the population.			X
(8)	Encourage ocean and water-oriented recreation activities that do not adversely impact on the natural environment.			X
(9)	Require all new developments to provide their residents with adequate recreation space.			X
(10)	Encourage the private provision of recreation and leisure-time facilities and services.			X
(11)	Encourage the after-hours, weekend and summertime use of public-school facilities for recreation.			X
(12)	Provide for safe and secure use of public parks, beaches and recreation facilities.			X
(13)	Encourage the safe use of Oʻahu 's ocean environments.			X
(14)	Encourage the State and Federal governments to transfer excess and underutilized land to the City and County for public recreation use.			X
XI. Government Operations and Fiscal Management				
Objective A: To promote increased efficiency, effectiveness and responsiveness in the provision of government services by the City and County of Honolulu.				X
Policies				
(1)	Maintain City and County government services at the level necessary to be effective.			X
(2)	Promote consolidation of State and City and County functions whenever more efficient and effective delivery of government programs and services can be achieved.			X
(3)	Ensure that government attitudes, actions and services are sensitive to community needs and concerns.			X
(4)	Prepare, maintain and publicize policies and plans which are adequate to guide and coordinate City programs and regulatory responsibilities.			X
Objective B: To ensure fiscal integrity, responsibility and efficiency by the City and County government in carrying out its responsibilities.				X
Policies				

(1) Provide for a balanced budget.			X
(2) Allocate fiscal resources of the City and County to efficiently implement the policies of the General Plan and Development Plans.			X
Discussion: The Proposed Action will have no effect on the Government Operations and Fiscal Management objectives; therefore, these policies are not applicable.			

5.2.2 Primary Urban Center Development Plan

The Project Site is located within the PUC DP area, which extends from downtown Honolulu to Pearl City in the west to Waiʻalae-Kāhala in the east. The PUC DP is home to almost half of Oʻahu's population and three quarters of all jobs. The PUC DP (June 2004) provides a vision for the PUC in the areas of land use, transportation, infrastructure and public facilities. It also provides policies and guidelines for achieving that vision. Table 5-6 provides a summary of the Proposed Action's consistency with the guidelines, policies and principles established in the PUC DP (CCH DPP 2004).

Table 5-6: Consistency with Primary Urban Center Development Plan

PRIMARY URBAN CENTER DEVELOPMENT PLAN GUIDELINES, POLICIES AND PRINCIPLES	Consistent?		
	Yes	No	N/A
CHAPTER 3: LAND USE AND TRANSPORTATION			
Protecting and Enhancing Natural, Cultural and Scenic Resources			
Preserve historic and cultural sites: Special emphasis should be placed on-sites and associated settings that are unique, of special significance or are in good condition.	X		
Preserve and protect natural resource and constraint areas: Establish an urban community boundary to define urban development and protect areas outside the boundary for their open space, scenic and resource values.	X		
Preserve panoramic views of natural landmarks and the urban skyline: This includes important vistas and focused views of significant natural and urban features and skyline profiles that make up or frame the PUC from publicly accessible places.	X		
Develop stream greenbelts: Keep or create mauka-makai connections and views up and down important streams and create public walkways where possible and appropriate.			X
Provide parks and active recreation areas: Create or strengthen parks, plazas and other conveniences throughout the PUC, especially in more populated areas as a balance to the built environment, for recreation, social interaction and leisure interludes.			X
Discussion: The Project Site is located within Urban State Land Use district on the UHM campus, supporting the PUC DP goal of developing within existing urban boundaries. The Proposed Action			

PRIMARY URBAN CENTER DEVELOPMENT PLAN GUIDELINES, POLICIES AND PRINCIPLES	Consistent?		
	Yes	No	N/A
would create a centralized "live-work-play" development within UHM's park-like environment and encourage social interaction and connectivity across the campus. The Proposed Action is similar in height and design to neighboring buildings and would not inhibit views of the urban skyline. Because of the Project Site's proximity to known cultural resources an ALRFI report was prepared in connection with the EA. Recommendations from the report will be used to avoid impacts to any potential resources that may be found on-site during construction. As such, the Proposed Action, through the EA process, is consistent with the Historic Preservation State Functional Plan. Further, the Project Site's proximity to Ka Papa Loʻi o Kānewai could encourage student and visitor engagement. Natural resources occurring within the Project Site will be protected from any impacts by the proposed mitigation measures.			
Cultivating Livable Neighborhoods			
Develop a system for collaborative neighborhood planning: Refine and further develop a stakeholder-based process for continuing community-based neighborhood planning for areas requiring this attention.	X		
Cultivate existing and new "neighborhood centers": Develop neighborhood centers as the principal places for people in a neighborhood to gather, shop, dine or play and to provide a source of community identity.	X		
Promote mixed land uses: Encourage compatible mixtures of land uses for intown PUC neighborhoods and districts to support a variety of urban lifestyle choices and to create vibrant and convenient neighborhoods.	X		
Create parks that draw people and activity: Develop parks that invite people and promote positive social interaction and activity.			X
Make streets "pedestrian-friendly": Create inviting and attractive streetside environments that support and enhance convenient and safe pedestrian use.			X
Discussion: The Proposed Action aims to create a collaborative environment by creating a gathering space for students and faculty to shop, dine, interact and live. The design elements of the space will reflect the traditions, history and spiritual significance of Mānoa Valley and Hawaiian culture by incorporating shaded common areas that visually connect pedestrians and residents to the Mānoa Stream and green corridors between the Upper Campus and Lower Campus. To ensure collaborative neighborhood planning, the Mānoa (No. 7), Diamond Head/Kapahulu/St. Louis Heights (No. 5) and McCully/Mōʻiliʻili (No. 8) Neighborhood Boards have been contacted as part of the pre-consultation process.			
In-Town Housing Choices			
Promote people-scaled apartment and townhouse dwellings in low- or midrise buildings oriented to the street: This policy encourages residential buildings that are modest in height and have ground-floor shopping and dining opportunities to create pedestrian-oriented neighborhoods that satisfy a range of lifestyle needs conveniently.			X

PRIMARY URBAN CENTER DEVELOPMENT PLAN GUIDELINES, POLICIES AND PRINCIPLES	Consistent?		
	Yes	No	N/A
Improve the feasibility of redeveloping small lots: Encourage housing variety and affordability by removing barriers for small-scale townhouse and low-rise apartment development on smaller apartment-zoned lots.			X
Reduce costs for apartment homes: Promote affordable housing choices consistent with creating livable communities by reducing certain construction and development-related costs.			X
Provide adequate schools and parks for in-town neighborhoods: Conveniently located schools and parks that can be reached safely are needed to meet the needs of young, active families.			X
Expand the capacity of infrastructure, including water supply, sewers and storm drains: This policy calls for government action and leadership in creating adequate infrastructure to meet present and future demands in order to support the strengthening or creation of livable in-town communities.			X
Preserve and expand the current inventory of affordable rental housing units: The City should assure that the current inventory of affordable rental units, whether owned by the City or not, is preserved and retained as affordable and that the inventory of affordable rental units is expanded as needed by the community.			X
Support the retention, rehabilitation and improvement of older, low-rent apartment buildings: Maintain, rehabilitate and improve older apartment buildings to retain existing housing stock as viable in-town housing choices.			X
Provide for special needs housing: Allow housing for people with special needs and promote their integration into the larger PUC community.			X
Provide incentives and cost savings for affordable housing: This policy promotes exemptions from regulations, on a case-by-case basis, to make "affordable" housing available to those needing it.			X
Provide for high-density housing options in mixed-use developments around transit stations. This type of "transit-oriented development" facilitates transit use and allows for increased densities without generating increased vehicular congestion.	X		
Discussion: The Proposed Action is intended to provide affordable, family-oriented housing to UHM graduate students and junior faculty. It would serve to expand the inventory of affordable housing on campus as a high-density, mixed-use, transit-oriented development. The Project Site is serviced by UHM's Rainbow Shuttle and is in the vicinity of several of "The Bus'" transit service lines, as well as a "Biki" bikeshare system and short-and-long term bike storage racks.			
The Pacific's Leading City			
Create public open space along the Pearl Harbor waterfront and strengthen the physical and visual connections between the urban center and the water: This recognizes the waterfront as a principal element in the PUC's setting and as an organizing reference point for the city and supports development of an economic and social asset for the surrounding community.			X

PRIMARY URBAN CENTER DEVELOPMENT PLAN GUIDELINES, POLICIES AND PRINCIPLES	Consistent?		
	Yes	No	N/A
Redevelop the Downtown/Iwilei waterfront: This policy proposes to increase visual and physical access to the waterfront by re-routing traffic away from Nimitz Highway and introducing commercial activities such as restaurants, shops, offices and entertainment, low to medium-rise residences and areas capable of hosting recreational activities.			X
Stimulate the development of high technology and knowledge-based industries: Attract high-technology businesses to Hawaiʻi and provide in-town locations for them. Encourage investment in infrastructure within commercial buildings that will accommodate and attract high-technology and biotechnology businesses.			X
Develop and implement a plan for a vibrant and livable Waikīkī: This plan should address resident and visitor experiences, the street environment, the design of new buildings and relationships with adjacent districts.			X
Support attractions that are of interest to both residents and visitors in the Ala Moana/Kakaʻako/Downtown corridor. Develop commercial and cultural attractions and improvements to serve residents and visitor interests.			X
Provide opportunities for the development of visitor units in the Ala Moana/Kakaʻako/Downtown corridor: Provide accommodation options for convention and business travelers conveniently located near downtown and the Hawaiʻi Convention Center.			X
Provide opportunities for the development of village inns in existing commercial centers and allow bed and breakfast establishments in residential neighborhoods: This policy encourages development of alternative visitor accommodations in contrast to the traditional resort enclaves of Waikīkī.			X
Support continuation of military uses: Support and coordinate with the military's long-range land planning activities to realize common employment, housing and recreation goals.			X
Enhance Honolulu Harbor and harbor-related uses: Reserve lands adjacent to the harbor for harbor-related uses.			X
Support industrial uses in Kalihi-Pālama industrial districts: Support existing mixed-usages in the industrial districts of Kalihi-Kai and Kapālama, as well as existing commercial uses along the Nimitz, Dillingham, King, Kalihi and Waiakamilo corridors.			X
Define the role of town centers and promote a mixture of land uses in ʻAiea-Pearl City: Strengthen the functions and latent identities of town centers in Pearl City, ʻAiea, Waimalu and Hālawa and establish the Pearlridge area as a Pearl Harbor Regional Town Center.			X
Encourage the full use of existing private and public parking garages: Encourage private parking garage owners to rent underused parking stalls within commercial buildings and large-scale residential projects.	X		

PRIMARY URBAN CENTER DEVELOPMENT PLAN GUIDELINES, POLICIES AND PRINCIPLES	Consistent?		
	Yes	No	N/A
Discussion: The Proposed Action will encourage the use of existing parking structures found on the UHM campus instead of developing long-term parking on-site.			
Develop a Balanced Transportation System			
Implement land use strategies to achieve a balanced transportation system: To achieve community livability and enable transportation choices, land use strategies that support alternative travel modes such as walking, bicycling and transit should be adopted and implemented.	X		
Improve the public transit system, including development of a rapid transit component: A convenient and efficient public transit system aids in maintaining traffic flows at an acceptable level for an attractive and successful urban setting. An effective public transit system for the PUC could be created with an east-west rapid transit route supplemented by effective links to the PUC's valley communities.		X	
Implement Transportation Demand Management (TDM) strategies: Employ management strategies that encourage alternative travel models.	X		
Review existing plans and establish priorities for roads and road improvements: Conduct a comprehensive classification of roadways to identify prospective improvements (e.g., automobile, transit, bikeways, pedestrian routes) and prioritize the implementation of such improvements.			
Implement the Honolulu Bicycle Master Plan: Institutionalize a policy that all streets designated for bicycle travel should be maintained to accommodate shared bicycle and automobile use.			X
Enhance and improve pedestrian mobility: Create pedestrian districts, route and a regional pedestrian network and address pedestrian safety concerns.	X		
Encourage the full use of existing private and public parking garages: Encourage private parking garage owners to rent underused parking stalls with commercial buildings and large-scale residential projects.	X		
Discussion: The Project Site is serviced by UHM's Rainbow Shuttle and is in the vicinity of several of TheBus's transit service lines, as well as a "Biki" bikeshare system and short-and-long term bike storage racks. The Proposed Action incorporates shaded common areas that encourage walkability by visually connecting pedestrians and residents to the Mānoa Stream and green corridors between the Upper Campus and Lower Campus. The Proposed Action would prioritize on-site parking for short-term rideshare, carshare and childcare loading zones to promote multi-modal transportation. To further support multi-modal transportation, the Proposed Action would encourage the use of existing long-term parking structures found on the UHM campus instead of developing any on-site.			
CHAPTER 4: INFRASTRUCTURE AND PUBLIC FACILITIES			
Water Allocation and System Development			
Integrate resource management of all potable and non-potable water sources, including groundwater, stream water, storm water and wastewater effluent.	X		
Adapt water conservation practices in the design of new developments and modification of existing uses, including landscaped areas.	X		

PRIMARY URBAN CENTER DEVELOPMENT PLAN GUIDELINES, POLICIES AND PRINCIPLES	Consistent?		
	Yes	No	N/A
Implement upgrades and capacity improvements to serve projected population increases.			X
Protect and maintain watersheds to ensure an adequate supply of high-quality water with sufficient infiltration recharge into groundwater aquifers.			X
Discussion: LEED standards will be used as guidelines during the Proposed Action's design process to integrate water conservation. LID practices and temporary and permanent BMPs will be used to prevent construction related runoff from exiting the work area and entering any surface or groundwater resources. These actions serve to integrate water resource management into the Project Design by protecting stream water quality and encouraging on-site groundwater recharge.			
Wastewater System			
Implement wastewater collection system improvements to provide adequate service and sound facilities to existing neighborhoods and timely increases in system capacity to areas planned to undergo improvement or change in use.			X
Implement adequate and timely upgrades/expansion of wastewater treatment facilities to meet the growth demands of the PUC.			X
Discussion: The Proposed Action is not applicable to the Wastewater System requirements of the PUC DP.			
Electrical Power			
Support retention and upgrade of the Waiau and Honolulu Power Plants as part of a strategic plan to improve the reliability of the PUC's electrical power system.			X
Promote and implement energy conservation measures and integrated resource planning.	X		
Planning and building of new or relocated transmission lines should take into consideration system and cost concerns and the impacts on the environment. Options to place utility lines underground should be considered, and priorities should be established.			X
Discussion: LEED Silver certification standards will be used as guidelines during the Proposed Action's design process to implement energy conservation measures.			
Telecommunications Facilities			
Minimize the visual impacts and potential health hazard of new facilities.			X
Discussion: The Proposed Action is not applicable to the Telecommunications Facilities requirements of the PUC DP.			
Solid Waste			
Reduce the solid waste stream by encouraging recycling and reuse.			X
Reduce dependence on landfills by encouraging alternative waste disposal technologies.			X
Discussion: The Proposed Action is not applicable to the solid waste requirements of the PUC DP.			
Stormwater Systems			
Require methods of retaining or detaining stormwater for gradual release into the ground as the preferred strategy for the management of stormwater. Where	X		

PRIMARY URBAN CENTER DEVELOPMENT PLAN GUIDELINES, POLICIES AND PRINCIPLES	Consistent?		
	Yes	No	N/A
feasible, utilize open spaces including parking lots, landscaped areas, parks and golf courses to detain or infiltrate stormwater flows to reduce their volume and runoff rates. (*City Council Resolution No. 94-296*).			
Manage stormwater flows through best management practices to minimize stormwater runoff and peak discharge rates.	X		
Preserve stream and estuarine habitats.	X		
Discussion: LID practices and temporary and permanent BMPs will be used to prevent construction related stormwater runoff from exiting the work area and entering any surface or groundwater resources. This will serve to protect stream water quality and encourage on-site groundwater recharge. The specific type and location of these LID practices and BMPs will be determined during the Proposed Action's design process.			
School and Library Facilities			
Support the development of a high-quality educational system of schools and post-secondary institutions that increase the attractiveness of the PUC as a place to live and work.			X
Work with the DOE to develop innovative shared-use facilities, particularly on City-owned school properties.			X
Discussion: The Proposed Action is not applicable to the School and Library Facilities requirements of the PUC DP.			
Civic and Public Safety Facilities			
Provide adequate staffing and facilities to ensure effective and efficient delivery of basic governmental service and protection of public safety.			X
Discussion: The Proposed Action is not applicable to the Civic and Public Safety Facilities requirements of the PUC DP.			

5.2.3 Land Use Ordinance

The LUO establishes zoning regulations to regulate and review land uses and development standards in accordance with the City's land use policies, such as the Oʻahu General Plan and PUC DP. The Project Site is located within an R-5 Residential zone. However, a minor modification to UHM's existing PRU would allow the Proposed Action to be regulated in accordance with the development standards set forth by the UHM LRDP. Approval of the PRU would supersede the LUO zoning regulations.

5.2.4 Plan Review Use

The purpose of City's PRU process is to establish a review and approval mechanism for land uses that provide essential community services that are permanent or institutional in nature but may also create major adverse impacts on the surrounding land uses. The intent of the

PRU is that these land uses be master planned to minimize adverse impacts or potentially incompatible land uses permitted within the zoning district. One of the general provisions of the PRU is that a master plan, spanning at least five years, be approved by City Council resolution. The master plan may consist of both existing and future development, but no uses or structures other than those included in the approved master plan are permitted on subject lots.

As part of the 2007 LRDP update, a new PRU was prepared and approved by the City on March 17, 2010 (2009/PRU-3) (Resolution 09-341, CD1, FD1) (UHM 2009). Since the Project Site was formerly under control by the federal government, it was not included in the PRU area. In 2018, approval for a minor modification to the existing PRU was granted by DPP to incorporate the property and its existing facilities into the PRU area. During plan preparation for the Proposed Action, DPP was consulted and determined the Proposed Action would require a minor modification to the existing PRU. An application for a minor modification to the PRU will be submitted to DPP following submittal and review of the DEA.

5.3 PERMITS AND APPROVALS

The Proposed Action will be subject to the following list of permits and approvals:

Table 5-7: Permits and Approvals

State	
Department of Health	National Pollutant Discharge Elimination System
Department of Land and Natural Resources – Historic Preservation Division	HRS §6E Consultation, State Historic Preservation Law
City and County	
Department of Planning and Permitting	Plan Review Use Minor Modification
	Building Permit
	Grading Permit

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6 ALTERNATIVES CONSIDERED

As a requirement of HAR §11-200.1-18 (2019), an environmental assessment must identify and consider alternatives to achieve the Purpose and Need (PN) of the Proposed Action. Alternatives eliminated from consideration are those that do not meet the PN. They are described in this section and include the no action alternative, alternative sites and alternative designs.

6.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Project Site's existing conditions would remain as the Proposed Action would not take place. Within this alternative, UHM would continue to deal with limited affordable on-campus housing into the future. The existing buildings on the Project Site are not usable (functionally obsolete, hazardous materials); the exterior areas would continue to function as temporary parking and exterior storage. The No Action Alternative would have no short-or long-term impacts on the existing resources found on the Project Site.

However, this alternative fails to meet the PN of the Proposed Action, which is to provide affordable, family-oriented housing to UHM graduate students and junior faculty. Further, it fails to meet the objectives of the 2007 LRDP. Because of its failure to meet the PN and the objectives of the 2007 LRDP, it is not a feasible alternative and was dismissed.

6.2 ALTERNATIVE PROJECT SITE

Under the current PRU, there are three proposed rehabilitation/replacement housing projects, the Hale Noelani Replacement Dormitory Project, the Johnson Hall Replacement Dormitory Project and the Faculty Housing-Waʻahila Ridge/Mauka Campus Project, that could be expanded to provide additional housing on campus. However, funding, logistics and other constraints make replacement of these existing facilities challenging. As a result, at this time, the demolition and replacement proposed for the three projects is no longer being pursued by UHM. Instead, UHM has decided to pursue development of housing financed through a public-private partnership on readily available land in close proximity to other student and faculty housing facilities on campus. These alternative sites therefore do not meet the Proposed Action's PN and were dismissed.

6.3 ALTERNATIVE PROJECT DESIGN

The Developer considered several design schemes with a focus on building height, setback and configuration. The preferred design scheme meets the PN of the Proposed Action as well as the major themes of the 2017 LRDP. Further, it incorporates a childcare facility on-site

creating a family-oriented environment. The following design schemes were considered and dismissed:

- One design alternative proposed was constructing two fifteen-story buildings on the Project Site. This alternative was dismissed because of the potential visual impacts and mass it would create along Dole Street.
- A second design alternative proposed was constructing two buildings that were physically connected creating a solid wall between them. This alternative was dismissed because it would reduce the amount of available housing units, create potential visual impacts and remove the outdoor gathering space.
- A third design alternative proposed was to construct the first building at a twenty-foot setback from Dole Street. This design alternative was dismissed because it was too oppressive when observed from Dole Street, creating visual impacts. Further, it did not meet the character of the surrounding neighborhood.
- A fourth design alternative proposed was constructing only one building. This alternative as dismissed because it would not create enough available housing units to meet the PN.

6.4 EXCLUDING THE CHILDCARE FACILITY

One design alternative considered excluding the on-site childcare facility. This alternative was dismissed because the childcare facility was a program preference in UHM's RFP and was used as a selection criterion in awarding the project. Additionally, excluding the facility would not meet the PN of the Proposed Action, which is to develop family-friendly housing on campus.

7 FINDINGS AND DETERMINATIONS

7.1 PRELIMINARY DETERMINATION

A Finding of No Significant Impact (FONSI) determination is recommended for the Proposed Action. No short- or long-term significant impacts have been anticipated, and therefore, an Environmental Impact Statement (EIS) would not be required.

7.2 FINDINGS AND REASONS SUPPORTING DETERMINATION

The following findings and reasons indicate that the Proposed Action will have no significant adverse impacts on the environment based on the thirteen significance criteria, pursuant to HAR §11-200.1-13:

1) Irrevocably commit a natural, cultural, or historic resource;

The Proposed Action would not irrevocably commit any natural, cultural or historic resources at the Project Site. The project location and design have been selected to remain consistent with the existing conditions and surrounding environment. BMPs and mitigation measures would be implemented to avoid or minimize potential impacts that would result in significant losses or destruction to natural or cultural resources. Contractors will adhere to specific protocol for monitoring and preserving significant habitat of Federal- or State-listed species should they be found at the Project Site during construction. Subsurface testing would occur during demolition of the existing buildings to monitor for potential subsurface archaeological deposits in order to minimize any potential impact on cultural resources. SHPD will be consulted prior to initiating subsurface testing, and if SHPD determines testing must be done prior to demolition the Developer will comply.

2) Curtail the range of beneficial uses of the environment;

The Proposed Action would remain consistent with UHM's urban-residential uses surrounding the Project Site and would not curtail future beneficial uses of the environment. The project location and design have been selected to further the objectives set forth by UHM's LRDP, PRU and *Framework for the Future*.

3) Conflict with the State's environmental policies or long-term environmental goals established by law;

The Proposed Action would not conflict with the State's environmental policies and objectives or long-term environmental goals, as discussed in Section 5, *Relationship to Land Use Policies, Plans and Controls*. BMPs and mitigation measures would be implemented to avoid or minimize potential impacts associated with construction or operation activities at the Project Site.

4) Have a substantial adverse effect on the economic welfare, social welfare or cultural practices of the community and State;

The Proposed Action would provide long-term benefits to UHM that are consistent with the LRDP, PRU and *Framework for the Future*. The proposed housing facility is intended to meet a growing demand for affordable housing at UHM and create a "live-work-play" environment that fosters inclusivity and connectivity for campus community members, therefore creating a long-term positive effect on the economic and social welfare of the community and State. The Project Site is located in close proximity to the majority of campus amenities, including the existing athletic fields, dining centers, student and faculty housing complexes and public county community park, making it an ideal location for a family-oriented, mixed-use housing facility on campus. Construction and operation activities would also create new employment opportunities for the community and tax revenue for the State.

The Proposed Action would not impact traditional and cultural practices, as according to the archaeological literature review and field inspection report there are no known sacred sites or cultural objects or resources known to occur on-site (SCS 2020). BMPs and mitigation measures would be implemented to protect the existing conditions of Mānoa Stream and avoid impacts to Ka Papa Loʻi O Kānewai downstream. The project design aims to incorporate cultural and environmental motifs to honor the traditional, history and spiritual significance of Mānoa Valley and Hawaiian culture.

5) Have a substantial adverse effect on public health;

The Proposed Action would not contribute any adverse effects on public health. The project location and design aim to support health and wellness for residents on the UHM campus by incorporating natural landscaping, pedestrian corridors and outdoor gathering spaces. Multi-modal transportation would be encouraged to reduce traffic impacts on the surrounding community and environment. Short-term impacts to noise and air quality would be minimized through construction phasing and BMPs, and to maintain compliance with existing City and State policies and regulations.

6) Involve adverse secondary impacts, such as population changes or effects on public facilities;

The Proposed Action would not cause substantial adverse secondary impacts to the social environment or public resources. The multi-family, mixed-use affordable housing facility would create a "live-work-play" environment for graduate students and faculty to reside on campus. The use of public services and infrastructure would be consistent with existing UHM population demand and remain within the limits of the current LRDP and PRU; a portion of the undeveloped housing footprint of UHM's existing PRU will be transferred to this site.

7) Involve a substantial degradation of environmental quality;

The Proposed Action would not degrade environmental quality at the Project Site or surrounding area. The project location and design was selected to remain consistent with existing land use in the surrounding area.

8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;

The Proposed Action would not have a substantial adverse effect upon the environment and does not involve future commitments beyond the current project scope.

9) Have a substantial adverse effect on a rare, threatened or endangered species, or its habitat;

The Proposed Action would not cause significant impact to rare, threatened or endangered species or habitats on the Project Site. Suitable nesting habitat identified for species protected under the MBTA was limited to the State-listed white tern. Although suitable roosting and foraging habitat was identified for two (2) Federal- and State-listed species, the Hawaiian Hoary Bat and Hawaiian Duck, neither species were observed on-site during the project survey. BMPs in monitoring and mitigation would be implemented during construction to avoid and protect potential impacts to these species and suitable habitats.

10) Have a substantial adverse effect on air or water quality or ambient noise levels;

The Proposed Action would not create adverse effects on air, water or noise conditions at the Project Site. BMPs such as project phasing, erosion control and dust mitigation would be implemented to avoid or minimize short-term impacts of construction activities. Long-term impacts to ambient noise would be consistent with the existing uses and activities in the surrounding area. Building emissions would be negligible and quickly dissipate by northeast trade winds crossing through the Project Site. Potential impacts from construction and operation activities would remain in compliance with all applicable City and State regulations.

11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

The Proposed Action does not anticipate substantial adverse effects or risk of damage from natural hazards at the Project Site. Although the Mānoa Stream runs along the eastern portion of the parcel, no development or operations would occur within the

Flood Zone AEF on-site. Built-in flood protections would be used to safeguard the built areas from potential flood damage. The Project Site is located outside of the tsunami evacuation zone and SLR-XA. The housing facility would be constructed to local building codes and enhanced wind design criteria to minimize the potential impacts of natural hazards, such as earthquakes and hurricanes.

12) Have a substantial adverse effect on scenic vistas and view planes, during day or night, identified in county or state plans or studies; or,

The Proposed Action would not significantly impact surrounding scenic resources, such as Waʻahila Ridge and Mānoa Stream or the mauka-makai view planes identified in the City's PUC DP. The project location and design is consistent with existing urban-residential uses in the surrounding area. Both structures of the housing facility will adhere to development guidelines of the City, State and UHM.

13) Requires substantial energy consumption or emit substantial greenhouse gases.

The Proposed Action would incorporate energy saving standards consistent with LEED Silver certification to minimize long-term energy consumption.

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APPENDIX A

Graduate Student and Faculty Housing Data

Graduate Student and Faculty Housing Data

UNIVERSITY OF HAWAI'I AT MĀNOA (UHM) HEADCOUNT SUMMARY

- 2,100+ Faculty
- 1,200+ Graduate Assistants
- 12,800+ Undergraduate Students
- 4,700+ Graduate Students

UHM FACULTY HOUSING SUMMARY

- To be eligible for University faculty housing, the following criteria must be met:
  - Person is appointed to an Oʻahu campus
  - Person's workplace is on Oʻahu
  - Person has no real property ownership on Oʻahu
- Eligible persons are subject to the following priority schedule and lease terms:

Priority	Rank	Status	Lease Term
1	3	Tenure Track	1 year; may be annually renewed up to a max of 3 years
2	2, 4, 5	Tenure Track	1 year; may be annually renewed up to a max of 3 years
3	2, 3, 4, 5	Tenured	1 year; may be annually renewed up to a max of 3 years
4	N/A	APT	1 year non-renewable
5	N/A	All Others	1 year non-renewable

  - Vacancies are assigned first to applicants with initial appointment dates of three years or less; and then to applicants with the lowest salaries, within each respective priority rank
- UHM faculty housing is comprised of 3 apartments/condominium complexes totaling over 200,000 gsf and containing 237 units:

Residence Type	Number of Units	Monthly Rental Range
Studio	13 (5%)	$700-$810
1-Bedroom	23 (10%)	$869-$1,009
2-Bedroom	160 (68%)	$1,072-$1,528
3-Bedroom	41 (17%)	$1,370-$2,379
Total	*237*	

Source: University of Hawaiʻi

- Occupant Summary at Move-In:

	Unit Type				
Household Type	**1 - Bedroom**	**2 - Bedroom**	**3 - Bedroom**	**Studio**	**Grand Total**
Couple	3	66	3	2	74
Family	1	57	37		95
Single	19	31		11	61
Single Parent		6			6
Total	*23*	*160*	*40*	*13*	*236*

- From 2013-2017, occupancy has remained above 98%
- In 2008, a Faculty Housing Survey (N=997) found that 52% of faculty surveyed would be interested in moving into UHM faculty housing
    - Of those faculty, 61% ranked below-market rent as one of the top two reasons for their interest; 51% ranked saving for a home with the subsidized rent savings as one of the top two reasons for their interest.

UHM STUDENT HOUSING SUMMARY

- Approximately 20% of all students (~3,700 students) live on campus
- Of those living on campus, 98% are undergraduates; 2% are graduate students
- 12 residence halls offer 3,870 beds in almost 1 million gross square feet of living space

Residence Type	Number of Units by Occupancy		
	Single	**Double**	**Triple**
1-Bedroom	123	833	11
1-Bedroom Suite		112	
1 Bedroom Apartment		79	
2-Bedroom Suite		102	
2-Bedroom Apartment		257	
3-Bedroom Suite		106	
Total	*123*	*1,489*	*11*

    - Currently, families reside in 3 2-bedroom apartments
- Average monthly rent by resident type:

	Single Occupancy	**Double Occupancy**	**Triple Occupancy**	**Quadruple Occupancy**	**Family Housing Double**
Average Monthly Rent	$1,460	$1,191	$611	$999	$2,317

APPENDIX B

Flora and Fauna Survey

UH Manoa Multi-Family Housing Project Flora and Fauna Survey Report

JULY 2020

PREPARED FOR

Belt Collins Hawaii LLC

PREPARED BY

SWCA Environmental Consultants

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UH MANOA MULTI-FAMILY HOUSING PROJECT FLORA AND FAUNA SURVEY REPORT

Prepared for

Belt Collins Hawaii LLC
North King Street, Suite 200
Honolulu, Hi, 96819
Attn: Joanne Hiramatsu

Prepared by

Francis Quitazol, James Breeden, and Danielle Frohlich

SWCA Environmental Consultants
1200 Ala Moana Blvd. #380
Honolulu, Hawai‘i 96814
(808) 892-3842
www.swca.com

SWCA Project No. 61920

July 2020

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SUMMARY

Belt Collins Hawai‘i requested that SWCA Environmental Consultants (SWCA) conduct a flora and fauna survey at the proposed Multi-Family Housing project site located on the University of Hawaii at Manoa campus on the island of O‘ahu, Hawai‘i. This report summarizes the results of the biological resources survey.

SWCA Botanist Danielle Frohlich and Wildlife Biologist James Breeden conducted a flora and fauna survey on June 26, 2020, from 8:00 a.m. to 12:00 p.m., when wildlife species are most likely to be active. All vascular plant species and their relative abundance, as well as vegetation types, were recorded.

No federally or state-listed endangered plant species were observed in or around the survey area. In all, 46 plant species were recorded in the survey area during the time of the survey. Of these, only one species—hala *(Pandanus tectorius)*—is possibly native to the Hawaiian Islands, and three species— coconut *(Cocos nucifera),* kukui *(Aleurites moluccana),* and ti *(Cordyline fruticosa)*—were introduced by Polynesian people prior to European contact (Wagner et al. 1999). The vegetation types and plant species identified during the survey are not considered unique. Therefore, the proposed project is not expected to have a significant, adverse effect on terrestrial vegetation.

No federally and one state listed species—the threatened White tern (*Gygis alba*)—were observed in and around the survey area. Although not observed, one federally and state endangered mammal, Hawaiian hoary bat (*Lasiurus cinereus semotus*), and two additional federally and state endangered bird, Hawaiian stilt (*Himantopus mexicanus knudseni*) and Hawaiian duck (*Anas wyvilliana*), could occur in the survey area based on the available habitat in the survey area. All other federally or state-listed species with potential to occur on the Island of O‘ahu are not likely to occur in the survey area because it is either outside the range of the species or because appropriate habitat does not occur. Therefore, the proposed project is not expected to have a significant, adverse effect on terrestrial wildlife.

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Appendices

Appendix A. Checklist of Plants Observed at University of Hawai‘i Mānoa Multi-Family Housing Project Survey Area on June 26, 2020.

Figures

Figure 1. Survey area 2
Figure 2. Image of Streamside Ruderal Vegetation type showing coconut *(Cocos nucifera)*, parasol tree *(Macaranga tanarius)*, and Chinese banyan *(Ficus microcarpa)* in the overstory, Arabian coffee *(Coffea arabica)* in the midstory, and coral berry *(Rivina humilis)* and Guinea grass *(Urochloa maxima)* in the herbaceous layer. 4
Figure 3. Photograph of Landscaped Vegetation type, showing oleander *(Nerium oleander)*, Cape plumbago *(Plumbago auriculata),* monkeypod *(Samanea saman),* and Bermuda grass *(Cynodon dactylon)*. 5

Tables

Table 1. Birds observed by SWCA in and near the survey area 6

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INTRODUCTION

Belt Collins Hawai‘i requested that SWCA Environmental Consultants (SWCA) conduct a flora and fauna survey at the proposed Multi-Family Housing project site located on the University of Hawaii at Manoa campus on the island of O‘ahu, Hawai‘i (Figure. 1). This report summarizes the results of the biological resources survey conducted on June 26, 2020.

METHODS

SWCA conducted a review of available scientific and technical literature regarding natural resources in and near the survey area. This literature review encompassed a thorough search of scientific journals, technical journals, and reports, environmental assessments, environmental impact statements, relevant government documents, the U.S. Fish and Wildlife Service (USFWS) online database, and unpublished data that provide insight into the area’s natural history and ecology. SWCA also reviewed available geospatial data, aerial photographs, and topographic maps of the survey area.

Flora Surveys

SWCA conducted a pedestrian flora (botanical) survey on June 26, 2020, to document all vascular plant species and vegetation types. Areas more likely to support native plants (e.g., rocky outcrops and shady areas) were more intensively examined.

Plants recorded during the survey are indicative of the season (“rainy” versus “dry”) and the environmental conditions at the time of the survey. It is likely that additional surveys conducted at a different time of the year would result in minor variations in the species and abundance of plants observed.

Fauna Surveys

SWCA conducted the pedestrian fauna survey on June 26, 2020, during the morning hours (8:00 a.m. to 12:00 p.m.), when wildlife are most likely to be active. Visual and auditory observations were included in the survey. Field observations of birds were conducted using 10 × 42–mm binoculars. All observed birds, mammals, reptiles, amphibians, and invertebrate species were noted during the survey. Species-specific surveys were not conducted, but areas of suitable habitat for listed species were noted during the survey.

RESULTS

The survey area does not encompass any designated or proposed critical habitat for threatened or endangered species. No federally listed threatened, endangered, or candidate animals were observed during the pedestrian surveys. However, the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may forage or roost (described in detail below), and the state threatened white tern (*Gygis alba*) may nest in the survey area.

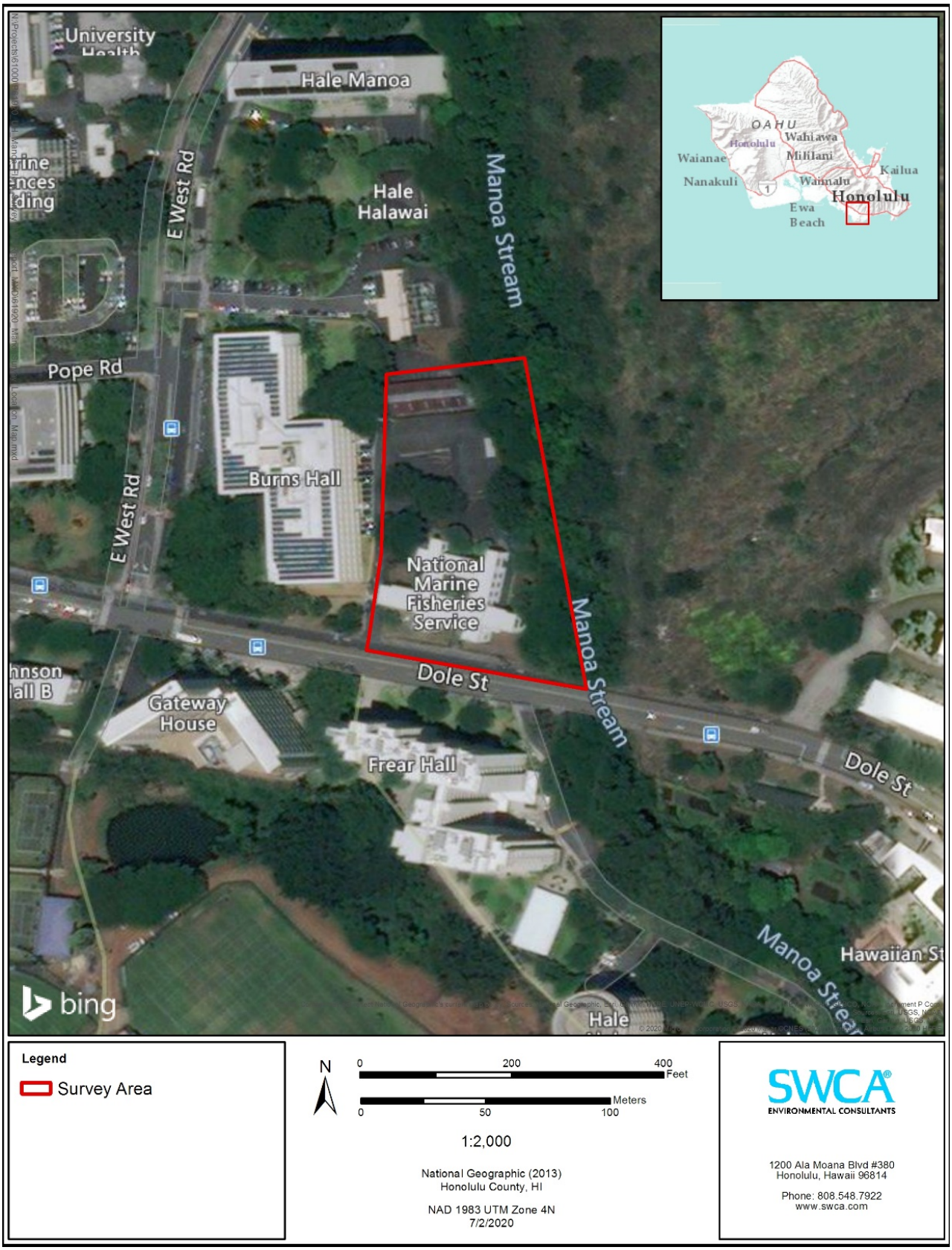

Figure 1. Survey area

Flora

No federally and state-listed threatened, endangered, or candidate plant species, or rare native Hawaiian plant species, were observed in the survey area. In all, 46 plant species were recorded in the survey area during the time of the survey. Of these, only one species—hala *(Pandanus tectorius)*—is possibly native to the Hawaiian Islands, and three species—coconut *(Cocos nucifera),* kukui *(Aleurites moluccana),* and ti *(Cordyline fruticosa)*—were introduced by Polynesian people prior to European contact (Wagner et al. 1999).[1] Appendix A provides a list of all plant species observed by the SWCA botanist in the survey area during the June 26, 2020, survey.

The vegetation in the survey area consists of two vegetation types: streamside ruderal, and landscaped.

Streamside Ruderal Vegetation

This vegetation type is found along Mānoa Stream on the east side of the project site. The plant species found in this vegetation type are non-natives adapted to colonizing disturbed, streamside areas. The most common tree species in this vegetation type are parasol tree *(Macaranga tanarius),* Chinese banyan *(Ficus microcarpa),* and coconut *(Cocos nucifera).* Shrub species include koa haole *(Leucaena leucocephala)* and Arabian coffee *(Coffea arabica).* Abundant herbaceous and grass species found in the ruderal vegetation type are coral berry *(Rivina humilis)*, white shrimp plant *(Justicia betonica)*, and Guinea grass *(Urochloa maxima).* Balloon vine *(Cardiospermum halicacabum)*, a rampant, smothering vine, is occasionally seen in the understory (Figure 2).

[1] The taxonomy and nomenclature of the flowering plants are in accordance with Wagner et al. (1999), Wagner and Herbst (2003), and Staples and Herbst (2005). Recent name changes are those recorded in Wagner et al. (2012). Common/Hawaiian names are provided first, followed by scientific names in parenthesis. If no common or Hawaiian name is known, only the scientific name is provided.

Figure 2. Image of Streamside Ruderal Vegetation type showing coconut *(Cocos nucifera)*, parasol tree *(Macaranga tanarius)*, and Chinese banyan *(Ficus microcarpa)* in the overstory, Arabian coffee *(Coffea arabica)* in the midstory, and coral berry *(Rivina humilis)* and Guinea grass *(Urochloa maxima)* in the herbaceous layer.

Landscaped Vegetation

This vegetation type consists of common ornamental species, including plumeria *(Plumeria rubra),* hibiscus *(Hibiscus rosa-sinensis),* oleander *(Nerium oleander),* monkeypod *(Samanea saman),* and Bermuda grass *(Cynodon dactylon),* all planted around the perimeter of buildings (Figure 3).

Figure 3. Photograph of Landscaped Vegetation type, showing oleander *(Nerium oleander)*, Cape plumbago *(Plumbago auriculata),* monkeypod *(Samanea saman),* and Bermuda grass *(Cynodon dactylon).*

Fauna

In general, most of the wildlife species expected to occur in the study area include assemblages that are found in low-elevation to mid-elevation areas on O‘ahu approximately 100 feet above sea level.
One state-listed species, the white tern (*Gygis alba*), was observed and based on the available habitat the Hawaiian hoary bat is expected to occur. Although not observed during the survey, federally and state-listed waterbird species may occasionally fly over the survey area. The survey area does not encompass any designated or proposed critical habitat for threatened or endangered species.

Avifauna

The birds observed in the survey area are species commonly found in and around Hawai‘i’s urban areas and in the gardens and waterways on O‘ahu. In all, 14 bird species were documented (Table 1).
Two native birds were documented: the black-crowned night heron (*Nycticorax nycticorax*) and white tern. The remaining bird species are non-native introductions. The black-crowned night heron cattle egret (*Bubulcus ibis*), house finch (*Haemorhous mexicanus*), and white tern are protected by the Migratory Bird Treaty Act (MBTA). The MBTA-protected birds, including the white tern, are discussed in more detail below.

Other MBTA species that may occur in the survey area but were not detected include the migrant Pacific golden-plover (*Pluvialis fulva*), wandering tattler (*Tringa incana*), and the feral mallard (*Anas platyrhynchos*). The migrant Pacific golden-plover and wandering tattler overwinter during the non-breeding season and do not nest in Hawai‘i. The feral mallard is a non-native permanent resident.

Foraging habitat for the federal and state-listed Hawaiian coot (*Fulica alai*), Hawaiian moorhen (*Gallinula galeata sandvicensis*), and Hawaiian stilt (*Himantopus mexicanus knudseni*) does not occur in the survey area. However, suitable forage and nest habitat does occur for the federal and state-listed Hawaiian duck (*Anas wyvilliana*). Collectively these species are referred to as Hawaiian waterbirds and their potential to occur in the survey area is discussed in more detail below.

Table 1. Birds observed by SWCA in and near the survey area

Common Name	Scientific Name	Status*	Protected by the MBTA
Black-crowned night-heron	*Nycticorax*	N	X
Brazilian Cardinal	*Paroaria coronata*	NN	
Cattle egret	*Bubulcus ibis*	NN	X
Common myna	*Acridotheres tristis*	NN	
Common waxbill	*Estrilda astrild*	NN	
House finch	*Haemorhous mexicanus*	NN	X
House sparrow	*Passer domesticus*	NN	
Japanese white-eye	*Zosterops japonicus*	NN	
White-rumped Shama	*Copsychus malabaricus*	NN	
Red-vented bulbul	*Pycnonotus cafer*	NN	
Ring-necked parakeet	*Psittacula krameri*	NN	
Spotted dove	*Streptopelia chinensis*	NN	
White tern	*Gygis alba*	N, ST	X
Zebra dove	*Geopelia striata*	NN	
Total		**14**	**4**

* N = Native, NN = Non-native permanent resident, ST = State Threatened

Mammals

The survey area is located on a college campus in an urban setting where it is common to find people walking pet dogs (*Canis familiaris*). Other mammals that were observed include the feral cat (*Felis catus*) and small Indian mongoose (*Herpestes javanicus*). Rodents such as the house mouse (*Mus musculus*) and rats (*Rattus* spp.) were not observed but are expected to occur. Although no other mammals were observed during the survey, forage and roost habitat is present for the Hawaiian hoary bat, and this species is expected to be present.

Reptiles and Amphibians

No reptiles or amphibians were detected during the survey. No terrestrial reptiles and amphibians are native to the Hawaiian Islands.

Invertebrates

The cabbage white butterfly, long legged ant (*Anoplolepis longipes*), and aedes mosquito (*Aedes sp*.). No native invertebrates were recorded during the survey.

DISCUSSION AND RECOMMENDATIONS

Flora

Overall, the vegetation in the survey area is disturbed from previous and current land-use activities. The vegetation types and species identified are not considered unique. All but one of the 46 plant species observed are not native to the Hawaiian Islands, and the one possibly native species observed is of questionable indigenous status and is common throughout the Hawaiian Islands. No threatened or endangered plants were found during the survey, and no designated plant critical habitat occurs in the area. Therefore, the proposed project is not expected to have a significant, adverse effect on flora (botanical) resources.

Weedy, non-native plant species are common in the survey area. Most of these weedy species are widespread in Hawai‘i, and their removal from this site would not be expected to result in a significant decrease in their overall number or distribution. However, construction activities are known to spread invasive species to new areas through the movement of vehicles and materials. For this reason, SWCA recommends the following invasive species minimization measures to avoid the unintentional introduction or transport of new terrestrial invasive species to O‘ahu:

- All construction equipment and vehicles arriving from outside O‘ahu should be washed and inspected before entering the project area.
- Construction materials arriving from outside of O‘ahu should also be washed and/or visually inspected (as appropriate) for excessive debris, plant materials, and invasive or harmful non-native species (plants, amphibians, reptiles, and insects).
- Inspection and cleaning activities should be conducted at a designated location. The inspector should be a qualified botanist and/or entomologist who is able to identify invasive species that are of concern relevant to the point of origin of the equipment, vehicle, or material.
- When possible, raw materials (e.g., fill and construction materials) should be purchased from a local supplier on O‘ahu to avoid introducing non-native species not present on the island.

If landscaping occurs as part of the project, native Hawaiian plants or non-invasive plants should continue to be used to the maximum extent possible. If native plants do not meet landscaping objectives, plants with a low risk of becoming invasive could be substituted. Additional information on selecting appropriate plants for landscaping can be obtained from the following online sources:

- Plant Pono: http://www.plantpono.org/
- Native Plants Hawai‘i: http://nativeplants.hawaii.edu/

Fauna

MBTA and special-status species and their avoidance and minimization measures are discussed below. If the proposed project follows these avoidance and minimization measures, all direct impacts can be avoided.

Migratory Bird Treaty Act

During this survey, SWCA observed four bird species that are federally protected under the MBTA (Table 1). Construction at the site may temporarily displace some of these bird species, but long-term impacts are not expected. These birds (likely limited to a few individuals) are expected to find suitable foraging habitat in nearby areas. The temporary displacement of these individuals at the project site is not expected to affect individual survival or the overall species populations.

The house finch is known to nest in Hawaii from March through July (Badyaev et al. 2020). Months of nesting in Hawaii could not be found for black-crowned night heron (*Nycticorax nycticorax*) and cattle egret (*Bubulcus ibis*).

Direct impacts to MBTA-protected birds could occur if active nests are disturbed or damaged during vegetation removal. To prevent direct impacts to these MBTA-protected birds, the following measures are recommended:

- A nesting bird survey should be conducted by a qualified biologist within 72 hours prior to initiating construction activities during the nesting bird season, and after a break in construction for more than three (3) consecutive days throughout the nesting season.
- If found, active nests should be left in place and undisturbed until chicks have fledged. A qualified biologist should monitor active nests during construction activities to reduce the chances of nest abandonment by temporarily shutting down construction activities that disrupt the normal daily patterns of the birds.

Special-Status Species

Special-status species refers to species that are state or federally listed threatened, endangered, proposed, or candidate species or rare species. Habitat and known range were used to determine the likelihood of special-status species to occur if their presence was not detected.

HAWAIIAN WATERBIRDS

The Hawaiian coot, Hawaiian moorhen, Hawaiian stilt, and Hawaiian duck constitute the Hawaiian waterbird group. Because these species share similar habitat needs and biological characteristics, they are discussed as a single group. Hawaiian waterbirds are most likely to be found in areas associated with wetlands and waterways, such as in or near the streamside ruderal vegetation type, and Manoa stream habitats. These waterbirds are found in a variety of wetland habitats such as freshwater marshes and ponds, coastal estuaries and ponds, artificial reservoirs, kalo or taro (*Colocasia esculenta*) lo‘i or patches, irrigation ditches, sewage treatment ponds, and, in the case of the Hawaiian duck, montane streams and marshlands.

Habitat for the Hawaiian coot, Hawaiian moorhen, and Hawaiian stilt does not occur in the survey area, but it does occur in the kalo patches approximately 215 feet southeast of the survey area. Hawaiian duck foraging habitat occurs in the Manoa stream and nest habitat occurs in the streamside ruderal and landscaped vegetation types in the survey area. However, Hawaiian ducks are unlikely to occur in the survey area because on O‘ahu they have hybridized with feral mallards (Fowler et al. 2009, USFWS 2011).

Because suitable forage and nest habitat occurs adjacent to the survey area, construction activities that create temporary or permanent standing water may attract Hawaiian waterbirds and result in nesting

(USFWS 2020). Therefore, the following avoidance and minimization measure is recommended to avoid impacts to these species:

- Construction activities that create the potential for temporary or permanent standing water should be avoided.

If construction activities are found to create temporary or permanent standing water in the survey area, the following avoidance and minimization measures are recommended:

- In areas where emergent vegetation or other waterbird nesting habitat would be disturbed, waterbird nest searches will be conducted by a qualified biologist before any work is conducted and after any subsequent delay in work of 3 or more days (during which birds may attempt nesting).
- In areas where waterbirds are known to occur, speed limit signs will be posted and followed.
- Waterbird nests, chicks, or broods found in the survey area will be reported to the USFWS within 24 hours and a 100-foot buffer will be maintained until the chicks/ducklings have fledged.
- If an active nest or brood is found, a biological monitor will be present at the construction site during all construction activities to ensure that Hawaiian waterbirds and nests are not adversely impacted.

WHITE TERN

On O‘ahu, white terns have been documented nesting in 58 tree species; of these tree species, white terns most commonly nest in monkeypod (*Samanea saman*), shower trees (*Cassia* sp.), kukui (*Aleurites moluccana*), Chinese banyan (*Ficus microcarpa*), West Indian mahogany (*Swietenia mahagoni*), and Indian banyan (*Ficus benghalensis*) (Liu et al. 2019). Trees used by the white tern on O‘ahu range from 6 to 116 inches in diameter (Liu et al. 2019). The white tern lays eggs directly on branches; thus, eggs and flightless chicks are highly vulnerable to tree trimming and removal activities (Vanderwerf 2003). No nest is made; instead, white terns lay a single egg directly on a bare surface. In Hawai‘i, nesting occurs year-round but most eggs are laid between late January and June, with peak egg laying between March and April (Liu et al. 2019). Indicators that white terns are present include accumulation of white feathers and/or white fecal material beneath a tree (USFWS 2020).

Two trees in the survey area are known to support white tern nesting (Hui Manu-o-Kū 2020). No nesting was observed during the survey. However, one pair of white terns was observed perched on the utility lines above one of the known nest trees. In addition, approximately 10–12 white terns were flying over and around the survey area. Although white terns are tolerant of people and noise, the following actions are recommended to avoid impacts to this species:

- Inspect all trees selected to be cut to determine if nesting white terns are present.
- A white tern nest survey should be conducted by a qualified biologist within 72 hours prior to initiating construction activities during the white tern nesting season, and after a break in construction for more than three (3) consecutive days throughout the nesting season.
- Do not trim trees or remove branches from trees where white terns are actively nesting.
- Do not disturb an active white tern nest nesting tree or branch for at least 80 days for at least as long as the nesting tree or branch remains active as determined by a qualified biologist.

HAWAIIAN HOARY BAT

While no bats or bat sign were observed during the survey effort, the presence of suitable foraging and roosting habitat onsite indicate there is high potential for Hawaiian hoary bats to occur, The Hawaiian hoary bat is known to occur on all of the main Hawaiian Islands, and has been observed from sea level to approximately 13,000 feet (DLNR 2015a, 2015b). Hawaiian hoary bats use both closed habitats near vegetation such as tunneled roadways, and open habitats adjacent to forests, above tree canopies, and over open oceans (Jacobs 1996). Hawaiian hoary bats are insectivores and are regularly observed foraging over streams, reservoirs, and wetlands up to 300 feet offshore (U.S. Department of Agriculture 2009). Hawaiian hoary bats forage in open, wooded, and linear habitats within a wide range of vegetation types (USFWS 1998). The bat typically roosts in dense canopy foliage or in the subcanopy when canopy is sparse, with open access for launching into flight (U.S. Department of Agriculture 2009). Hawaiian hoary bats forage height ranges from 3 feet to above 500 feet above ground level, and the bats can become entangled in barbed wire used for fencing (USFWS 2020). The Hawaiian hoary bat could forage over streamside ruderal and landscaped vegetation types in the survey area and could roost in any of the trees 15 feet or taller. However, direct impacts to bats would only occur if a juvenile bat that is too small to fly but too large to be carried by a parent were present in a tree that was cut down. Implementation of the following avoidance and minimization measures is expected to avoid all project-related direct impacts to Hawaiian hoary bats:

- If felling of standing trees occurs during the bat breeding season, direct impacts could occur to juvenile bats that are too small to fly but too large to be carried by a parent. To minimize this impact, no trees taller than 15 feet should be trimmed or removed between June 1 and September 15.
- The use of barbless top-strand wire is recommended for all fence construction to avoid entanglement of Hawaiian hoary bat (*Lasiurus cinereus semotus*).

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APPENDIX A

Checklist of Plants Observed at University of Hawai‘i Mānoa Multi-Family Housing Project Survey Area on June 26, 2020

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Table A-1 provides an inventory checklist of plant species observed by SWCA Environmental Consultants on June 26, 2020, at the University of Hawai‘i Mānoa Multi-Family Housing Project survey area. The plant names are arranged alphabetically by family and then by species into two groups: monocots and dicots. The taxonomy and nomenclature of the flowering plants are in accordance with Wagner et al. (1999), Wagner and Herbst (2003), and Staples and Herbst (2005). Recent name changes are those recorded in Wagner et al. (2012).

Table A-1. Checklist of Plants Observed at University of Hawai‘i Mānoa Multi-Family Housing Project Survey Area on June 26, 2020.

Family	Scientific Name and Authorship	Status	Hawaiian and/or Common Name
MONOCOTS			
Agavaceae	*Cordyline fruticosa* (L.) A.Chev.	P	kï, ti
Agavaceae	*Sansevieria trifasciata* Prain	X	snake plant
Aloeaceae	*Aloe vera* (L.) Burm.f.	X*	aloe
Araceae	*Epipremnum pinnatum* (L.) Engl.	X*	taro vine, pothos, golden pothos
Arecaceae	*Adonidia merrillii* (Becc.) Becc..	X*	Manila palm
Arecaceae	*Cocos nucifera* L.	P	niu, coconut
Cyperaceae	*Cyperus involucratus* Rottb.	X	umbrella sedge
Pandanaceae	*Pandanus tectorius* Parkinson ex Z	I?	hala, pū hala, screwpine
Poaceae	*Bothriochloa pertusa* (L.) A.Camus	X	pitted beardgrass
Poaceae	*Cynodon dactylon* (L.) Pers.	X	Bermuda grass
Poaceae	*Urochloa maxima* (Jacq.) R.D.Webster	X	Guinea grass
DICOTS			
Acanthaceae	*Asystasia gangetica* (L.) T.Anderson	X	Chinese violet, coromandel
Acanthaceae	*Justicia betonica* L.	X	white shrimp plant, squirrel’s-tail
Acanthaceae	*Odontonema cuspidatum* (Nees) Kuntze	X	
Amaranthaceae	*Alternanthera pungens* Kunth	X	khaki weed
Anacardiaceae	*Mangifera indica* L.	X	mango, manakō, manakō meneke, meneke
Apocynaceae	*Nerium oleander* L.	X*	oleander
Apocynaceae	*Plumeria rubra* L.	X*	plumeria
Araliaceae	*Schefflera actinophylla* (Endl.) Harms	X	octopus tree, umbrella tree
Asteraceae	*Tridax procumbens* L.	X	coat buttons
Bignoniaceae	*Macfadyena unguis-cati* (L.) A.H.Gentry	X	cat's-claw climber

Table A-1. Checklist of Plants Observed at University of Hawai‘i Mānoa Multi-Family Housing Project Survey Area on June 26, 2020.

Family	Scientific Name and Authorship	Status	Hawaiian and/or Common Name
Bignoniaceae	*Spathodea campanulata* P.Beauv.	X	African tulip tree
Boraginaceae	*Carmona retusa* (Vahl) Masam.	X	Fukien tea
Convolvulaceae	*Merremia aegyptia* (L.) Urb.	X	hairy merremia
Euphorbiaceae	*Aleurites moluccana* (L.) Willd.	P	kukui, candlenut
Euphorbiaceae	*Breynia disticha cv.* ‘Roseo-picta’	X*	snowbush
Euphorbiaceae	*Codiaeum variegatum* (L.) Blume	X*	croton
Euphorbiaceae	*Euphorbia hirta* L.	X	hairy spurge, garden spurge
Euphorbiaceae	*Macaranga tanarius* (L.) Müll.Arg.	X	parasol leaf tree
Fabaceae	*Indigofera spicata* Forssk.	X	creeping indigo
Fabaceae	*Leucaena leucocephala* (Lam.) de Wit	X	koa haole
Fabaceae	*Samanea saman* (Jacq.) Merr.	X*	monkeypod, rain tree
Lauraceae	*Cinnamomum burmanni* (Nees) Blume	X	padang cassia
Malvaceae	*Hibiscus rosa-sinensis* L.	X*	hibiscus
Moraceae	*Ficus microcarpa* L.f.	X	Chinese banyan, Malayan banyan
Myrtaceae	*Melaleuca quinquenervia* (Cav.) S.T.Blake	X	paperbark
Myrtaceae	*Syzygium cumini* (L.) Skeels	X	Java plum
Ochnaceae	*Ochna thomasiana* Engl. & Gilg	X	
Oleaceae	*Jasminum multiflorum* (Burm.f.) Andrews	X	
Oleaceae	*Noronhia emarginata* (Lam.) Poir.	X	
Phytolaccaceae	*Rivina humilis* L.	X	coral berry, rouge plant
Plumbaginaceae	*Plumbago auriculata* Lam.	X*	cape leadwort
Rubiaceae	*Coffea arabica* L.	X	Arabian coffee
Rutaceae	*Murraya paniculata* (L.) Jack	X	
Sapindaceae	*Cardiospermum halicacabum* L.	X	heartseed, balloon vine
Sapindaceae	*Filicium decipiens* (Wight & Arn.) Thwaites	X	fern tree

LEGEND: P - Polynesian introduced, P? - probably Polynesian introduced but possibly introduced in historic times, I - indigenous, I? - probably indigenous but possibly naturalized, E - endemic, E? - probably endemic but possibly naturalized, X - non-native, X*- non-native cultivate

APPENDIX C

Archaeological Literature Review and Field Inspection Report

AN ARCHAEOLOGICAL LITERATURE REVIEW AND FIELD INSPECTION FOR THE UNIVERSITY OF HAWAIʻI AT MĀNOA MULTI-FAMILY SITE PROJECT WAIKĪKĪ AHUPUAʻA, HONOLULU (KONA) DISTRICT, OʻAHU ISLAND, HAWAIʻI [TMK: (1) 2-8-023:009]

Prepared by:
Michael J. Woodburn, M.A.,
Thomas Dols, M.A.
and
Morgan E. Davis, M.A.
April 2020
FINAL

Prepared for:
Joanne Hiramatsu
Belt Collins Hawaii LLC
2153 North King Street
Suite 200
Honolulu, HI 96819

SCIENTIFIC CONSULTANT SERVICES, Inc.
HAWAII
1347 Kapiolani Blvd., Suite 408 Honolulu, Hawai`i 96814

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ABSTRACT

At the request of Joanne Hiramatsu of Belt Collins Hawaii LLC, on behalf of the University of Hawaiʻi at Mānoa, Scientific Consultant Services, Inc. (SCS) has prepared this Archaeological Literature Review and Field Inspection in advance for the proposed University of Hawaiʻi at Mānoa (UHM) Multi-Family Housing Project, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu Island, Hawaiʻi [TMK: (1) 2-8-023:009]. The proposed 2.21-acre project includes the demolition of existing buildings on the property in order to construct one building consisting of two towers, one tower at 14-stories tall and the other tower at 18-stories tall, for graduate student and staff housing consisting of approximately 388 individual units. Historical research and previous archaeological studies indicate that areas near and within the current project area were utilized throughout the Historic period for agriculture and/or scattered human habitation. In addition, traditional Hawaiian burials were also found these areas as isolated and clusters. As such, there is potential for subsurface archaeological cultural deposits, and possibly human burials, to exist within the current project area. Given that the project area was occupied during the historical period and that no archaeological testing was conducted within the project area, an archaeological inventory survey (AIS) is recommended with subsurface testing as the current buildings will be demolished and replaced with the new building. It is also recommended that consultation with the State Historic Preservation Division (SHPD) concerning the archaeological testing occur prior to the start of the AIS project.

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INTRODUCTION

Scientific Consultant Services, Inc. (SCS) at the request of Belt Collins Hawaii LLC has prepared this Archaeological Literature Review and Field Inspection (LRFI) for the University of Hawaiʻi at Mānoa Multi-Family Housing Project, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu Island, TMKs: (1) 2-8-023:009. The project area, roughly trapezoidal in shape, is located on the eastern boundary of the University of Hawaiʻi at Mānoa (UH-Mānoa) campus. The project area is bounded to the east by Mānoa Stream, to the north by an electrical power substation, to the west by the Burns Hall building, and to the south by Dole Street. The land was previously occupied by the National Marine Fisheries Service (NMFS) building complex, originally constructed in 1950 (Tomonari-Tuggle 1998). The approximately 2.21 acres project area is shown on a portion of the 1998 U.S. Geological Survey map (USGS), TMK map, and a 2018 Google aerial map (Figure 1 through Figure 3).

The UH-Mānoa Multi-Family Housing Project proposes the demolition of existing buildings within the project area in order to construct graduate student and staff family housing. The proposed new building towers will reach heights of 14 and 18-stories and contain approximately 388 individual units, consisting of approximately 203 studios and 185 two-bedroom units. The ground floor of the new building will also contain a convenience market, coffee shop, lounge, and childcare center.

This LRFI study was completed to facilitate the project's planning and to support historic preservation review compliance by assessing the likelihood that archaeological historic properties may be affected by the project and, based on findings, providing cultural resource management recommendations. This LRFI is a Hawaiʻi Revised Statutes (HRS) §6E planning document in support of Hawaiʻi Administrative Rules (HAR) §13-275 only and is not intended to fulfill the requirements of an archaeological inventory survey (per HAR §13-276).

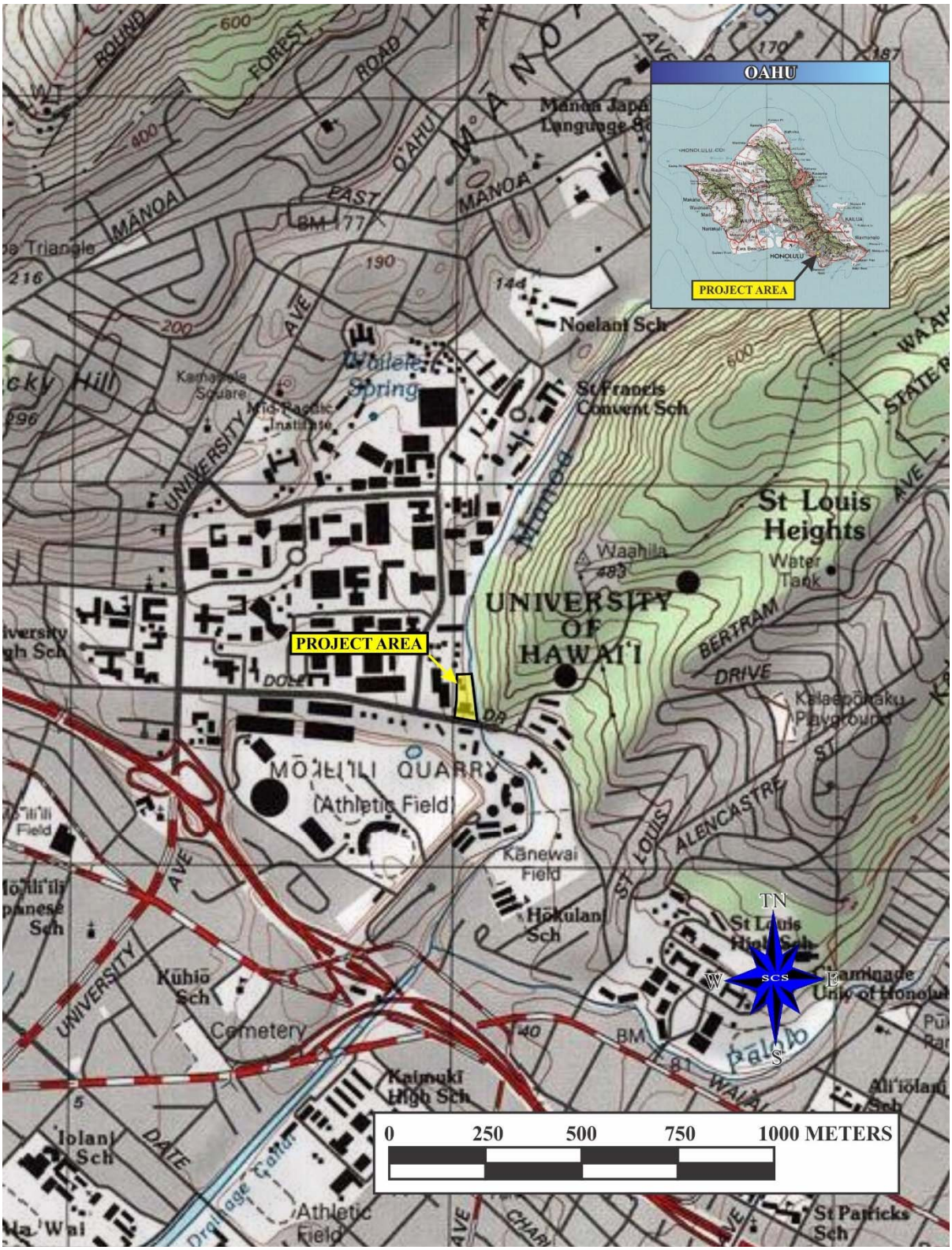

Figure 1: 1998 United States Geological Survey Honolulu quadrangle map showing the location of the project area parcel in yellow.

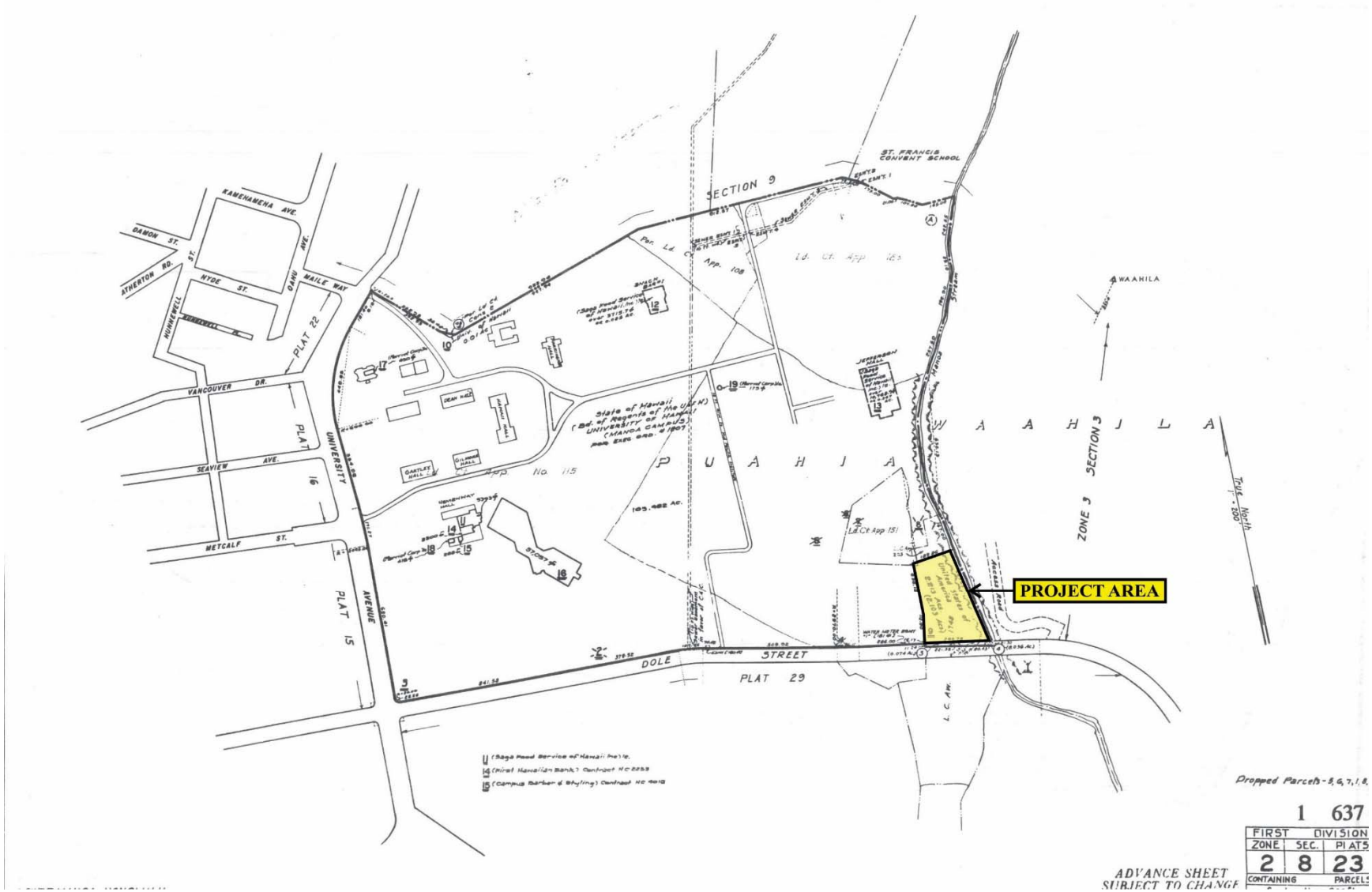

Figure 2: TMK: (1) 2-8-023 showing the location of the project area parcel in yellow.

Figure 3: 2013 Google Earth aerial photograph showing the location of the project area parcel in yellow.

ENVIRONMENTAL SETTING

PROJECT AREA LOCATION

The 2.21-acre project area is situated at the southwestern base of Wa‘ahila Ridge (St. Louis Heights) on the eastern edge of Mānoa Valley. The project area is bounded by Mānoa Stream to the east, Dole Street to the south, the Burns Hall building to the west, and a Hawaiian Electric Company (HECO) substation to the north. The project area is located approximately 2.6 kilometers (km) north of O‘ahu’s southern coastline at an elevation of approximately 18.6 meters (m) (approximately 61 feet [ft]) above mean sea level (amsl).

CLIMATE

The climate of Mānoa Valley is consistent with southeastern, leeward portion of O‘ahu, which is neither the driest and hottest nor the wettest and coolest portion of the island. The mean annual air temperature in the vicinity of the project area is 23.6 degrees Celsius (74.5 degrees Fahrenheit), ranging from a low average of 21.6 degrees Celsius (70.9 degrees Fahrenheit) in January to a high average of 25.4 degrees Celsius (77.7 degrees Fahrenheit) in August (Giambelluca et al. 2014).

The mean annual rainfall in the vicinity of the project area is about 870.6 mm (34 inches), ranging from an average low of about 36.5 mm (1.4 inches) in June to an average high of about 118.8 mm (4.7 inches) in December (Giambelluca et al. 2014).

SOILS

Two distinct soil types are present within the project area. Most of the project area consists of Makiki stony clay loam (MIA), while the eastern edge bordered by the Mānoa Stream consists of rock land (rRK) (Foote et al. 1972:92, 119). These are depicted using data from the United States Department of Agriculture (USDA) in a Google Earth map in Figure 4, below.

Makiki Series

Makiki stony clay loam (MIA) is described as:

> This soil is similar to Makiki clay loam, 0 to 2 percent slopes, except that there are enough stones to hinder cultivation. The stones are angular and make up about 15 percent of the soil by volume. The depth to basalt of cinders varies from 20 to 60 inches. Basalt outcrops are common. The soil is neutral to slightly acid. This soil is almost entirely in urban use. The University of Hawaii uses a small area for truck crop experiments. (Foote et al. 1972:92)

Figure 4: Google Earth aerial photograph (2013) showing soil series in the project area and the vicinity.

Rock Land Series

Rock land (rRK) is described as:

> This land type consists of areas that have 25 to 90 percent exposed rock. Among the rocks are soils that are only a few inches deep. Slopes are mainly 40 to 70 percent. Stones are common, and there is a danger of stones rolling to areas below (Foot et al. 1972:30).

VEGETATION

The vegetation within the project area consists mostly of intermittent patches of landscaped grass, as much of the project area is a paved parking lot. Manicured hedgerows are also present and are located adjacent to the existing on-site structures. Several plumeria trees (*Plumeria rubra*) also exist on-site, both along Dole Street and in the north portion of the project area.

BUILT ENVIRONMENT

Currently, there are three structures located within the project area confines. According to the City and County of Honolulu Department of Permitting and Planning website (dppweb.honolulu.gov/DPPWeb/Default.aspx) the two northernmost single-story buildings (3332 and 6800 square feet) were constructed in 1945 and the southernmost two-story building (21,156 square feet) was constructed in 1955. The largest of the three structures is the two-story National Marine Fisheries Service laboratory building which borders the north side of Dole Street. The remaining two steel buildings identified as Annex I and Annex II are in the northern portion of the project area. Most of the remaining ground surface is comprised of a paved parking area with manicured areas and a covered walkway.

BACKGROUND RESEARCH

TRADITIONAL HISTORY

One of the most persistent and still unresolved questions in Hawaiian archaeology is: when did Polynesians first colonize the archipelago? In the early twentieth century, oral traditions and genealogies were thought to hold the best potential to establish chronologies. These sources suggested that at least two migrations occurred, with the second migrant group seizing power from the first (Bayman and Dye 2013:20). However, more than a century of archaeological research has contributed significantly to the historical evidence base.

When it was first introduced in the mid-twentieth century, radiocarbon dating was heralded as a means to sharpen the historical resolution of genealogies, but this promise has proven elusive, resulting in a wide range of estimates. Early on, three sites were identified as potentially containing evidence of initial settlement: H1, O18, and the Hālawa Valley Dune site, based on comparative analysis of historically documented Hawaiian culture and a presumption of evolution in cultural

form (Bayman and Dye 2013:21). In the 1990s, initial Hawaiian colonization was estimated at AD 0-400 (Bayman and Dye 2013:22-23). However, recent reinterpretations of the chronometric age estimates challenge these early dates.

Chronometric hygiene, which has attempted to refine errors in estimates and only accepts 'clean' dates, suggested A.D. 1219-1266 as the earliest documented evidence of settlement. However, this date range is probably too late, as non-archaeological paleo-environmental records suggest that human environmental perturbations began around A.D. 700-800. Flora and fauna introduced by Polynesians can also be dated. For example, the earliest dated Polynesian rat (*Rattus exulans*) bones suggest a settlement date of about A.D. 960-980. The accumulation of more data points will likely increase the precision of the settlement model (Bayman and Dye 2013:23).

PAST POLITICAL BOUNDARIES

In general, several Hawaiian terms, such as *moku*, *ahupuaʻa*, *ʻili* or *ʻili ʻāina* were traditionally used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupuaʻa*) that customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupuaʻa* were therefore able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupuaʻa* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *ʻili* were smaller land divisions next to importance to the *ahupuaʻa* and were administered by the chief who controlled the *ahupuaʻa* in which it was located (Lyons 1875:33; Lucas 1995:40). The *moʻo ʻāina* were narrow strips of land within an *ʻili.* The land holding of a tenant, or *hoa ʻāina,* residing in an *ahupuaʻa* was called a *kuleana* (Lucas 1995:61). The project area is located in the traditional *moku* of Kona, which was renamed Honolulu in 1859, and Mānoa Ahupuaʻa (USGS 1998).

One legend, related by Handy and Pukui (1951:187), discussed the control of Oʻahu territory by gods during an early era. According to this legend the project area would have been considered part of a leeward *moku*. At a later period, possibly during the early sixteenth century, other oral traditions indicate that Māʻilikukahi was chosen by the chiefs to be the *mōʻīhoʻoponopono o ke aupuni* (administrator of the government) and to perform the division of Oʻahu's land into districts (*moku*) and subdistricts (Cordy 2002; Kamakau 1991:53-55). Māʻilikukahi created six districts and six district chiefs (*aliʻi ʻai moku*). Land was considered the property of the king or *aliʻi ʻai moku* (the paramount chief of the district or island). The title of *aliʻi ʻai moku* ensured rights and responsibilities to the land but did not confer absolute ownership. The king kept the parcels he wanted; his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *makaʻāinana* (commoners) worked the individual plots of land. It is said that Māʻilikukahi gave land to *makaʻāinana* all over the island of Oʻahu (Cordy 2002).

In accordance with the oral traditions quoted above, ethno-historic evidence, and archaeological data, Ladefoged and Graves (2006) suggested that originally O‘ahu was divided into two *moku*, each ruled by an independent chief: a leeward *moku*, possibly referred to as Kona, and windward *moku*, possibly called Ko‘olau (Ladefoged and Graves 2006:264). As stated above, the project area would have been situated within the hypothetical ancient leeward *moku*. According to Ladefoged and Graves, these hypothetical windward and leeward *moku* were later subdivided into multiple *moku*. Because oral traditions suggest that during the later pre-contact era (i.e., post-colonization) paramount chiefs ruled over a mix of wet and dry *moku*, Ladefoged and Graves further suggested that the original leeward/windward land division eventually gave way to a north/south division—a hypothesis which they note is supported by the archaeologically determined *heiau* (temple) construction sequences (Ladefoged and Graves 2006:266). The project area would have been situated within the southern political division.

In the Hawaiian Islands, *moku* are subdivided into multiple *ahupua‘a*. Presumably these smaller divisions occurred because of socio-political and geographic fissioning resulting in the creation of new landholding descent groups, each of which was associated with discrete *ahupua‘a* (Kirch 1985:31-33). While the absolute chronology of *ahupua‘a* creation and delineation is unknown, Ladefoged and Graves (2006) have developed a method for predicting the sequence of *ahupua‘a* divisions. Ladefoged and Graves suggested that *ahupua‘a* originally followed natural features, and that, therefore, *ahupua‘a* that have bifurcations points at or near ridgelines, referred to as full bifurcations, predate *ahupua‘a* whose bifurcation points occur part way down an adjacent *ahupua‘a* boundary, called partial bifurcations (Ladefoged and Graves 2006:271).

TRADITIONAL SETTLEMENT PATTERNS

Archaeological settlement pattern data suggests that initial colonization and occupation of the Hawaiian Islands first occurred on the windward shoreline areas of the main islands. The drier, leeward part of O‘ahu was apparently used intermittently for natural resource exploitation, as evidenced, for example, by coastal fishing sites (Cordy 2002:14-15). However, permanent settlement in leeward portions of the islands did not occur for at least several centuries (Kirch 2011). Specifically, for southeastern O‘ahu, in the vicinity of the project area, Thomas suggested that “early settlements may have been in rockshelters, with subsequent permanent housing in the coastal areas” (1995:24). Because the project area is neither situated within a coastal zone, nor likely to have contained caves in the past, the earliest settlement in the vicinity of the project area may date to the late expansion period, or later.

Although coastal settlement was initially dominant, Native Hawaiians eventually began cultivating and living in the upland kula (plains) zones. They tended to settle in ecotones that offered both fishing and agricultural opportunities, suggesting that access to inland resources was

a priority (Kirch 1985). Although Hawaiians traditionally received the majority of their protein from fish, Handy has stated: "…for every fisherman's house along the coasts there were hundreds of homesteads of planters in the valley and on the slopes and plains bet-ween the shore and forest" (1972:vi). The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupuaʻa*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland kalo (taro, C. esculenta) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugarcane, *Saccharum officinaruma*) and *maiʻa* (banana, Musa sp.), were also grown. In leeward sections of the Hawaiian Islands, other crops, such as *ʻuala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch 1992:5, 119; Kirch 1985).

Agricultural development on the leeward side of Oʻahu was likely to have begun during the Late Expansion Period (AD 1400–1650), possible only after, and as a consequence of, the arrival of sweet potato in the Hawaiian archipelago (Kirch 2010:128, Table 4.1, 2013:100). Greater population expansion to inland areas began around the fourteenth century and continued through the sixteenth century. Large scale or intensive agriculture was implemented in association with habitation, religious, and ceremonial activities (Kirch 2010). Several prominent archaeologists have persuasively argued that expansion from productive, windward coastal parts of the Hawaiian Archipelago areas into more marginal areas was a key aspect of the transition from chiefdom to state-level political organization. However, recent research by Kahn et al. (2016) suggests that hinterland areas were exploited early because they provided access to unique resources, and later possibly to escape the tyranny of the emerging states.

Traditionally, Hawaiian chiefs preferred coastal lands for their residences. Easily accessible resources such as offshore and onshore fishponds, the sea with its fishing and surfing—known as the sports of kings, and some of the most extensive and fertile wet taro lands were located in the area (Kirch 1992:19). In the early post-Contact period, Mānoa Valley was a favored spot of the *aliʻi*, including Kamehameha I, Chief Boki (Governor of Oʻahu), Kaʻahumanu, Haʻalilio (an advisor to King Kamehameha III), Princess Victoria, Kanaʻina (father of King Lunalilo), Lunalilo, Keʻelikōlani (half-sister of Kamehameha IV), and later Queen Liliʻuokalani (Thrum 1892:114). Inland resources necessary for subsistence could easily be brought to the *aliʻi* (chiefs) residences on the coast from nearby inland plantations. The majority of farming was situated in the lower portions of stream valleys where there were broader alluvial flat lands or on bends in the streams where alluvial terraces could be modified to take advantage of the stream flow. Dry land cultivation occurred in colluvial areas at the base of gulch walls or on flat slopes (Kirch 1985; Kirch 1992:59).

LATE POST-CONTACT PERIOD

Historical accounts of the Mānoa Valley and the adjacent Palolo Valley, situated at the base of Koʻolau Range, highlight the quantity and quality of agricultural fields within the region. The area between the head of Mānoa Valley and the ocean used to be one continuous spread of taro land and fishponds (Handy and Handy 1972; Menzies 1920; Vancouver 1798: I). According to Handy and Handy (1972:290) "[i]n localities like Waipiʻo on Hawaiʻi or Mānoa on Oʻahu, where there was extensive and continuous taro cultivation of contiguous loʻi, houses were not far apart, land holdings were interlocking, and the systems of waterways were controlled and serviced collectively."

Bloxam described several hundred fishponds extending a mile inland from the shore (Bloxam 1925). However, as the post-Contact period of Hawaiian history progressed, the use of land for agriculture and fishponds greatly decreased. By 1901, only 14 fishponds were recorded to be in use in the valley (Cobb 1905). In agreement with this pattern, a quarter-century later McAllister observed that "all of this land has been drained and filled: neither fishponds nor taro lands have survived" (McAllister 1933:76).

In 1811 Liliha, the daughter of Hoapili, inherited the lands and brought them with her to her marriage to Boki, Governor of Oʻahu (Bouslog et al. 1994). Whilst on a trip to England Boki met British agriculturalist John Wilkerson, who subsequently traveled back to Hawaiʻi with Boki. In 1825, Wilkerson planted seven acres atop Punahou Hill with sugar cane, which was the first sugar plantation in the Hawaiian Islands (Kamakau 1991). After Wilkinson's death in 1826, the plantation was converted into a distillery before becoming a base for mission work Kuykendall 1938:172).

Historical documents suggest that in the nineteenth century, Mānoa Valley included agricultural fields and scattered settlements (Figure 5). In 1892, before it was urbanized, Thrum described the beauty of Mānoa Valley and his description made clear that land use in historic times saw a variety of uses, with taro cultivation being the most prominent. Some coffee was planted in Mānoa Valley foothills in conjunction with Wilkinson's agricultural endeavors as well (Thrum 1892:114):

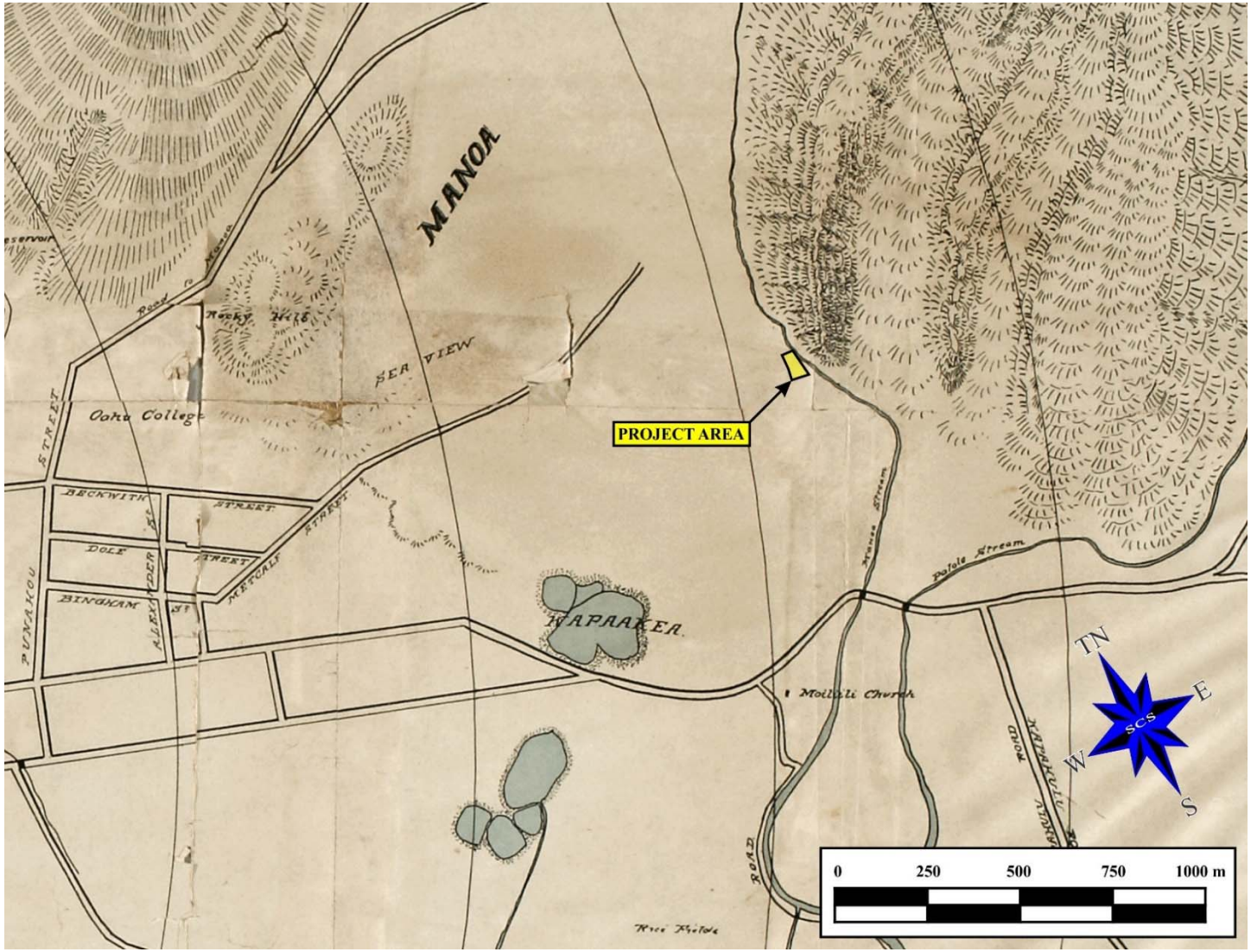

Figure 5: Project area location on the Dove 1892 map of Honolulu. The approximate location of the project area parcel is shown in yellow.

> "For nearly a mile the road leads by or along pasture fields with no vestige of tree or shrub other than the lantana pest and an occasional algeroba *(kiawe),* and passes along Round top or Ualakaa ...
>
> At this summit of the road the whole valley opens out to view, the extensive flat area set out in taro, looking like a huge checker-board, with its symmetrical emerald squares in the middle ground, surrounded by pasture fields on the slopes at the base of the guarding hills. Here and there ' mid sheltering trees, humble dwellings dot the scene around, while up the rugged slopes the almost endless shades of green with black worn seams of rock oft times lightened by 'silvery thread of torrent', forms the background to one of the most charming pictures, either in the clear sunlight, heightened as it often is by cloud shadows chasing rifts of sunshine down the mountain sides; or, as frequently, may be, to watch the drifting mist or rain sweep down one side of the valley, while the other basked in the sun, throwing over its weeping neighbor a 'bow of promise' so radiant and bright that its-double, or even triple, reflection is no rarity" (Thrum 1892:110-111).

Historical maps of this same period indicate the absence of urban development in the vicinity of the project area (see Figure 5). Hence, on the eve of the twentieth century, the landscape of the Mānoa Valley in the vicinity of the project area would have resembled the pre-contact landscape. Within a few decades, this would no longer be the case.

The Māhele

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on Western law. Kauikeaouli (Kamehameha III) established laws changing traditional Hawaiian economy to that of a market economy (Kuykendall 1938, Daws 1984, Kelly 1983). The Board of Commissioners to Quiet Land Titles, also known as the Land Commission, was established in 1845 for "the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any land property" (Chinen 1961:8). The Māhele of 1848 divided Hawaiian lands between the king, chiefs, government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka'āinana* (commoners) were able to claim the plots on which they had been cultivating and living, if they had made aware of the procedures.

These claims did not include any previously but currently fallow cultivated lands, *ʻokipuʻu* (forest clearing on Oʻahu, stream fisheries, or many other resources necessary for traditional survival (Kelly 1983, Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961).

Data culled from the Māhele records largely confirms the land use practices in the previously mentioned narratives. The 68 LCAs located within the Mānoa Valley were primarily were for *loʻi*, house lots, ʻ*āpana* and various agricultural purposes. The largest grant went to the American Board of Commissioners for Foreign Missions who received a total of 30 0.68 ha (1.68 ac.); this became the campus for Punahou School (Bath and Kawachi 1990). The project area was formerly owned by Victoria Kamamalu, who died in 1866. The land was then passed to her sole heir Moses Kekuanaoa. In 1868, Kekuanaoa died and the land was passed to. Kamehameha V. In 1872, Kamehameha V died, and the land was passed to Princess Ruth. In 1883, Princess Ruth died, and the land was passed to Bernice Pauahi Bishop. When Bishop died, the land became part of the Bishop Estate (Ebisu 1983:169).

Although multiple Land Commission Awards (LCA) are located to the south and north of the project area, only LCA 1748 includes the project area (Figure 6). Land Commission Award 1748 consists of a 7.44-acre parcel of land in Kānewai and is bisected east-west by Dole Street. The north portion of LCA 1748 contains the current project area. Originally awarded to Ono in 1847, LCA 1748 was described solely as a house lot, containing three of Ono's houses and bounded by a fence (Waihona 2019). Documentation for LCA 1748 is provided as Appendix A.

LATE 19TH TO 20TH CENTURY

For a two-year period of time beginning in 1882 some Chinese companies attempted to shift their taro agriculture to rice cultivation. High winds, cold rains and rice birds confounded those early attempts at diversification, and the fields were once again used to grow taro (Thrum 1892:116). Mānoa Valley was also utilized as pasture land in historic times for the "stock of more than one dairy enterprise" (Thrum 1892:110).

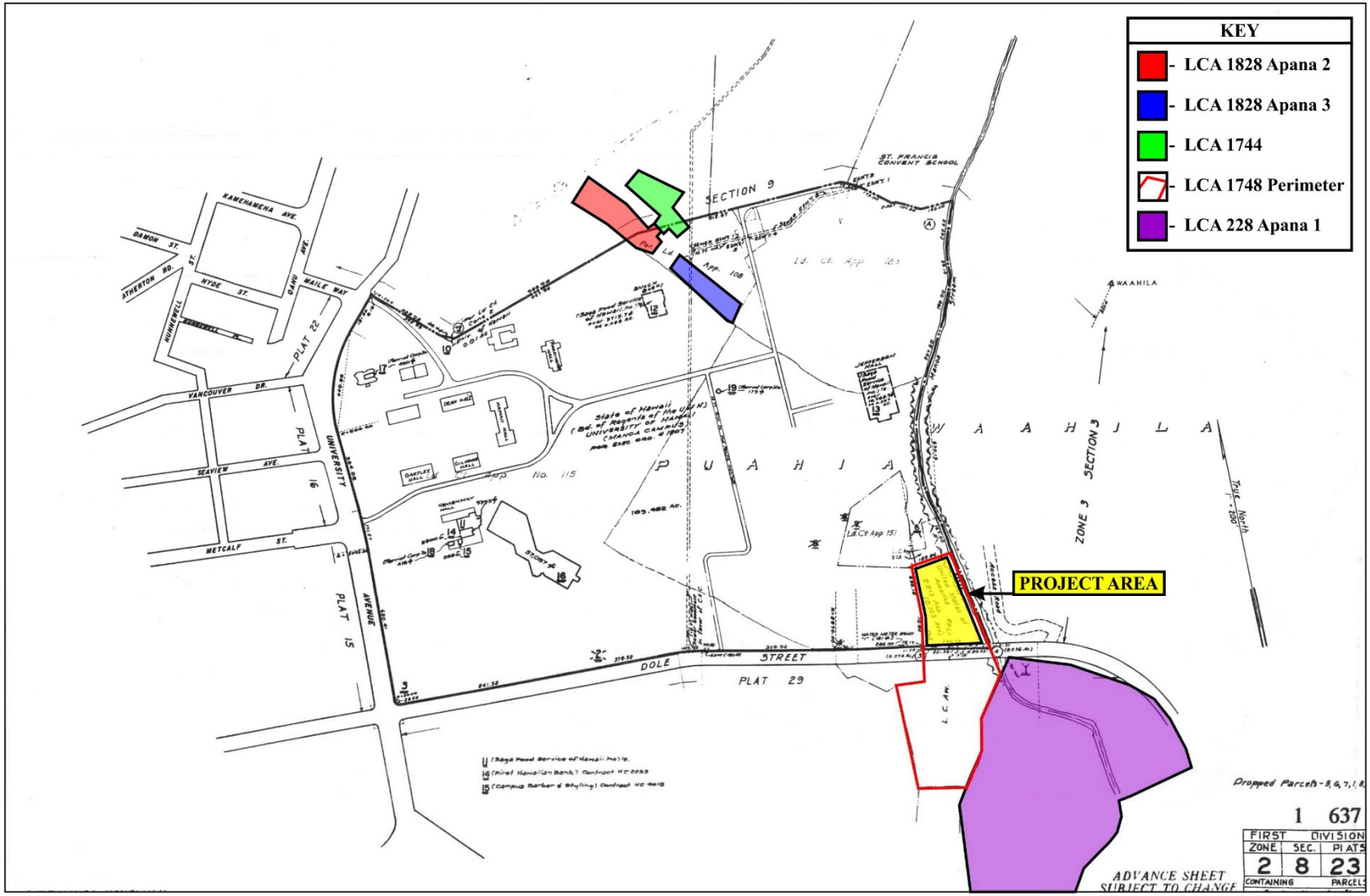

Figure 6: Land Commission Awards in and surrounding the project area.

As early as 1889, the areas within and immediately *makai* of the project area was used as a stone quarry, known as Moʻiliʻili Quarry. The location of this quarry is documented in a historical map (e.g., starting with the 1899 map of Oahʻu, Figure 7). In 1908, the Honolulu Construction and Draying Co. was incorporated and, after obtaining a lease from the Bishop Estate, began operations at the Moʻiliʻili Quarry the following year. The stone quarried from this location, which was known as the best in the Hawaiian archipelago, was used to build many structures within the growing city of Honolulu, ranging from curbstones to tombstones. The quarry became especially important during World War II, to support the military's efforts to harden defenses. Mining operations ceased at the Moʻiliʻili Quarry in 1949 (Ebisu 1983:169-170). Even before the quarry ceased operation, the University of Hawaiʻi sought to acquire the property, and this acquisition was approved in 1947. Construction in this parcel began in 1956 with the Physical Education Building (Ebisu 1983:171).

Through the early decades of the twentieth century, the area in the vicinity of the current project area remained relatively undeveloped as seen in historic maps from the time (Figures 8, 9, and 10). The expansion of the University of Hawaiʻi and other land use changes in the Mānoa Valley were related to the changing demographics and economies of the Hawaiian Islands (Figure 11). By the mid-twentieth century, taro fields gave way to residential land use, as Handy observed: "Some of the lower portions of the old taro area inland from the slightly elevated land southwest of Rocky Hill is now covered by streets and houses" (Handy 1940:77; see Figure 10). After World War II, the Hawaiian sugar industry market declined as mainland-produced corn syrup gained increased market share. At the same time, the tourist industry began to dramatically expand as American GIs who had spent time in the Pacific theatre returned with their families to Hawaiʻi, which was advertised as an idyllic paradise (Kraus-Friedberg 2008:127). The population of Oʻahu also began to increase significantly in the post-war years, especially in Honolulu and surrounding areas, leading to the conversion of former agricultural lands to residential and commercial developments (Fung Associates, Inc. 2011). The agricultural to urban transformation accelerated following Statehood (Fung Associates, Inc.). and this is well documented for Mānoa Valley as seen in changes between 1927 (see Figure 10) and 1953 (see Figure 11).

Figure 7: Project area location on the 1899 map of Oahu (Taylor 1899). The quarry is identified to the southwest of the approximate location of the project area parcel (which is indicated in yellow).

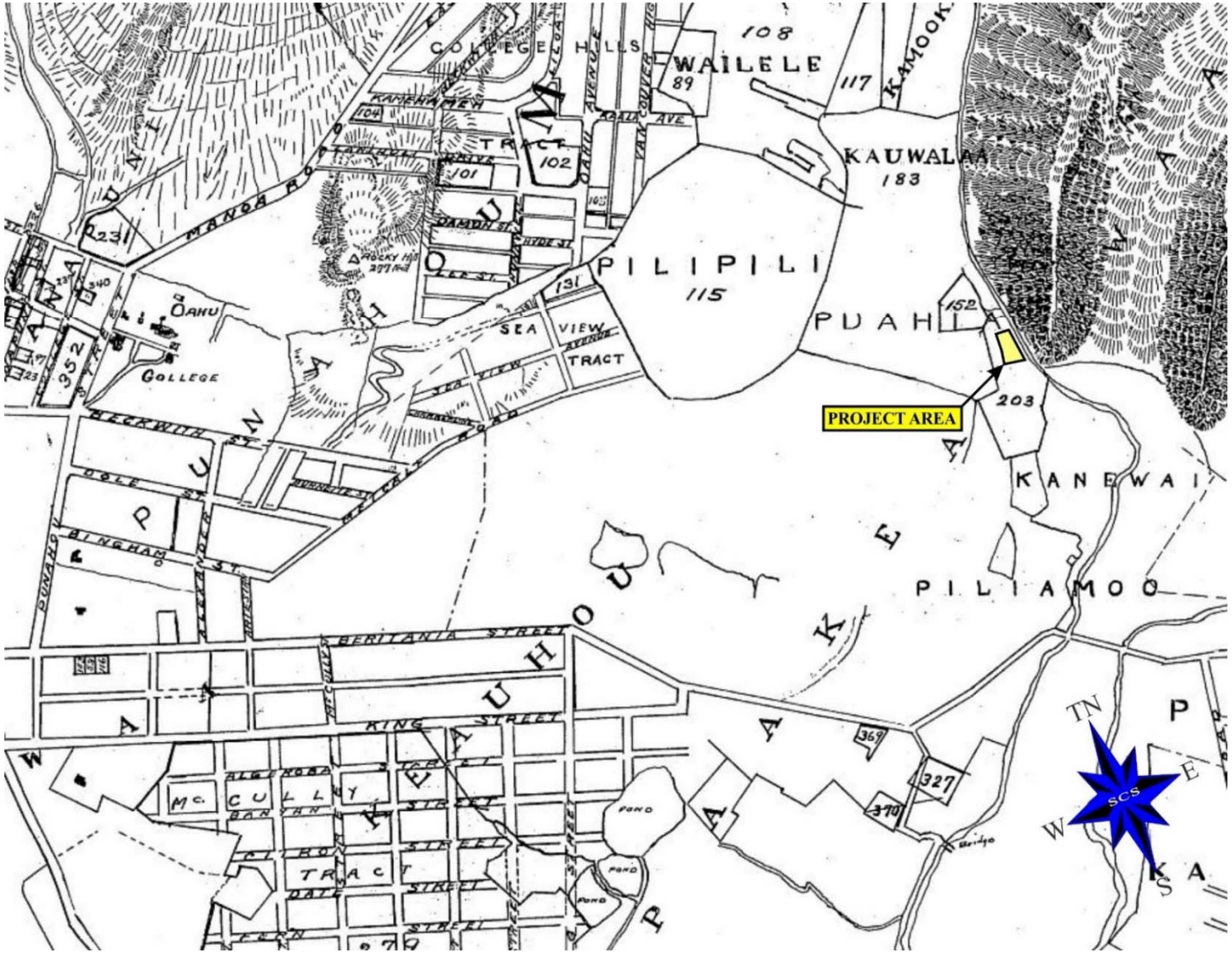

Figure 8: Project area location on the Monsarrat 1901 map of Honolulu. Note the lack of development in the vicinity of the project area (approximate location marked in yellow).

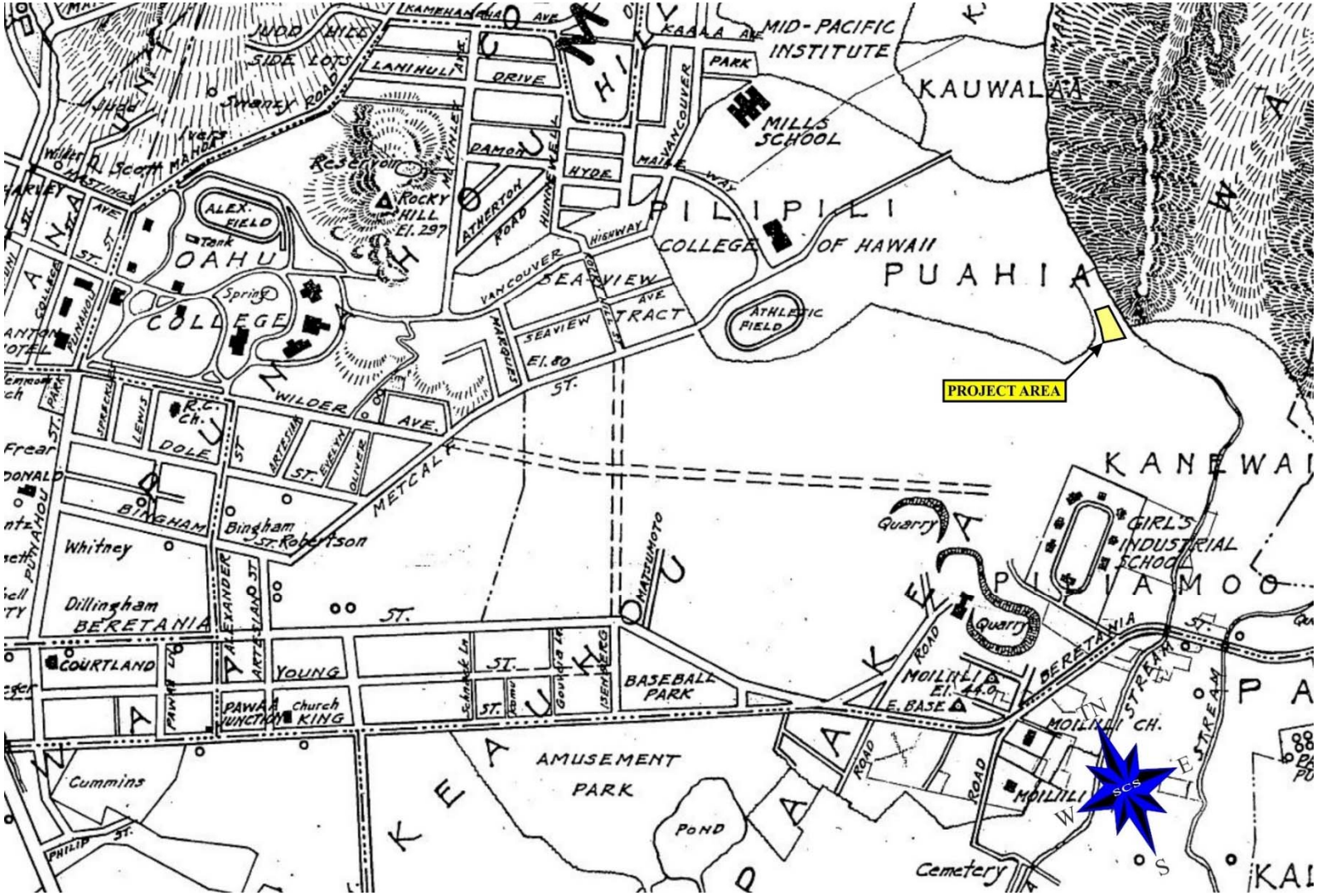

Figure 9: Project area location on the 1920 Monsarrat map of Honolulu. Note the quarry is still noted on this map to the southwest of the approximate location of the project area, identified in yellow.

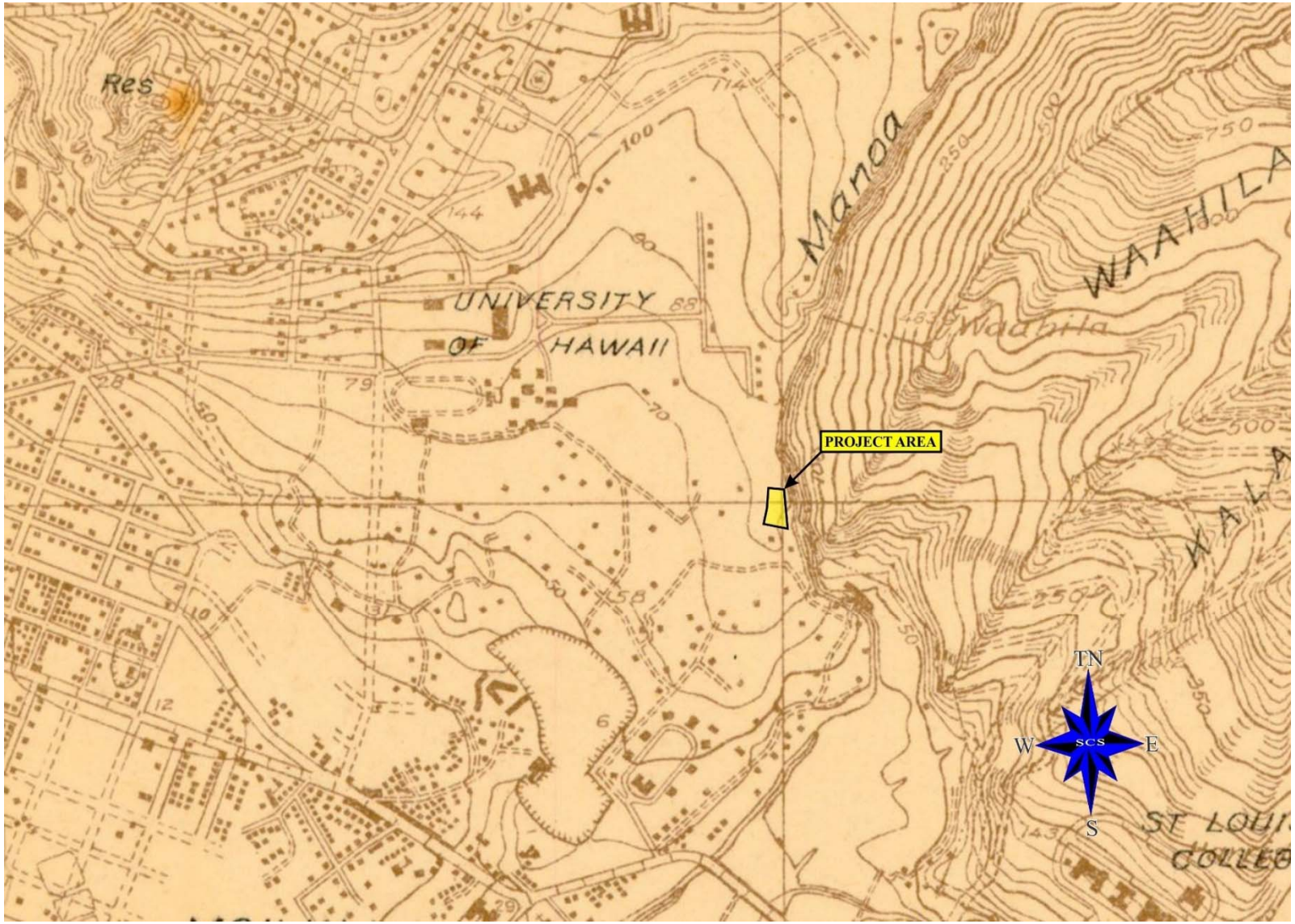

Figure 10: 1927 USGS Honolulu Quadrangle Map showing Project Area Location.

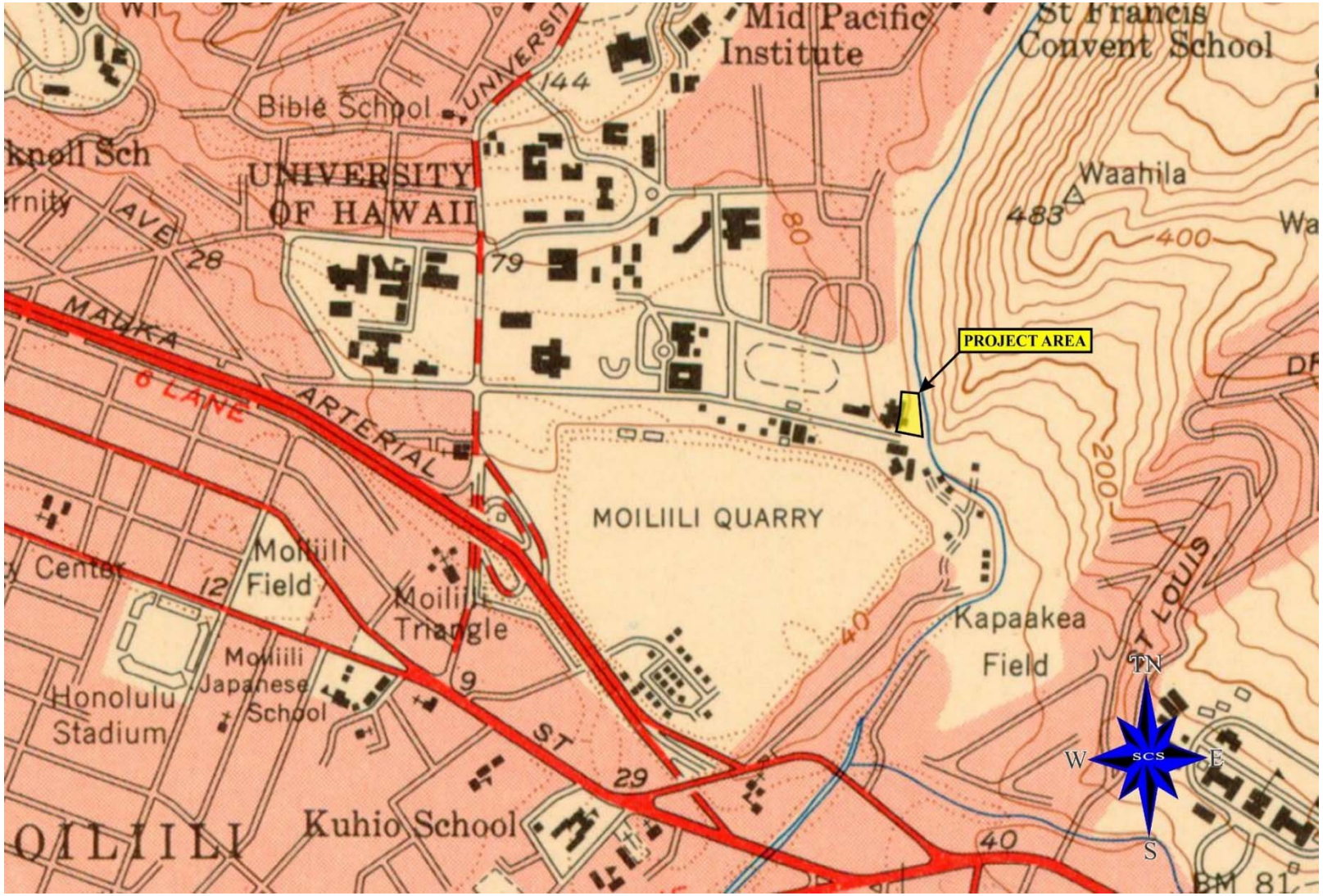

Figure 11: 1953 USGS Honolulu Quadrangle Map showing Project Area Location.

PREVIOUS ARCHAEOLOGY

Despite numerous historical descriptions that suggest the Mānoa Valley would have been home to a large population during the pre-Contact Period, relatively few archaeological studies have been conducted in the area that would help to expand on the prehistory of the valley. Numerous archaeological projects have documented the presence of human skeletal remains on and near the UH-Mānoa campus (Smith & Kawachi 1989, Hammatt & Shideler 1991), while additional projects have focused on historical research and excavation of taro fields located at Kānewai situated at the mouth of the valley (Liston & Burtchard 1996). Previous archaeological studies conducted within or near the project area are listed in below (Figure 12). Historic properties identified in the vicinity of the project area are listed below (Figure 13). The studies most relevant to the current project areas are further described below in Table 1.

Bath et al. (1988) report the discovery of human remains at the intersection of Wilder and Metcalf Avenues. The burial, designated SIHP # 50-80-14-4038, was determined to have been disturbed during construction and was encountered at approximately 120-130 centimeters below ground surface. Additional cultural materials including charcoal and invertebrate remains were also found in association with the skeletal material.

Smith and Kawachi (1989) recovered a burial that was inadvertently discovered during construction at Keller Hall. The burial was identified during excavation of an air conditioner runoff drain and designated as SIHP # 50-80-14-4191. Further analysis of the remains determined they represented a single adult male (Douglas 1990).

The most significant archaeological site in the vicinity of the current project area was identified by Hammatt and Shideler (1991). During trenching for the installation of waterlines along Dole Street near Kānewai Park, the remains of at least 18 individuals were recovered along with midden deposits and several artifacts. The site was designated as SIHP # 50-80-14-4266. Radiocarbon dates taken from two samples indicate the site likely dates to the 15th century AD. The authors noted: "It seems probably that the locus of these burials contains more interments and it is recommended that any agencies involved in future subsurface work in the immediate vicinity consult with the appropriate agencies in advance" (Hammatt and Shideler 1991: i).

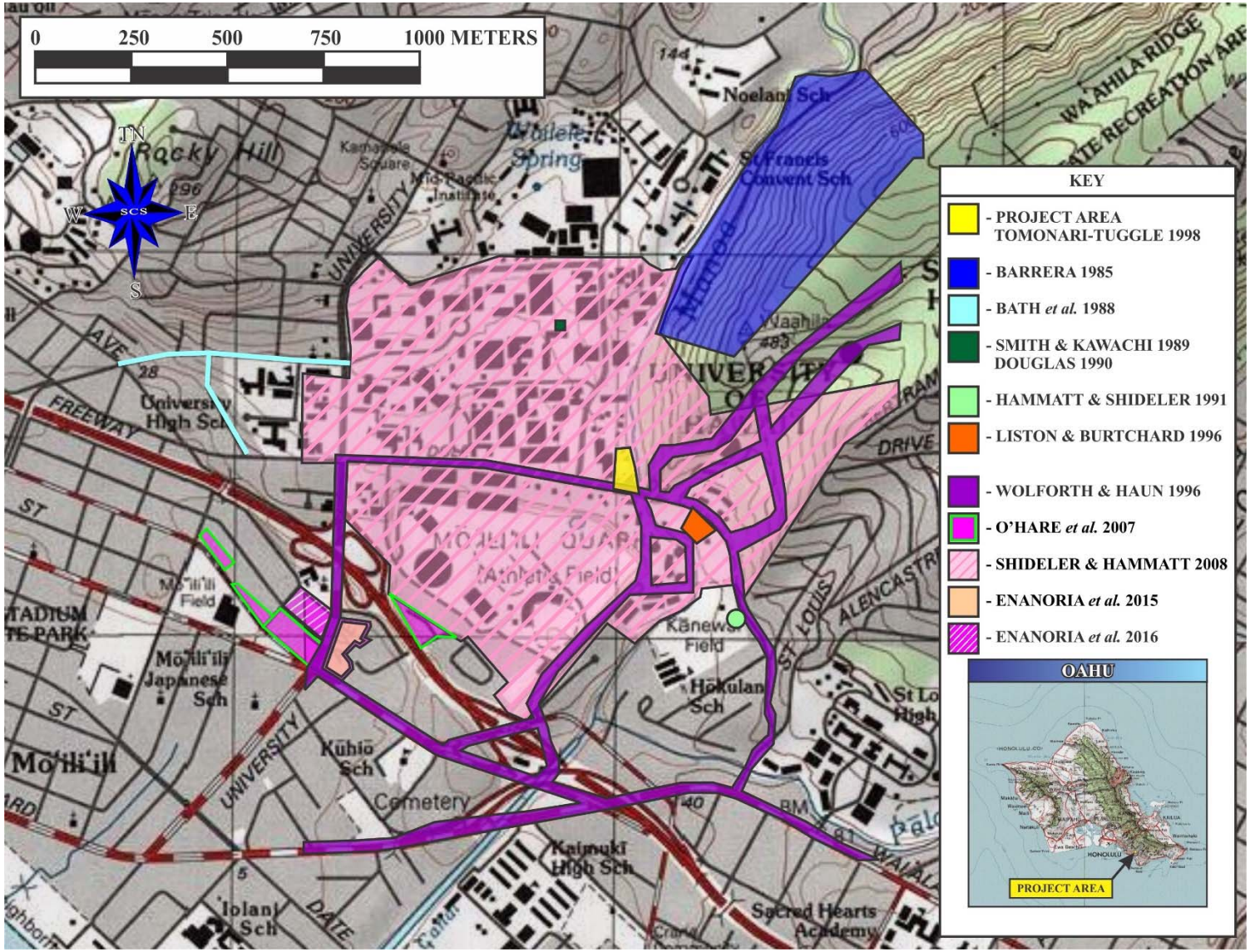

Figure 12: Previous archaeological studies conducted within and in the vicinity of the project area.

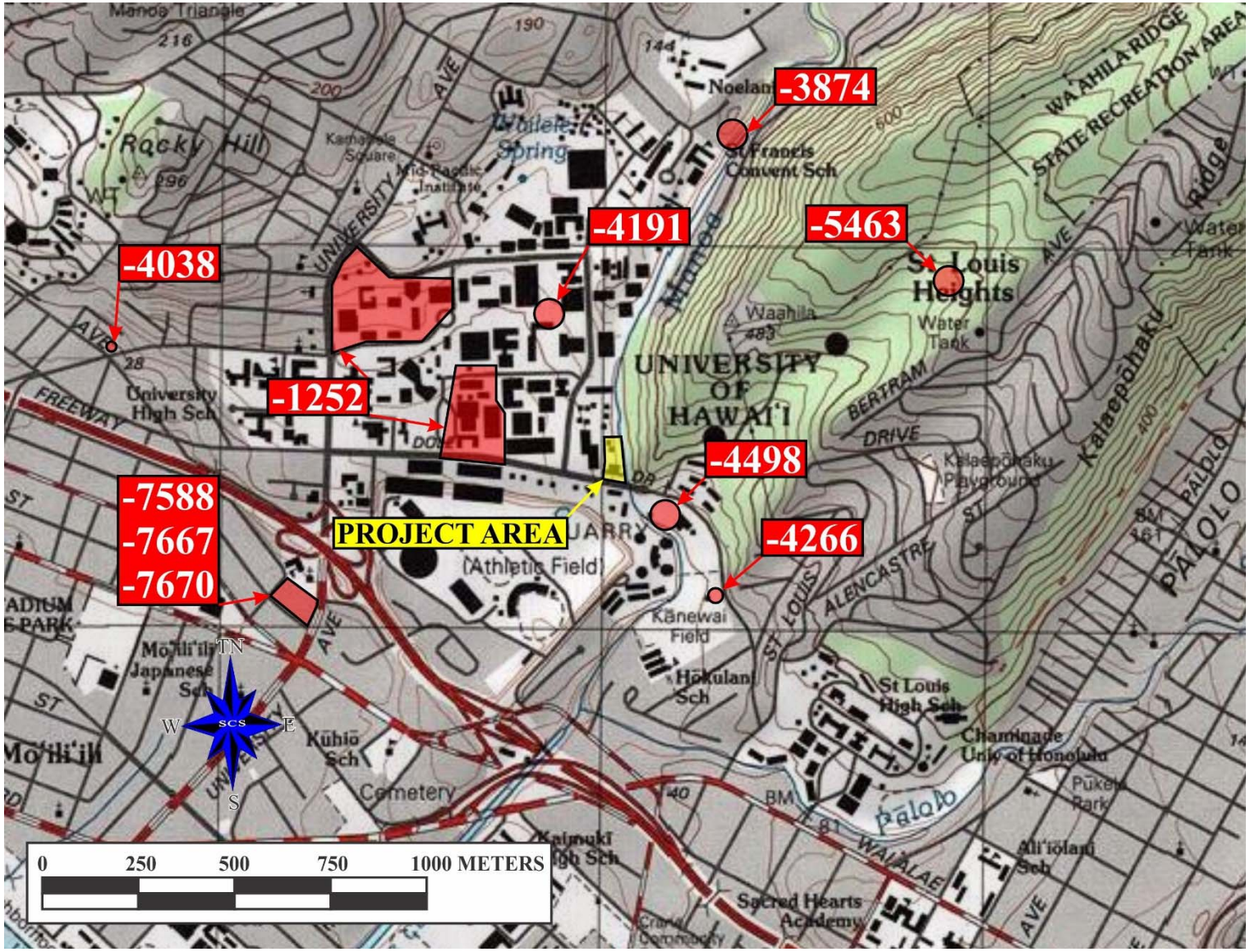

Figure 13: Historic properties identified in the vicinity of the project area.

Table 1: Previous archaeological studies conducted in the vicinity of the project area.

Reference	Location	Description and Results (SIHP # 50-80-14-XXXX)
Ching 1968	Former Magoon property given to UH Mānoa	A possible unnamed heiau consisting of two rock structures were observed. One rock structure was a linear rock mound and the other rock structure was a platform. Site was designated as SIHP # -3874.
Barrera 1985	Mānoa Hillside	Documented an old road, no SIHP number assigned
Bath et al. 1988	2030 Wilder Avenue	Partially disturbed burial removed, designated as SIHP # -4038
Kawachi 1988	Saint Francis High School campus	Identified multiple walls and terraces in a heavily vegetated area. No SIHP # assigned.
Smith & Kawachi 1989	UH Mānoa near Keller Hall	Identified human remains, designated as SIHP # -4191
Douglas 1990	UH Mānoa near Keller Hall	Identified human remains from previously identified SIHP # -4191, determined to represent a single adult male
Hammatt & Shideler 1991	Kānewai	18 human skeletal remains found on Dole Street, designated as SIHP # -4266
Liston & Burtchard 1996	Hawaiian Studies Institute	Paleoenvironmental sampling and stratigraphic profiling at Mānoa Stream identified a prehistoric irrigation system carbon dated to AD 1443-1681 at Kapapa *lo'i*, Kānewai, designated as SIHP # -4498
Wolforth & Haun 1996	Mānoa	Identified numerous historic buildings within the UH Mānoa campus, including the Kānewai Cultural Garden (SIHP # -1252) and agricultural terraces and walls along Waʻahila Ridge (SIHP # -5463)
Tomonari-Tuggle 1998	National Marine Fisheries Service Laboratory (current project area)	Archaeological Assessment, recommended subsurface testing or archaeological monitoring for future ground-disturbing activities within the project area
O'Hare et al. 2007	Kamehameha Schools University parcels and Varsity Theatre	A literature review and field inspection identified previous agricultural use of the area
Shideler & Hammatt 2008	UH Mānoa Campus	A literature review and field inspection identified previously recorded sites within the campus [SIHP #s -1252 (architectural sites), -4191 (burial), -4498 (agricultural features), the Koana Cave, and the site of Hipawai Heiau].
Enanoria et al. 2016	Varsity Parcels	Identified wetland soil deposits (SIHP #s -7588 and -7667) and early to mid-twentieth century structural remnants (SIHP # -7670)

Also significant were data recovery excavations undertaken at the nearby Kānewai Cultural Garden and adjacent to the Center for Hawaiian Studies facilities (Liston and Burtchard 1996). A series of trenches revealed the presence of prehistoric irrigation features (SIHP -4498), as well as taro pollen identified within paleoenvironmental samples. Radiocarbon dating suggests that irrigation and use of this area began between AD 1443-1681. Stratigraphic profiles obtained were interpreted by the authors as showing that this area was used for agricultural purposes off and on well into the Historic Period.

In 1998, an archaeological assessment of the current project area was undertaken in advance of proposed renovations to the National Marine Fisheries Service building (Tomonari-Tuggle 1998). Although no excavations were carried out, the author concluded that the area could potentially contain subsurface archaeological features based on archival data and the findings of nearby archaeological studies. Additionally, geotechnical borings undertaken within the project area as part of an environmental assessment revealed material that could potentially be of a cultural origin, but the results were inconclusive.

In 2008, Cultural Surveys Hawaii conducted an archaeological literature review and a field inspection at various locations on the UH-Mānoa campus. This study identified recapitulated what was known about several sites, including SIHP-1252 (architectural sites), -4191 (burial), -4498 (agricultural features), the Koana Cave (no SIHP number assigned), and the site of Hipawai Heiau (McAllister Site 63; no SIHP number assigned) (Shideler and Hammatt 2008). The Koana Cave and Hipawai Heiau are located more than 0.8 km (0.5 mi.) from the project area. None of the noted sites were located within the current project area.

ARCHAEOLOGICAL FIELD METHODS

The archaeological field inspection was conducted for the UH-Mānoa Multi-Family Housing Project in April 2020 by SCS archaeologist Michael Woodburn, M.A. The field inspection was conducted under the supervision of Morgan E. Davis, M.A. (SCS principal investigator).

Field methods consisted of a pedestrian survey of the entire project area accompanied by digital photographs taken at multiple locations within and surrounding the project area. Archival research was also conducted at State Historic Preservation Division library in Kapolei to identify historic properties and previous archaeological research in the vicinity of the project area. All notes and digital photographs for this project are currently being curated at the SCS laboratory on O‘ahu.

RESULTS OF ARCHAEOLOGICAL FIELD INSPECTION

Fieldwork consisted of a 100% pedestrian survey of the project area for the purpose of identifying potential historic properties. Fieldwork was conducted in April 2020 by SCS archaeologist Michael Woodburn, M.A. under the supervision of Morgan E. Davis, M.A. (SCS principal investigator). Digital photographs were taken of various locations both within and surrounding the project area to provide complete documentation. The approximate locations and directions of all digital photographs taken are illustrated in Figure 14 with all digital photographs taken during the field inspection included as Appendix B.

The main feature of the project area is the two-story tall National Marine Fisheries Service (NMFS) building which was constructed in 1955 and fronts Dole Street. On both flanks of the two-story tall building's main entrance stairway are two basalt rock walls with cement adhesive. The front grounds of the building consist of landscaped grass, manicured hedgerows, a single plumeria tree, and at least one palm tree species. Located east of the two-story building on Dole Street is a small bridge, constructed in 1953, from which the Mānoa Stream can be observed. The Mānoa Stream functions as the eastern boundary of the project area.

Located west of the National Marine Fisheries Service building is a paved asphalt driveway that extends from Dole Street and heads toward the rear portion of the project area. This paved asphalt driveway is the project area's western boundary. A visually estimated 20 to 30 percent of the project area consists of a paved asphalt parking lot interspersed with small patches of grass, maintained or otherwise. The northern edge of the project area contains two annex buildings, both constructed in 1945, that are largely constructed of corrugated metal roofing and siding. Both annex buildings are bounded to the north by a Hawaiian Electric Company substation located on TMK: (1) 2-8-023:003. Located on the eastern edge of the project area is a near vertical embankment that drops down to the Mānoa Stream. Also present within the project area is a covered walkway leading from the two north annexes to the main NMFS building.

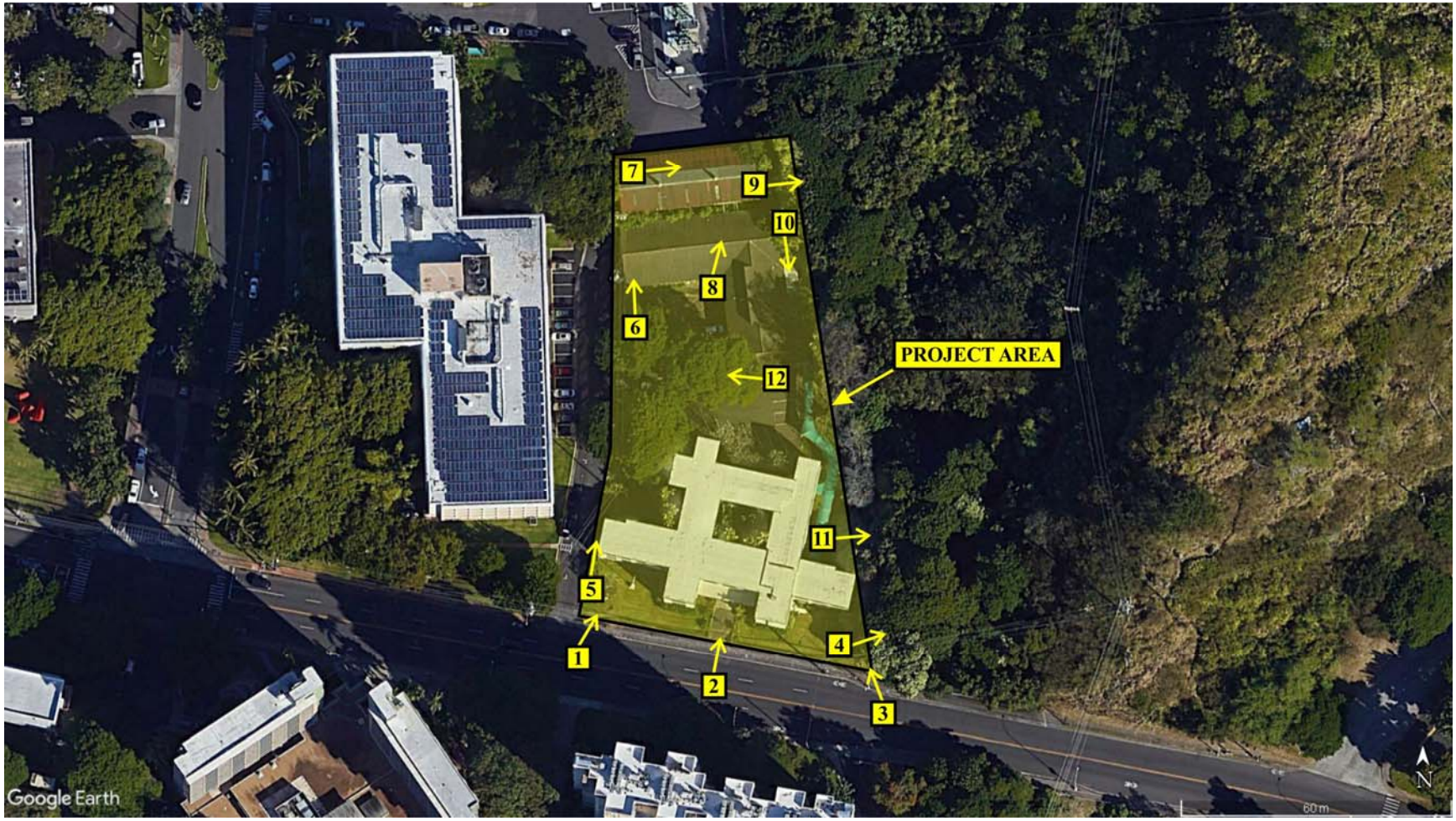

Figure 14: Google Earth (2020) image showing approximate location and direction of photographs taken during the field inspection.

SUMMARY AND CONCLUSIONS

Traditionally, the lands in Mānoa Valley were utilized for fishponds and taro cultivation. The valley once held several hundred fishponds extending a mile inland from the shore. By 1901, urbanization diminished the number of traditional fishponds in Mānoa Valley from several hundred to 14 (Cobb 1905). Taro cultivation continued well into the Historic period along with sugar cane, coffee, and a failed rice farming venture in 1882 (Thrum 1892:116). As early as 1889, the areas within and immediately *makai* of the project area were used as a stone quarry, known as Moʻiliʻili Quarry. Although multiple Land Commission Awards (LCA) are located to the south and north of the project area, only LCA 1748 includes the project area (see Figure 6). Land Commission Award 1748 consists of a 7.44-acre parcel of land in Kānewai and is bisected east-west by Dole Street. The north portion of LCA 1748 contains the current project area. Originally awarded to Ono in 1847, LCA 1748 was described solely as a house lot, containing three of Ono's houses and bounded by a fence (Waihona 2019). Documentation for LCA 1748 is provided as Appendix A. As the University of Hawaiʻi expanded, the land in the current project area became the site of the NMFS building and two annex buildings. The NMFS building and the two annex buildings are over 50 years old.

Previous archaeological studies conducted in the vicinity of the current project area yielded the discovery of several human burials, irrigation features, and the subsurface remnants of taro fields (Table 1). The most significant archaeological site in the vicinity of the project area was identified by Cultural Surveys Hawaii (CSH) in 1991 where the remains of at least 18 human burials, midden deposits, and several artifacts were documented along Dole Street near Kānewai Park. The site was designated as SIHP # 50-80-14-4266. Historical research and previous archaeological studies indicate that the area near and within the current project area was used throughout the Historic period for agriculture and/or scattered human habitation. Thus, there is a potential for subsurface archaeological cultural deposits and possibly human burials to exist within the current project area.

Given that the project area was occupied during the historical period and that no archaeological testing was conducted within the project area, an archaeological inventory survey (AIS) is recommended with subsurface testing since the current buildings are going to be demolished and replaced with the construction of the new building. It is also recommended that consultation with the State Historic Preservation Division (SHPD) concerning the archaeological testing occur prior to the start of the AIS project.

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APPENDIX A: LAND COMMISION AWARD 1748 DOCUMENTATION

Mahele Record: 01748

Claim Number:	01748
Claimant:	Ono
Other claimant:	
Other name:	
Island:	Oahu
District:	Kona
Ahupuaa:	Waikiki
Ili:	Kanewai

Apana:	1	Awarded:	1
Loi:	0	FR:	
Plus:		NR:	238v3
Mala Taro:	0	FT:	174v3
Kula:	0	NT:	500v3
House lot:	1	RP:	4972
Kihapai/Pakanu:	0	Number of Royal Patents:	1
Salt lands:	0	Koele/Poalima:	No
Wauke:	0	Loko:	No
Olona:	0	Lokoia:	No
Noni:	0	Fishing Rights:	No
Hala:	0	Sea/Shore/Dunes:	No
Sweet Potatoes:	0	Auwai/Ditch:	No
Irish Potatoes:	0	Other Edifice:	No
Bananas:	0	Spring/Well:	No
Breadfruit:	0	Pigpen:	No
Coconut:	0	Road/Path:	No
Coffee:	0	Burial/Graveyard:	No
Oranges:	0	Wall/Fence:	No
Bitter Melon/Gourd:	0	Stream/Muliwai/River:	No
Sugar Cane:	0	Pali:	No
Tobacco:	0	Disease:	No
Koa/Kou Trees:	0	Claimant Died:	No
Other Plants:	0	Other Trees:	0
Other Mammals:	No	Miscellaneous:	

Document Text

No. 1748, Ono
N.R. 238v3

The Land Commissioners, House of the Privy Council, Greetings: I, the undersigned, hereby state my claim for a house lot in the 'ili of the konohiki, Kalama, and Maneo is also konohiki of this house lot. My house lot is between the 'ilis of these konohikis. I got this house-lot in 1839. It is bounded on the north by the land of Nika, on the east and south by the land of Kalama, on the west by Maneo's land. This is what I have to tell you concerning my house lot claim.
ONO X, his mark
December 3, 1847, Kanewai

F.T. 174v3

No. 1748, Ono

Lehuanui, This is in Kanewai, Waititi, house lot, 3 houses of Ono's, fenced.

Mauka, stream & Kaluhinenui
Waialae, Kalama
Makai, Kauo
Honolulu, my land.

Claimant had this land from Kalama in time of Kinau, and has held it undisputed to this time.

Kawelo, confirmed the above.

N.T. 500v3
No. 1748, Ono, October 25, 1849

Lehuanui, sworn, I have seen his land at Kanewai, Waikiki.

1 house-lot, Ono has three houses, which are half enclosed and the boundaries are:
Mauka by Kaluahinenui
Waialae by Kalama
Makai by Kauo
Honolulu by my place.

Ono's place is from Kalama given before the year 1839; no one has objected to the present time.

Kawelo, sworn, Our testimonies are similar; no one has objected.

[Award 1748; R.P. 4972; Kanewai Manoa Kona; 1 ap.; 7.44 Acs]

01748 - No maps found.

Reference: | Doc: 2525 | Date Time: 12/12/2019 4:00:06 AM
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APPENDIX B: FIELD INSPECTION PHOTOGRAPHS

SPEED
LIMIT
25

B5

ZONE 09
PERMIT REQUIRED
6:30AM-4PM MON-FRI
EXCEPT STATE HOLIDAYS
ANY ZONE OR VISITOR
PERMIT REQUIRED
4PM-8PM MON-FRI
6:30AM-8PM SAT
EXCEPT STATE HOLIDAYS
SPECIAL EVENTS MAY CHANGE
THE ABOVE REQUIREMENTS
WHEN POSTED
UNIVERSITY OF
HAWAII AT MANOA
PARKING REGULATIONS
ENFORCED 24 HOURS DAILY
THE UNIVERSITY SHALL NOT BE
RESPONSIBLE FOR ANY CLAIMS
FOR DAMAGES OR LOSS TO
VEHICLES CONNECTED WITH
ANY VEHICLES OR CONTENTS
THEREON WHICH PARKED OR
OPERATED ON THE CAMPUS
VEHICLES IN VIOLATION SUBJECT
TO CITATION AND/OR TOW AT
REGISTERED OWNER'S EXPENSE
ACE TOWING

HAWAII
STJ 276
ALOHA STATE

B10

B11

B12

APPENDIX D

Reconnaissance Level Surveys

DRAFT

RLS Form 2/2018

State Historic Preservation Division

Reconnaissance Level Survey – Survey Form

Instructions: Submit this completed form with the completed SIHP request form and 6E Filing Fee Form **electronically** to: dlnr.intake.shpd@hawaii.gov

For additionally guidance on completing this form, please see the Architecture Branch Survey Guidelines available on the SHPD website.

---

1. **Review Type: Indicate which review process this survey was requested under**

   HRS 6E-08, HAR 13-275 HRS 6E-42, HAR 13-284

2. **Project Information: Indicate the document in which this survey was requested**

   2.1) Log No. [e.g. 2017.1234]

   2.2) Doc No. [e.g. 1708MB27]

   2.3) Other:

3. **Contact Information:**

   3.1) Name: 3.2) Company:

   3.3) Street Address:

   3.4) County: 3.5) State: 3.6) Zip Code:

   3.7) Phone: 3.8) Email:

4. **Property Location:**

   4.1) TMK [e.g. (3) 1-2-003:004]:

   4.2) Street Address:

   4.3) County: 4.4) State: 4.5) Zip Code:

5. **Property Classification:**

   5.1) Ownership:

   Private Public

   5.2) Classification

   Building District Site Structure Object

6. **Property Function:**

   6.1) Current:

   6.2) Historic:

7. Property Description:

7.1) Date of Construction:

7.2) Provide a description of the property, including the character defining features, summarize alterations to the property, and provide an evaluation of the property's integrity of materials, design, feeling, location, association, workmanship, and setting.

Annex I
Date of Construction: ca. 1951

Description
The one-story Annex I building is located behind the Laboratory and Administrative building. It is L-shaped with a northern wing extending east west, and an eastern wing extending north south. The northeast corner of the building is inset, with a partially covered, fenced open area housing disused refrigeration equipment. The building has a gable roof with a shed roof monitor on the east wing that has fixed louver vents. It has a concrete slab foundation, and metal structural framing. Its roof is clad in corrugated cement panels, as are most of its walls. Two wall areas have different materials. At the western end of the north wing there is a lanai that is enclosed with extruded wire on three sides. The westernmost wall is mostly made up of extruded wire panels on a ceiling-mounted sliding track. The screen is split into two sections, one on the north, and one on the south with a chain link gate between the two. Each screen section slides inward, parallel to the north and south walls. A section of wall at the northeast of the building is covered in stucco, and an additional portion of wall, in the refrigeration equipment inset area, is bare concrete masonry unit construction. Both of these wall portions appear to be alterations to the original walls. Additionally, at the south end of the east wing, a decorative breezeblock wall has been added to the exterior of the corrugated cement wall. This material is also used to create a screened porch entryway on this end of the building. Along the eastern side of the eastern wing is a screened lanai that overlooks Mānoa Stream. The north wing of the building has doors on both the north and south side, as well as one visible in the western wall between the building and lanai. The north personnel door is corrugated metal, the west personnel door is corrugated cement, the south personnel door is flush metal, and the two south equipment/large doors are extruded metal screen double-hinged doors with extruded screen transoms. The east wing has one door on the west side, and two doors on the south side. The west side door is a flush metal personnel door, which appears to have been inserted into the opening for a third equipment door. One south door is centered on the façade, and is an aluminum frame storefront type door with full side lights. The second door is at the extreme east of the façade, behind a chain link gate, and is a non-historic screen door. The building's windows are all located on the south and west walls of the north and east wings, respectively. These are single fixed pane, aluminum frame sash, single on the south wall, and double on the west.

Integrity
Annex I retains integrity of location, design, setting, and workmanship. Integrity of materials is slightly diminished due to the stucco and CMU portions on the rear walls. Integrity of feeling and association are somewhat diminished by the change in use of the three buildings; however, Annex I retains its spatial and visual relationship to both of the other associated buildings on the property.

Historical Background
Tax records do not include a construction date for this building. The first record found of its existence is a 1952 aerial photography. (It was not shown on a 1953 USGS map, however). Tax office records for the parcel indicate an increase in the value of improvements between 1951 and 1952 by nearly $43,000, which supports the estimated 1951 construction date. In the 1960 account of the complex, this building was described as providing additional space for "biological collections, six large concrete aquaria for experimental purposes, a cold storage refrigeration plant, a garage, and a work shop." (Honolulu Biological Laboratory. Past (1949-1958), Present (1959), Future (1960-). Hawaii Area Office: Department of the Interior. April, 1960.) The garage appears to be the western end of the northern wing, although by this time the third building in the complex had also been completed, and may have been used for garage space. Its overall footprint today is the same as shown in the 1952 aerial photograph, indicating that any alterations did not add significant floor space to the building.

Annex II (Garage)
Date of Construction: ca. 1955

Annex II is rectangular in plan, with long sides on the north and south. It is one story, with a side-gable roof that has close eaves on three sides. The eaves are extended on the north side to protect the doors that stretch along this side; there are a series of three mechanical vents at the roof ridge, and large, square, galvanized metal gutters and downspouts. The building has a concrete slab foundation that varies in height due to the slight slope of the property. This means that the entries on the north side of the building are at ground level, and above ground level at the south side. The building's structure is metal frame. Its walls and roof are entirely clad in corrugated metal panels. Doors are located on all four sides of the building. On the east and west gable ends, the doors are flush metal personnel type, and are reached by concrete walks or pads. On the south, the single personnel door is made of a corrugated metal panel on hinges, with a steep concrete ramp that extends to the rear of Annex I. The north doors are primarily vehicular, with one flush metal personnel door inset into one of these vehicular doors near the east end. The corrugated metal vehicular doors open by sliding along a series of tracks. Above these doors is a continuous opening that may have contained extruded screen, but is now entirely open. The building has two types of windows. The first are located on the west end and south side, and are steel-framed nine-light windows with awning operation in the top six lights. The second type are located on the east end and southeast side, and are narrow aluminum-frame sash of unknown operation. There are also square fixed louver vent panels at each gable end, movable louver vent panels on the east end and southeast side, and a galvanized vent stack above the east end window.

Integrity
Annex I retains integrity of location, design, materials, setting, and workmanship. Integrity of feeling and association are somewhat diminished by the change in use of the three buildings; however, Annex II retains its spatial and visual relationship to both of the other associated buildings on the property.

Historical Background
This building was the last of the three buildings on the property to be constructed. It is not mentioned in contemporaneous articles or accounts of the fishery complex, but appears in maps/aerial images by 1959. Tax office records for the parcel indicate an increase in the value of improvements between 1955 and 1956 by more than $55,000, indicating a possible construction year of 1955. The building appears to have had no additions, or significant alterations since its construction. A few minor alterations to the building appear to be the added corrugated metal door with a concrete ramp on the south side, and the electrical conduits that connect the building to the nearby building to the south. A window may have been removed and filled with a corrugated metal panel on the east end; however the size of the fill is not the same as any existing window on the building, and therefore may be a patch.

8. Eligibility Recommendation:

8.1) Provide a recommendation of eligibility to the Hawai‘i Register of Historic Places including applicable criteria and areas of significance.

Sources

9. Attach Photographs: provide sufficient photographs to illustrate the property's main features. At a minimum provide the following:

Quantity	Description
1-2	Street view(s) of the resource and setting
1-2	Main Facades
1-2	interior photos(s) if applicable

10. Attach Map showing the location of the property

CHECKLIST

Reconnaissance Level Survey Form (this form)

Photographs

Map

Filing Fee Form

SIHP Request Form

View of the former Laboratory and Administration Building fronting Dole. (Source: MASON)

View of the former Laboratory and Administration Building front entrance. (Source: MASON)

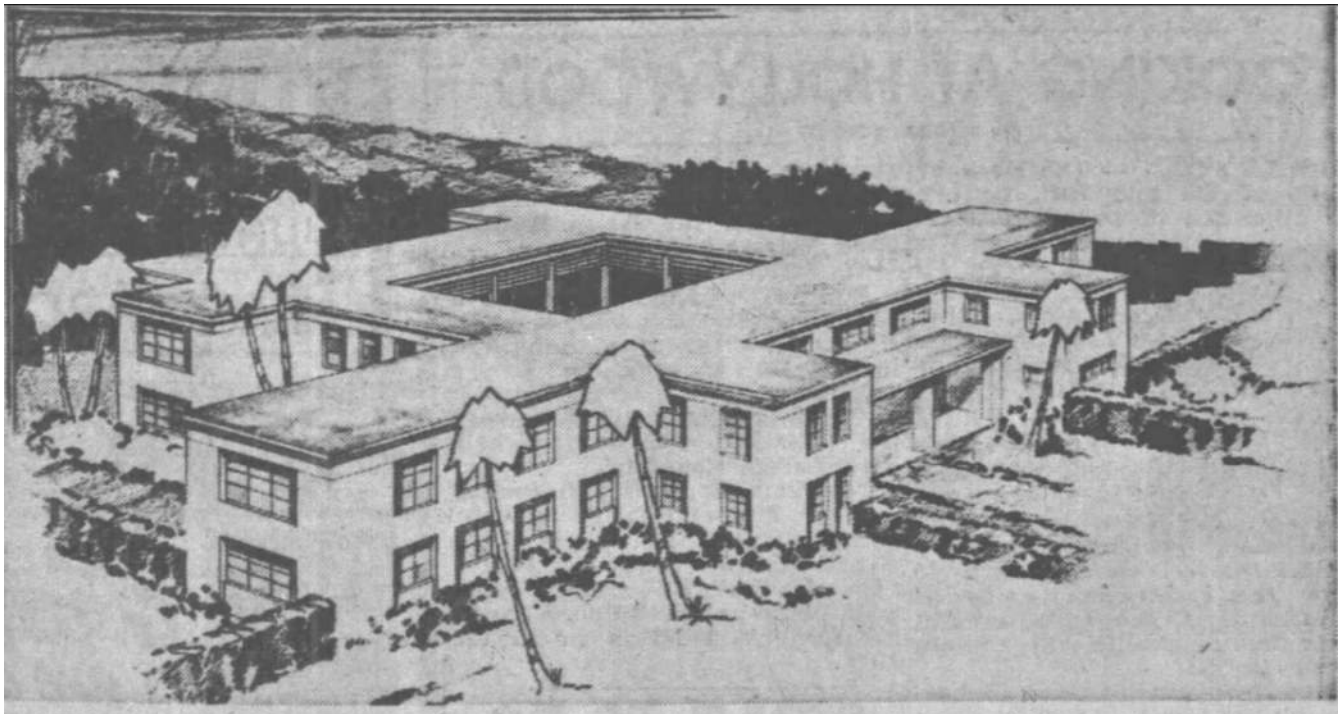
Covered walkway near front entrance with peeling paint. Source: MASON)

Original stair and rock wall at front entrance. (Source: MASON)

Rear view of former Laboratory and Administration Building. (Source: MASON)

Rear walkway (Source: MASON)

In-filled windows at front. (Source: MASON)



FISHERIES STUDY HEADQUARTERS—This modern fireproof building will be constructed on the University of Hawaii campus to serve as administrative headquarters for the Pacific Ocean fishery investigation now being conducted by the U. S. department of interior's division of wildlife. Bids for the construction, expected to cost nearly $250,000, will be opened June 15. Headquarters for the study, which will operate three ocean-going vessels as well as extensive laboratory facilities, will move here from San Francisco as soon as the building is completed. Guy N. Rothwell of Honolulu is the architect.

Rendering of former Laboratory and Administration Building by Rothwell. (Source: Honolulu Advertiser, May 18, 1949. P. 7.)

View of the former Laboratory and Administration Building ca.1960. (Source: USFWS, Honolulu Biological Laboratory, Past (1949-1958), Present (1959) Future (1960-), 1960.)

Annex I Southwest sides showing screened west end monitor vents and double screen doors

Annex I South end showing main entry with decorative breezeblock walls and entry porch.

Annex I, north side showing corrugated cement wall panels and screened ventilation strip

Annex I, west end showing screened area with sliding screen doors.

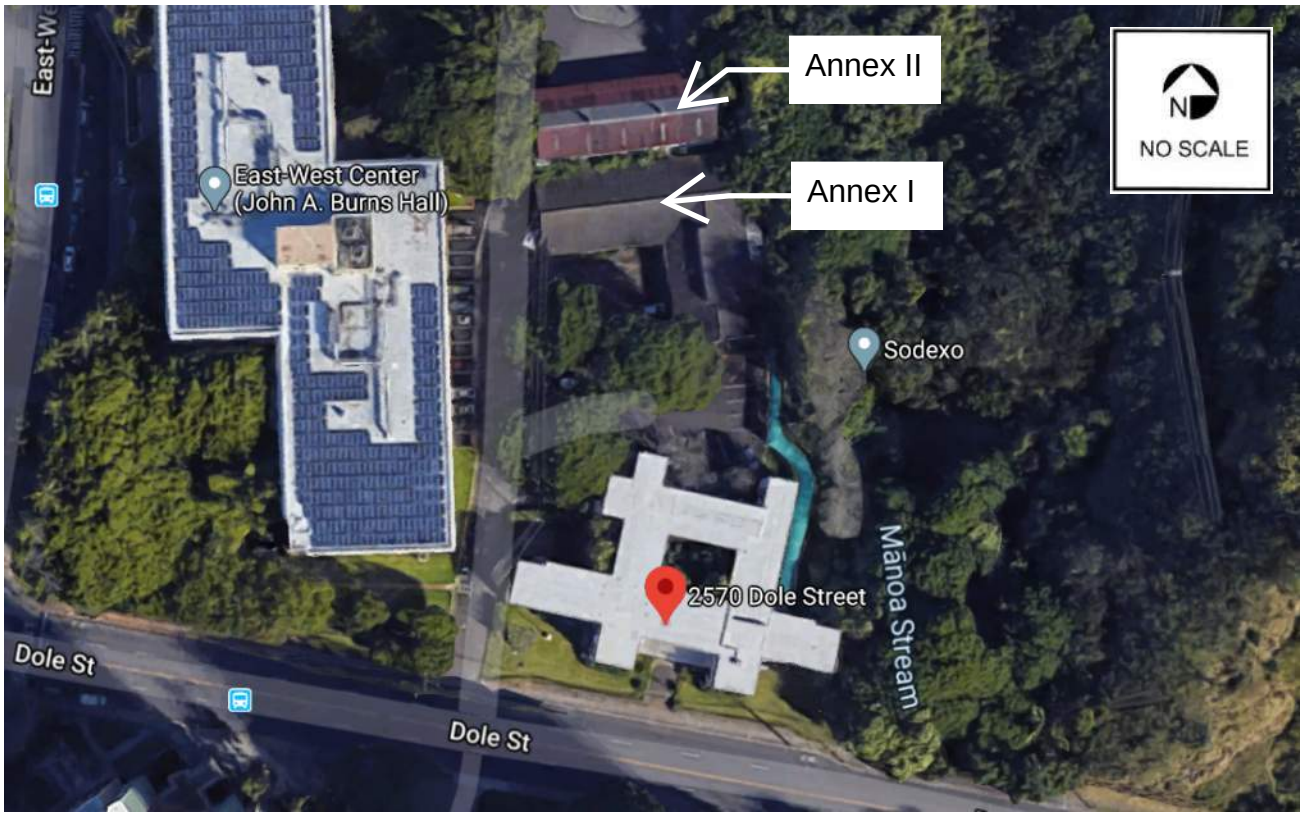
Annex I, entry to east side screened lanai showing breezeblock and chain link gate.

Annex II showing north side sliding vehicular doors with inset personnel door.

Annex II showing north side sliding vehicular doors with inset personnel door.

Annex II, south side, showing steel-frame windows and electrical connection to Annex I.

Annex II, east end showing flush entry door and aluminum frame window.



Map: Location of former Laboratory and Administration Building,
Annex I and Annex II, 2570 Dole Street.

APPENDIX E

Traffic Impact Report

Traffic Impact Report

University of Hawaii Design-Build Multifamily Mixed-Use Project

Prepared for:
Belt Collins Hawaii, LLC

Prepared by:
Wilson Okamoto Corporation

July 2020

TRAFFIC IMPACT REPORT

FOR THE

UNIVERSITY OF HAWAII
DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

Prepared for:

Belt Collins Hawaii LLC
2153 North King Street, Suite 200
Honolulu, HI 96819

Prepared by:

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Ref #10551-01

July 2020

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I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the University of Hawaii Design-Build Multifamily Mixed-Use Project (hereafter referred to as the "UHM Multifamily development") located near the southeast corner of University of Hawaii in Manoa on the island of Oahu. The proposed project is one of two public-private partnership (P3) developments initiated by the University of Hawaii at Manoa (UHM) to facilitate the development of additional student and faculty housing facilities on campus. The proposed UHM Multifamily development entails the redevelopment of the former National Oceanic and Atmospheric Administration (NOAA) site into a new mixed-use development that is expected to include residential, commercial, and child care uses for UHM faculty and students. It should be noted that the P3 developments including the UHM Multifamily development is permitted under an amendment to the 2007 Long Range Development Plan (LRDP) 2009 Plan Review Use (PRU) and identified as part of the UHM 2019 LRDP Update, a planning document which outlines the capital improvements for the university for the next 10 years. However, the P3 developments are being considered separately from the LRDP for the purpose of permitting, with traffic assessments prepared separately for those developments.

B. Scope of Study

This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposing site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.

7. Recommendations of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

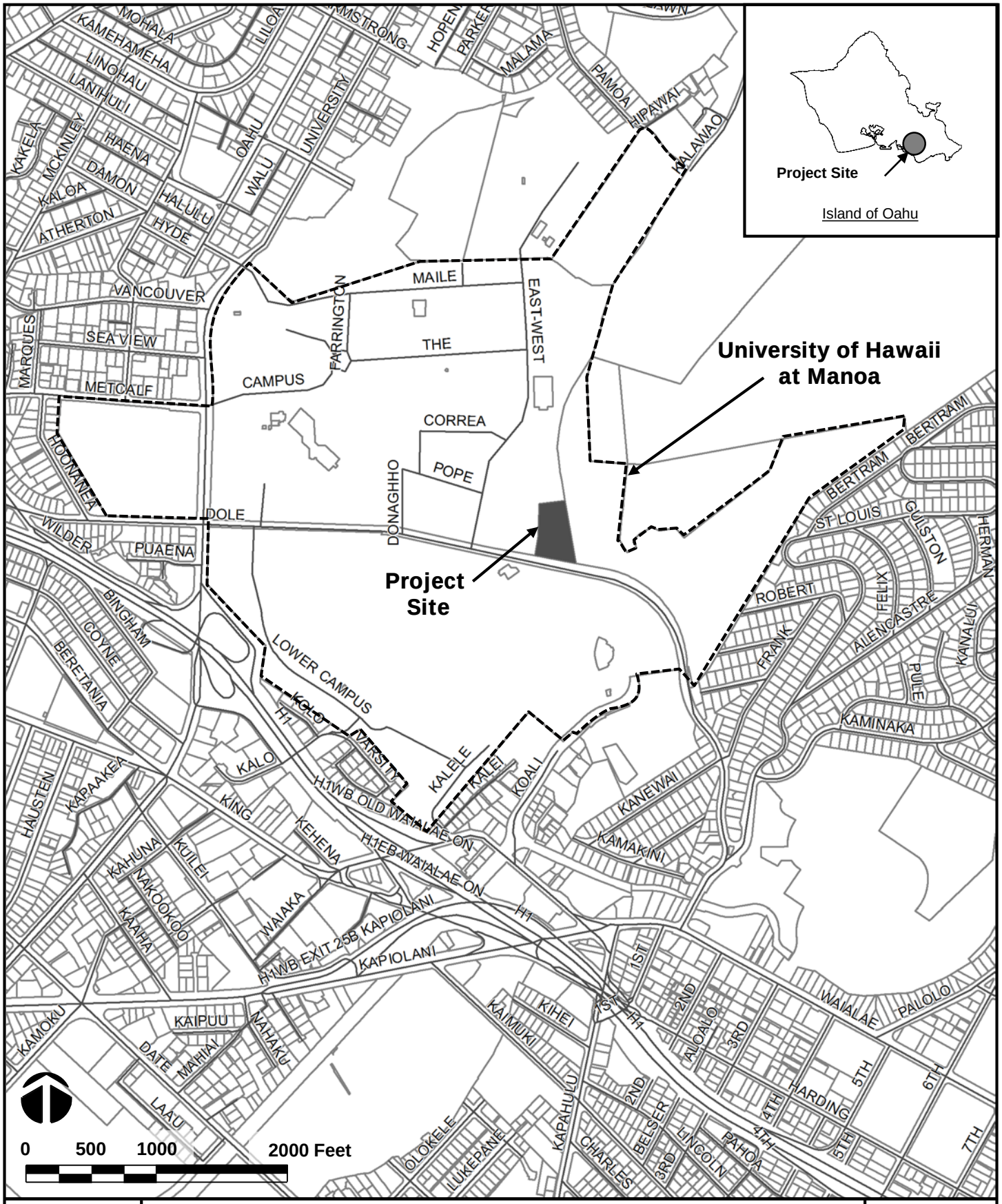
The existing site for the proposed UHM Multifamily development is located on the southeast corner of the upper campus to the University of Hawaii in Manoa on the island of Oahu (see Figure 1). The project site is bounded by Dole Street to the south, the Manoa Stream to the east, and university uses to the north and west. The project site is further identified as Tax Map Key (TMK): 2-8-023: 009. Access to the project site is expected to be provided via driveways off East-West Road and Dole Street.

B. Project Characteristics

The proposed project entails the redevelopment of the former NOAA building into a new mixed-use development that will include the following:

- 400 multifamily units
- ~2,000 sf of commercial uses
- Child care uses for ~128 students

Parking for the day care and restaurant uses is expected to be provided on-site with a limited number of short-term loading/unloading stalls provided for the development's residential uses. Long-term parking will not be provided for the residential uses since residents are primarily expected to be students and faculty of the university. Access to the project site will be provided via internally connected driveways off Dole Street and East-West Road. Primary access to the project site will be provided via an existing two-way driveway off Dole Street. Secondary access is expected to be provided via an existing two-way driveway off East-West Road that currently serves an adjacent university parking lot. Although most vehicles accessing the project site are expected to utilize the Dole Street driveway, vehicles associated with the child care uses are expected to enter via the Dole Street driveway and exit via the East-West Road driveway. The proposed development is expected to be completed and occupied by the Year 2025. Figure 2 shows the proposed project site plan.



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DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

LOCATION MAP AND VICINITY MAP

FIGURE 1

UNIVERSITY OF HAWAII DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

PROPOSED SITE PLAN

FIGURE 2

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III. EXISTING TRAFFIC CONDITIONS

A. Area Roadway System

In the vicinity of the project site, Dole Street is a predominantly four-lane, two-way roadway generally oriented in the east-west direction. Near the southwest corner of the project site Dole Street intersects East-West Road. At this signalized intersection, the eastbound approach of Dole Street has two lanes that serve left-turn and through traffic movements while the westbound approach has two lanes that serve through and right-turn traffic movements. East-West Road is generally oriented in the north-south direction providing access through the upper campus of the university. At the intersection with Dole Street, the southbound approach of East-West Road has an exclusive left-turn lane and an exclusive right-turn lane.

West of the intersection with East-West Road, Dole Street intersects Lower Campus Road. At this signalized T-intersection, the eastbound approach of Dole Street has two through lanes and an exclusive right-turn lane while the westbound approach has two lanes that serve left-turn and through traffic movements. Lower Campus Road is generally oriented in the north-south direction that serves as the main access road through the lower campus of the university. At the intersection with Dole Street, the Lower Campus Road approach has exclusive turning lanes.

East of the intersection with East-West Road, Dole Street intersects St. Louis Drive. At this unsignalized intersection, the eastbound approach of Dole Street has an exclusive left-turn lane and an exclusive right-turn lane. St. Louis Drive is generally oriented in the north-south direction providing access to/from Waialae Avenue. At the intersection with Dole Street, the northbound approach of St. Louis Drive has an exclusive left-turn lane and one through lane, while the southbound approach has one through lane and an exclusive right-turn lane.

B. Traffic Volumes and Conditions

1. General

a. Field Investigation

Field investigations were conducted on April 18-23, 2019 which consisted of manual turning movement count surveys during the

morning peak hours between 6:00 AM and 9:00 AM, and the afternoon peak hours between 3:00 PM and 6:00 PM at the following intersections:

- Dole Street and Lower Campus Road
- Dole Street and East-West Road
- Dole Street and St. Louis Drive

Appendix A includes the existing traffic count data.

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual" (HCM), Transportation Research Board, 2000, and the "Synchro" software, developed by Trafficware. It should be noted that the HCM 2010 methodology is available with the Synchro software; however, analysis conducted using that methodology is unable to accommodate all the exclusive and shared-lane use configurations in the study area. As such, for the purpose of this report, the HCM 2000 methodology output was used. The analysis is based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic.

LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing ideal or free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions.

"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity. The LOS definitions are included in Appendix B.

2. Existing Peak Hour Traffic

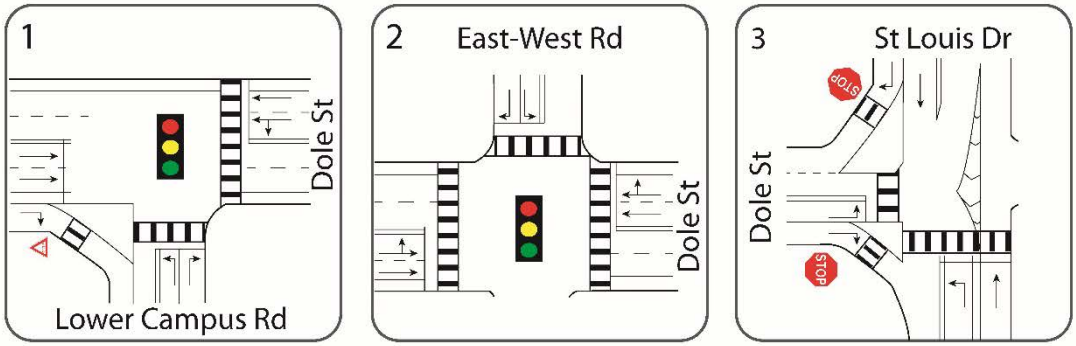
a. General

Figures 3 and 4 show the existing lane uses and peak traffic volumes. The AM peak hour of traffic generally occurs between 7:00 AM and 8:00 AM, while the PM peak hour of traffic generally occurs between 4:15 PM and 5:15 PM. The analysis is based on these peak hour time periods for each intersection to identify the traffic impacts resulting from the proposed project. LOS calculations are included in Appendix C.

b. Dole Street and Lower Campus Road

At the intersection with Lower Campus Road, Dole Street carries 1,046 vehicles eastbound and 648 vehicles westbound during the AM peak period. During the PM peak period overall traffic volumes are less with 1,048 vehicles traveling eastbound and 468 vehicles traveling westbound. The eastbound and westbound approaches of Dole Street operate at LOS "A" during both peak periods. Traffic queues occasionally formed on the Dole Street approaches of the intersection with the most significant queueing observed during the PM peak period. Average queue lengths of 3-4 vehicles were observed on the eastbound approach while average queue lengths of 5-7 vehicles were observed on the westbound approach during the same peak period. Field observation indicates that queues formed along Dole Street from the downstream intersection with University Avenue typically extended through this intersection.

Lower-Campus Road carries 73 vehicles northbound during the AM peak period and 504 vehicles northbound during the PM peak period. The Lower-Campus Road approach operates at LOS "B" during both peak periods. Traffic queues occasionally formed on this approach with the most significant queueing observed during the PM



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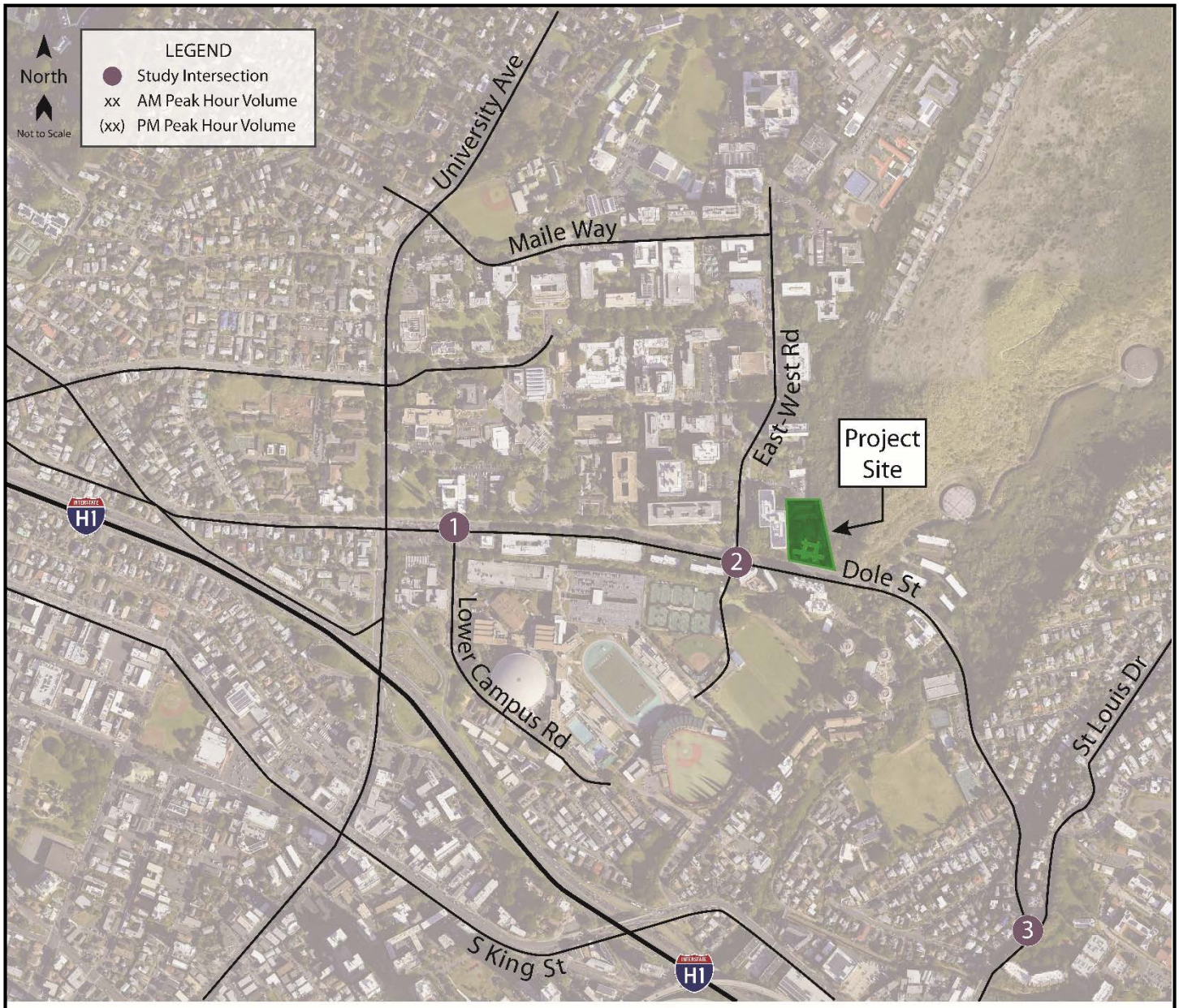
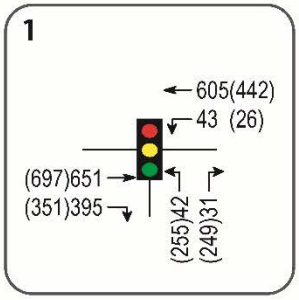
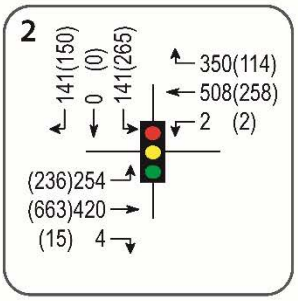
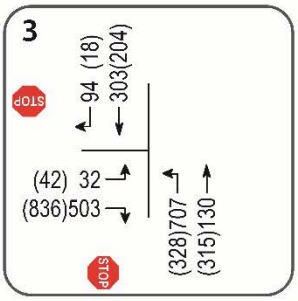
EXISTING LANE CONFIGURATIONS

FIGURE 3









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EXISTING PEAK HOURS OF TRAFFIC

FIGURE 4

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peak period. Average queue lengths of 4-6 vehicles were observed during this peak period. As previously discussed, traffic queues at this intersection are influenced by the queues formed along Dole Street at the downstream intersection with University Avenue.

Pedestrian crossings are provided across Dole Street on the east side of the intersection as well as across Lower Campus Road on the south side of the intersection. During the AM peak period, 123 pedestrians were observed crossing Dole Street on the east side of the intersection, while 20 pedestrians were observed crossing the Lower Campus Road on the south side of the intersection. During the PM peak period, 146 pedestrians were observed crossing Dole Street on the east side of the intersection while 95 pedestrians were observed crossing Lower Campus Road on the south side of the intersection.

c. Dole Street and East-West Road

At the intersection with East-West Road, Dole Street carries 678 vehicles eastbound and 860 vehicles westbound during the AM peak period. During the PM peak period, the overall traffic volume is lower with 914 vehicles traveling eastbound and 374 vehicles traveling westbound. The eastbound approach operates at LOS "A" and LOS "B" during the AM and PM peak periods, respectively while the westbound approach operates at LOS "B" and LOS "C" during the AM and PM peak periods, respectively. Traffic queues formed occasionally on the eastbound and westbound approaches of the intersection with average queue lengths of 4-6 vehicles observed during the AM peak period and average queue lengths of 3-5 vehicles during the PM peak period.

East-West Road carries 284 vehicles southbound during the AM peak period and 418 vehicles during the PM peak period. The northbound approach operates at LOS "C" and LOS "B" during the AM and PM peak periods, respectively. Traffic queues occasionally

formed on the East-West Road approach of the intersection with the most significant queuing observed during the PM peak period. Average queue lengths of 4-5 vehicles were observed during that peak period.

Pedestrian crossings are provided across Dole Street on the east and west sides of the intersection as well as across East-West Road on the north side of the intersection. During the AM peak period, 45 pedestrians and 104 pedestrians were observed crossing on the east and west sides of the intersection, respectively, while 20 pedestrians were observed crossing East-West Road on the north side of the intersection. During the PM peak period, 99 pedestrians and 285 pedestrians were observed crossing the east and west sides of the intersection, respectively, while 21 pedestrians were observed crossing East-West Road on the north side of the intersection.

d. Dole Street and St. Louis Drive

At the intersection with St. Louis Drive, Dole Street carries 535 vehicles eastbound during the AM peak period and 878 vehicles during the PM peak period. The eastbound approach operates at LOS "D" and LOS "E" during the AM and PM peak periods, respectively. Traffic queues occasionally formed on the eastbound approach of the intersection with average queue lengths of 6-8 vehicles observed during both peak periods. Field observation indicates that the high volume of right-turning vehicles from the stop-controlled approach contribute to the low levels of service at this intersection.

St. Louis Drive carries 837 vehicles northbound and 397 vehicles southbound during the AM peak period. During the PM peak period the overall traffic volume is lower with 643 vehicles traveling northbound and 222 vehicles traveling southbound. The northbound left-turn movement operates at LOS "B" and LOS "A" during the AM and PM peak periods, respectively. Traffic queues occasionally

formed on the northbound approach of the intersection with the most significant queueing observed during the AM peak period. Average queue lengths of 4-5 vehicles were observed on the northbound approach during that peak period.

Pedestrian crossings are provided across Dole Street on the west side of the intersection, as well as across St. Louis Drive on the south side of the intersection. During the AM peak period, 18 pedestrians were observed crossing Dole Street on the west side of the intersection, while 30 pedestrians were observed crossing St. Louis Drive on the south side of the intersection. During the PM peak period, 4 pedestrians were observed crossing Dole Street on the west side of the intersection, while 17 pedestrians were observed crossing St. Louis Drive on the south side of the intersection.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 10th Edition," 2017. The ITE trip generation rates are developed empirically by correlating vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per student or 1,000 square feet of development. It should be noted that for the purpose of trip generation, the land use fast food restaurant was used to encompass the proposed commercial uses which are expected to include a coffee shop with grab-and-go food and beverage options. In addition, since the proposed residential uses are intended for students and faculty of the university, long-term parking stalls are not expected to be provided for residents. As such, the residential uses of the proposed project are not expected to generate external trips. The trip generation methodology developed by ITE also includes provisions for multi-

modal trips. Multi-modal trips are trips made utilizing non-motorized modes of travel such as walking and biking, as well as trips made using transit. Due to the proximity of the proposed project to the UHM campus, a significant portion of the trips to/from the site are expected to be walking or biking trips. In addition, the project site is served by established bus routes that may be accessed via pedestrian facilities along Dole Street and East-West Road. As such, the trips generated by the proposed project were adjusted to account for students using alternate modes of transportation. The modal split for trips generated by the project was based on the results of a transportation survey included in the Campus Transportation Demand Management Plan (2012) prepared for the University of Hawaii. Table 1 summarizes the trip generation characteristics related to the proposed project applied to the AM and PM peak hours of traffic.

Table 1: Adjusted Existing Peak Hour Trip Generation

FAST FOOD RESTAURANT (WITHOUT DRIVE-THRU) INDEPENDENT VARIABLE: 1,000 sf of development = 2.0		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	9
	EXIT	6
	TOTAL	15
PM PEAK	ENTER	8
	EXIT	8
	TOTAL	16
DAY CARE CENTER INDEPENDENT VARIABLE: Number of students = 128		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	16
	EXIT	14
	TOTAL	30
PM PEAK	ENTER	14
	EXIT	16
	TOTAL	30

Table 1: Adjusted Existing Peak Hour Trip Generation (Cont'd)

TOTAL		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	25
	EXIT	20
	TOTAL	45
PM PEAK	ENTER	22
	EXIT	24
	TOTAL	46

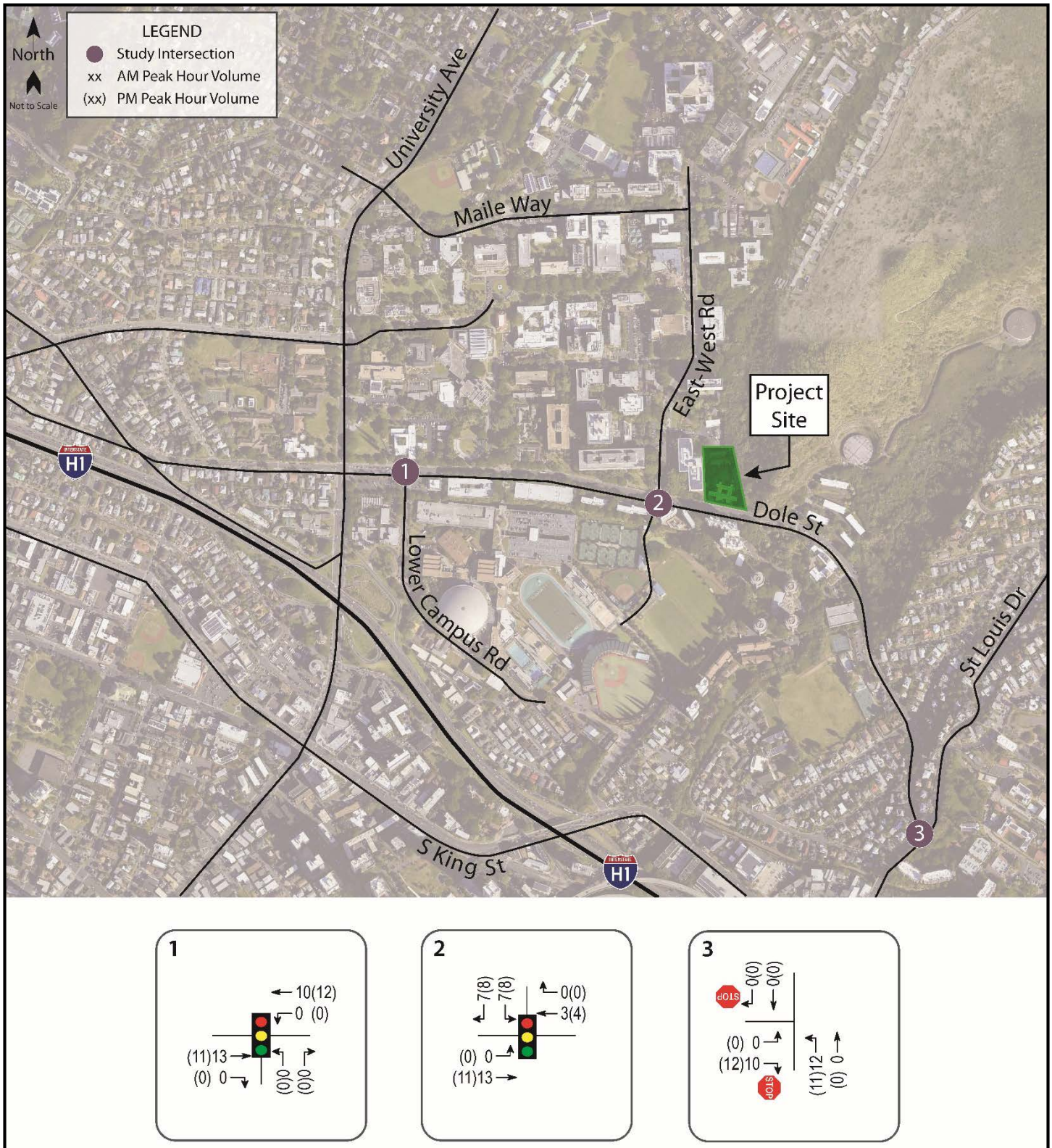
2. Trip Distribution

Figure 5 shows the distribution of site-generated traffic during the AM and PM peak periods. Access to the proposed project is expected to be provided via driveways off Dole Street and East-West Road with those accessing the child care center to enter via the Dole Street driveway and exit via the driveway off East-West Road. Those accessing the restaurant uses are expected to enter and exit via the driveway off Dole Street. The directional distribution of all site-generated vehicles was based upon the directional distribution of traffic along Dole Street. As such, 50% of trips were assumed to travel to/from the west with the remaining 50% to travel to and from the east during the AM peak period while 53% were assumed to travel to/from the west and 47% were assumed to travel to/from the east during the PM peak period. Site-generated trips were routed to and from the project site based on their assumed origin/destination and turning restrictions at the project driveways. It should be noted that the trip distribution for this project varies from the distribution assumed for the adjacent developments since the trips associated with the UHM Multifamily development are expected to be primarily localized trips. In addition, the project site is generally equidistant to major roadways to the east and west of the project.

B. Other Considerations

1. UHM 2019 Long Range Development Plan (LRDP) Update

The University of Hawaii 2019 Long Range Development Plan Update outlines the capital improvement plans for the university within a 10-year



UNIVERSITY OF HAWAII
DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

DISTRIBUTION OF SITE-GENERATED VEHICLES WITH PROJECT

FIGURE 5

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horizon. These improvements are expected to be implemented in two general phases and include the renovation of existing spaces, replacement of aging buildings with similar uses, consolidation of administrative offices, and construction of a new parking garage referred to as the Transportation Management Center (TMC). The majority of these improvements with the exception of TMC are intended to continue serving existing uses and as such are not expected to generate new trips in the project vicinity. The anticipated increases in traffic in the vicinity of the university are primarily expected to be a result of increases in student enrollment rather than directly from the proposed developments. Based on the "Traffic Impact Report for the University of Hawaii Long Range Development Plan" (hereafter referred to as the "LRDP TIR") prepared in June 2020, the university expects enrollment to increase in the next five years without or with the LRDP improvements and thereafter, to remain generally static until year 2029. As such, the trips associated with the enrollment increases were incorporated into the projected conditions.

In addition, new trips in the project vicinity are also expected to result from the proposed TMC. The new facility is expected to provide 1,000 additional parking stalls to the university's existing parking inventory along with accommodations for buses, shuttles, bikeshares, and carshares. Based on the LRDP TIR, the TMC is expected to generate 180 trips during the AM peak period and 310 trips during the PM peak period. The first phase of the LRDP is expected to be completed by Year 2024 with the second phase expected to be completed by Year 2029. The TMC is expected to be completed as part of Phase 1 and as such, the trips associated with the TMC were incorporated into the projected conditions.

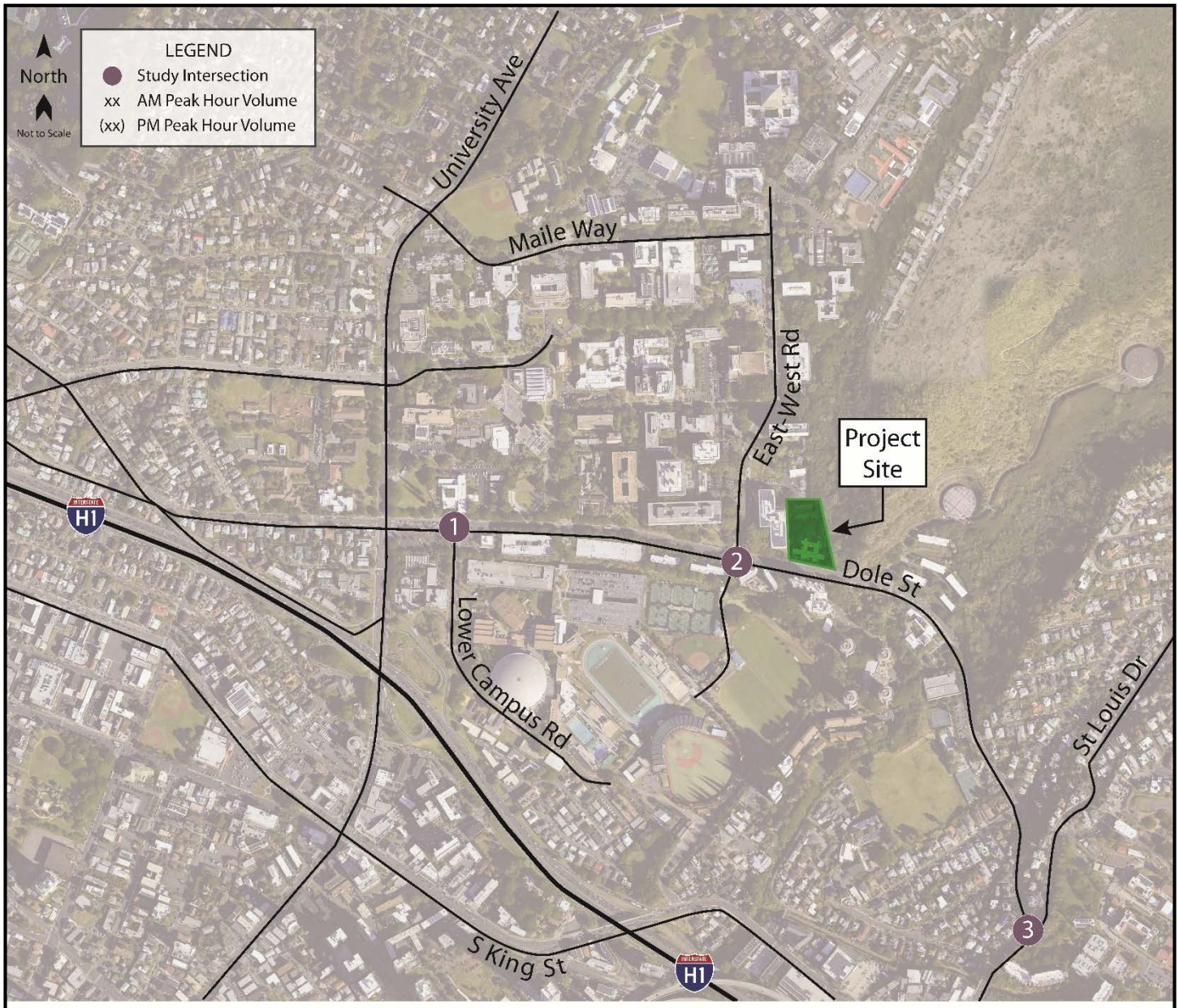
2. Atherton Mixed-Use Student Housing Innovation and Entrepreneurship Center

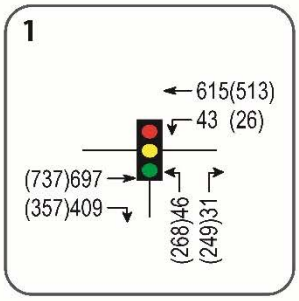
The "Atherton Mixed-Use Student Housing Innovation and Entrepreneurship Center" is the second P3 development initiated by UHM. Similar to the UHM Multifamily development, it also incorporated as an

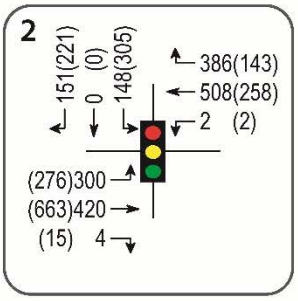
element of the overall LRDP; however it is being addressed separately for the purpose of permitting and as such, is included as a separate development in the vicinity. The project site is located at the northwest corner of University Avenue and Metcalf Street and entails the redevelopment of the existing Charles Atherton and Mary Atherton Richards Houses into mixed-use development that includes residential, educational, and restaurant uses. As included in the "Traffic Impact Report for the Atherton Mixed-Use Student Housing Innovation and Entrepreneurship Center" dated February 2020, the proposed project is expected to generate 24 trips during the AM peak period and 41 trips during the PM peak period. Access to the proposed project is expected to be provided via driveways off Metcalf Street and University Avenue with the project expected to be completed by Year 2023. As such, for the purpose of this report, the trips associated with the Atherton Mixed-Use Student Housing Innovation and Entrepreneurship Center were incorporated into the projected Year 2025 conditions.

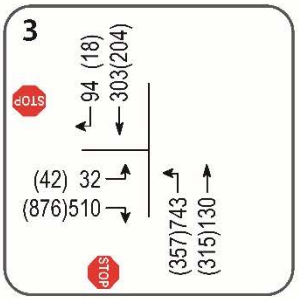
C. Total Traffic Volumes Without Project

The projected Year 2025 AM and PM peak period traffic volumes without the proposed UHM Multifamily development are shown in Figure 6 and summarized in Table 3. The analysis incorporates the trips associated with other developments in the project vicinity including the UHM LRDP and Atherton Mixed-Use Student Housing Innovation and Entrepreneurship Center. The existing levels of service are provided for comparison purposes. LOS calculations are included in Appendix D.









UNIVERSITY OF HAWAII
DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

YEAR 2025 PEAK HOURS OF TRAFFIC
WITHOUT PROJECT

FIGURE
6

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Table 3: Existing and Projected Year 2025 (Without Project) LOS Traffic Operating Conditions

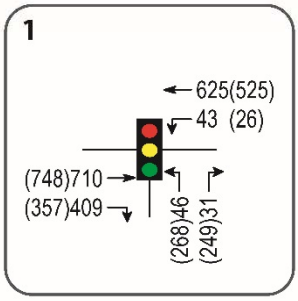
Intersection	Approach/ Critical Movement	AM		PM	
		Exist	Year 2025 w/out Proj	Exist	Year 2025 w/out Proj
Lower-Campus Rd/ Dole St	Eastbound	A	A	A	A
	Westbound	A	A	A	A
	Northbound	B	B	B	B
East-West Rd/ Dole St	Eastbound	A	A	B	B
	Westbound	B	B	C	C
	Southbound	B	C	B	B
St. Louis Dr/ Dole St	Eastbound	D	D	E	E
	Northbound (LT*)	B	B	A	A

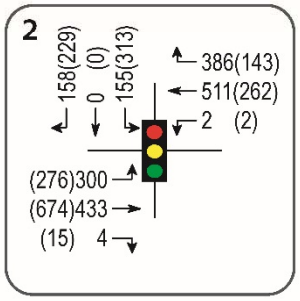
*LT = Left-Turn

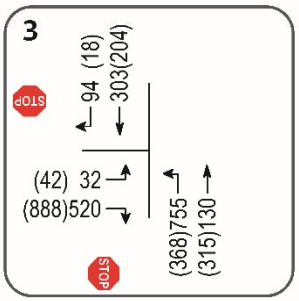
Under Year 2025 without project conditions, traffic operations in the vicinity are expected to remain generally similar to existing conditions. Along Dole Street, the approaches at the intersection with Lower-Campus Road are expected to continue operating at LOS "B" or better during both peak periods while those at the intersection of St. Louis Drive are expected to continue operating at LOS "D" and LOS "E" or better during the AM and PM peak periods, respectively. As previously discussed, traffic operations at this intersection are influenced by the high volume of right-turning vehicles from the stop-controlled approach. At East-West Road, traffic operations at that intersection are expected to continue operating at LOS "B" or better during the AM peak period but are expected to operate lower from an LOS "B" to an LOS "C" during the PM peak period as result of ambient growth in traffic in the project vicinity.

D. Total Traffic Volumes With Project

Figure 7 shows the Year 2025 cumulative AM and PM peak hour traffic conditions resulting from the projected external traffic and the proposed UHM Multifamily development. The cumulative volumes consist of site-generated traffic







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UNIVERSITY OF HAWAII
DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

YEAR 2025 PEAK HOURS OF TRAFFIC
WITH PROJECT

FIGURE
7

superimposed over Year 2025 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

V. TRAFFIC IMPACT ANALYSIS

The Year 2025 cumulative AM and PM peak hour traffic conditions with the proposed UHM Multifamily development are summarized in Table 4. The existing and projected Year 2025 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix E.

Table 4: Existing and Projected Year 2025 (Without and With Project) LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM			PM		
		Exist	Year 2025		Exist	Year 2025	
			w/out Proj	w/ Proj		w/out Proj	w/ Proj
Lower-Campus Rd/ Dole St	Eastbound	A	A	A	A	A	A
	Westbound	A	A	A	A	A	A
	Northbound	B	B	B	B	B	B
East-West Rd/ Dole St	Eastbound	A	A	A	B	B	B
	Westbound	B	B	B	C	C	C
	Southbound	B	C	C	B	B	B
St. Louis Dr/ Dole St	Eastbound	D	D	D	E	E	E
	Northbound (LT*)	B	B	B	A	A	A

*LT = Left-Turn

Under Year 2025 with project conditions, traffic operations in the vicinity of the project are generally expected to remain similar to without project conditions. Along Dole Street, traffic operations at the intersection with Lower-Campus Road are expected to continue operating at LOS "B" or better during both peak periods while those at the intersection with East-West Road are expected to continue operating at LOS "B" or better during the AM peak period and LOS "C" or better being the PM peak period. The remaining intersection at St. Louis Drive is also expected to continue operating similar to without project conditions.

VI. MULTIMODAL FACILITIES

A. Pedestrian Facilities

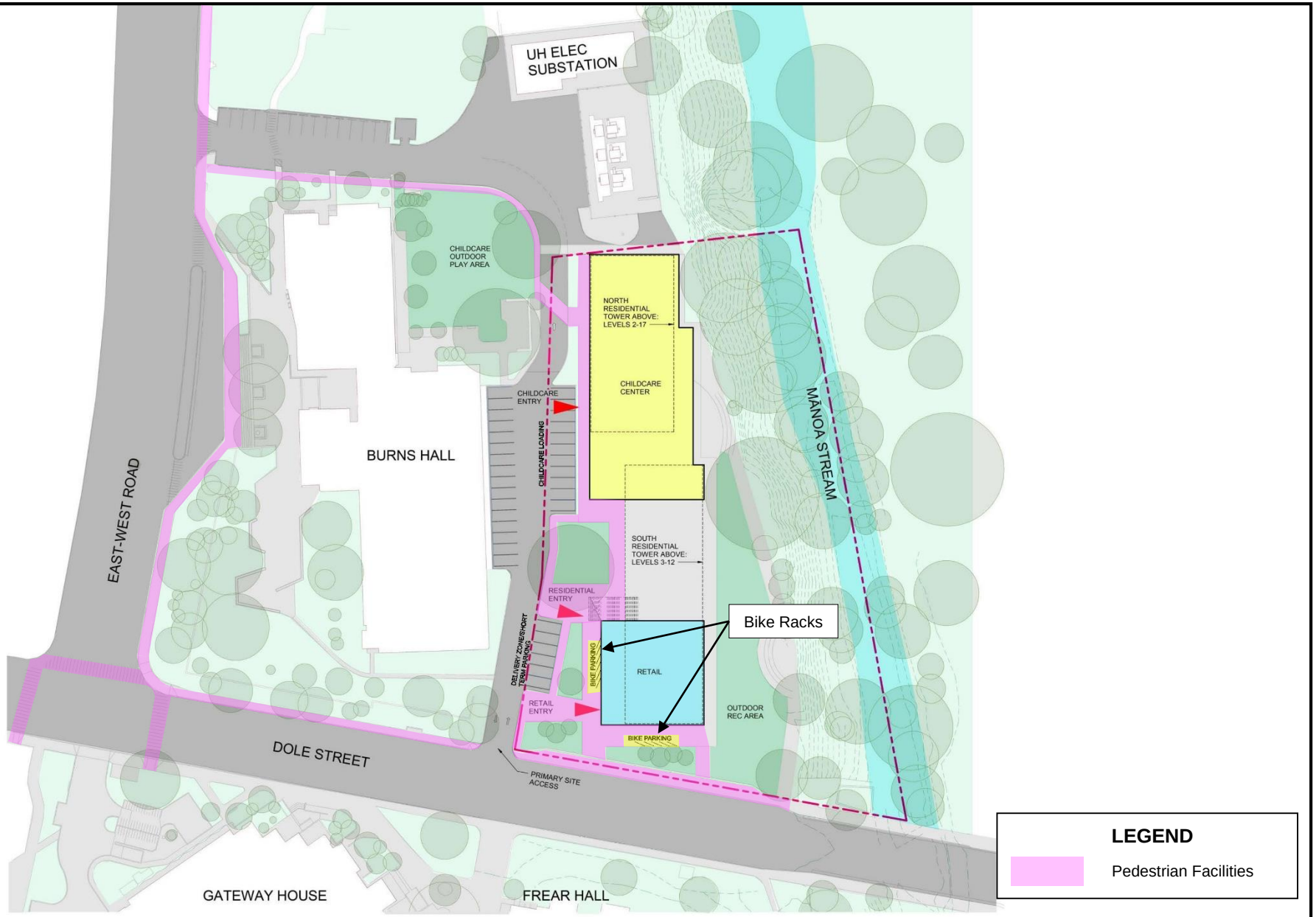
There is a network of pedestrian facilities provided in the vicinity of the project given its relative location to the UHM campus. These facilities are generally comprised of improved sidewalks, crosswalks, pedestrian signal phases, and curb ramps. In addition, there is a signalized midblock crossing located between Lower Campus Road and East-West Road along Dole Street to facilitate pedestrian crossings between the university parking garage and a pedestrian pathway referred to as the "Legacy Path." Street lighting and trees that provide intermittent shade also enhance the overall pedestrian environment.

With the proposed project, access to and from the university campus is expected to continue being provided via sidewalks along Dole Street and East-West Road. The proposed pedestrian connections to/from the project site are shown on Figure 8.

B. Bicycle Facilities

The project site is located in close proximity to a number of BIKI bike share stations which are located within the University of Hawaii campus. The nearest bike share facility is located south of Dole Street in the vicinity of university campus housing. There are also additional bike share stations located west of the project site along Dole Street, near the University's parking structure as well as north of the project site towards the center of campus (see Figure 9). However, existing bike facilities along the roadways in the vicinity of the project are currently limited to bike lanes along a segment of Dole Street between University Avenue and East-West Road. East of East-West Road, Dole Street transitions to a shared roadway.

The proposed project is expected to provide on-site bicycle facilities to encourage the use alternate modes of transportation (see Figure 8). Bike racks for short-term parking will be provided near the south end of the project site while long-term parking will be provided on the 2nd level of the development. Additional improvements are also planned by the City and County of Honolulu to enhance bicycle facilities in the project vicinity. According to the 2019 Update of the Oahu



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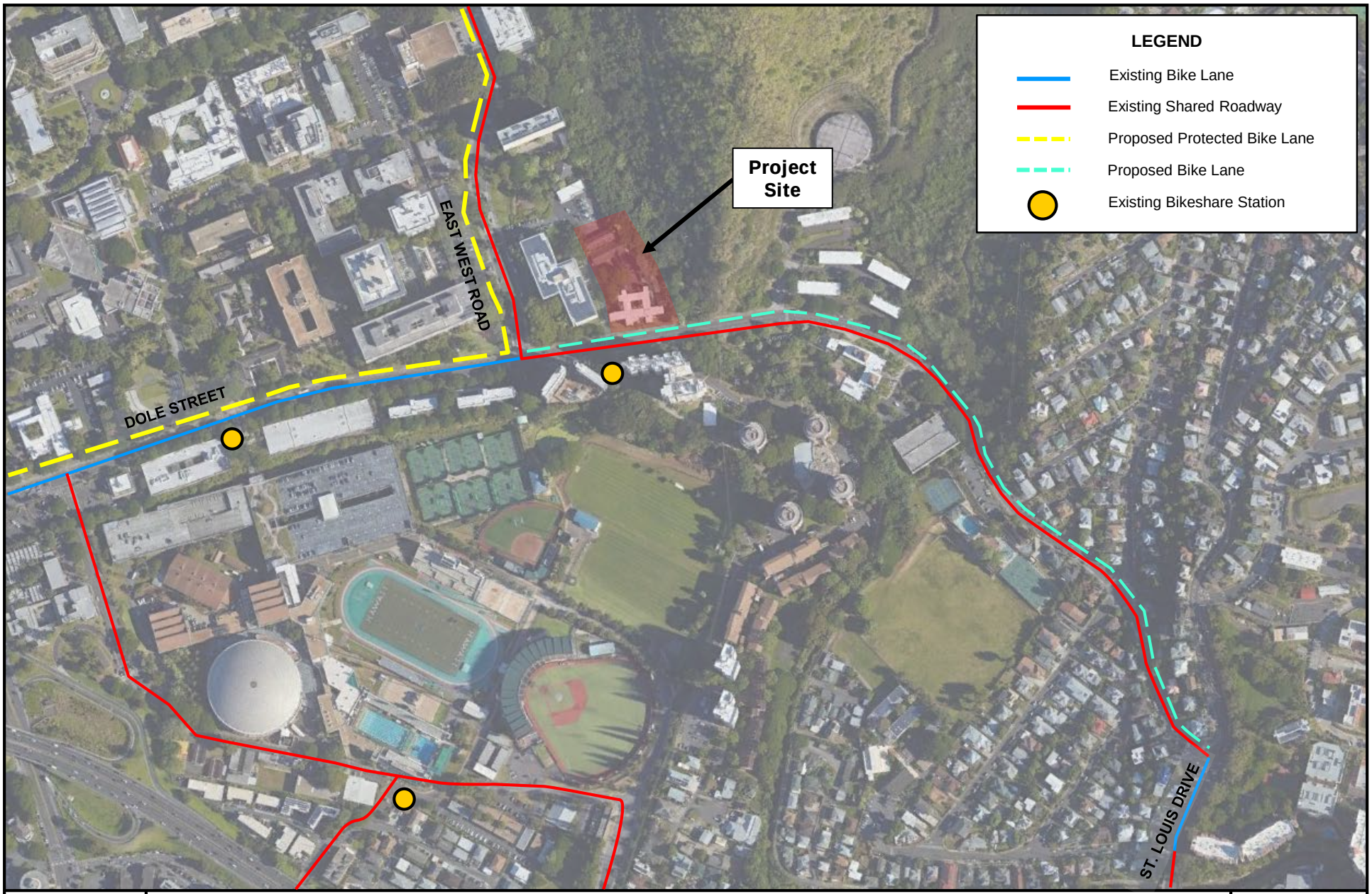
UNIVERSITY OF HAWAII DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

ON-SITE MULTIMODAL FACILITIES

FIGURE 8



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UNIVERSITY OF HAWAII DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

BICYCLE FACILITIES

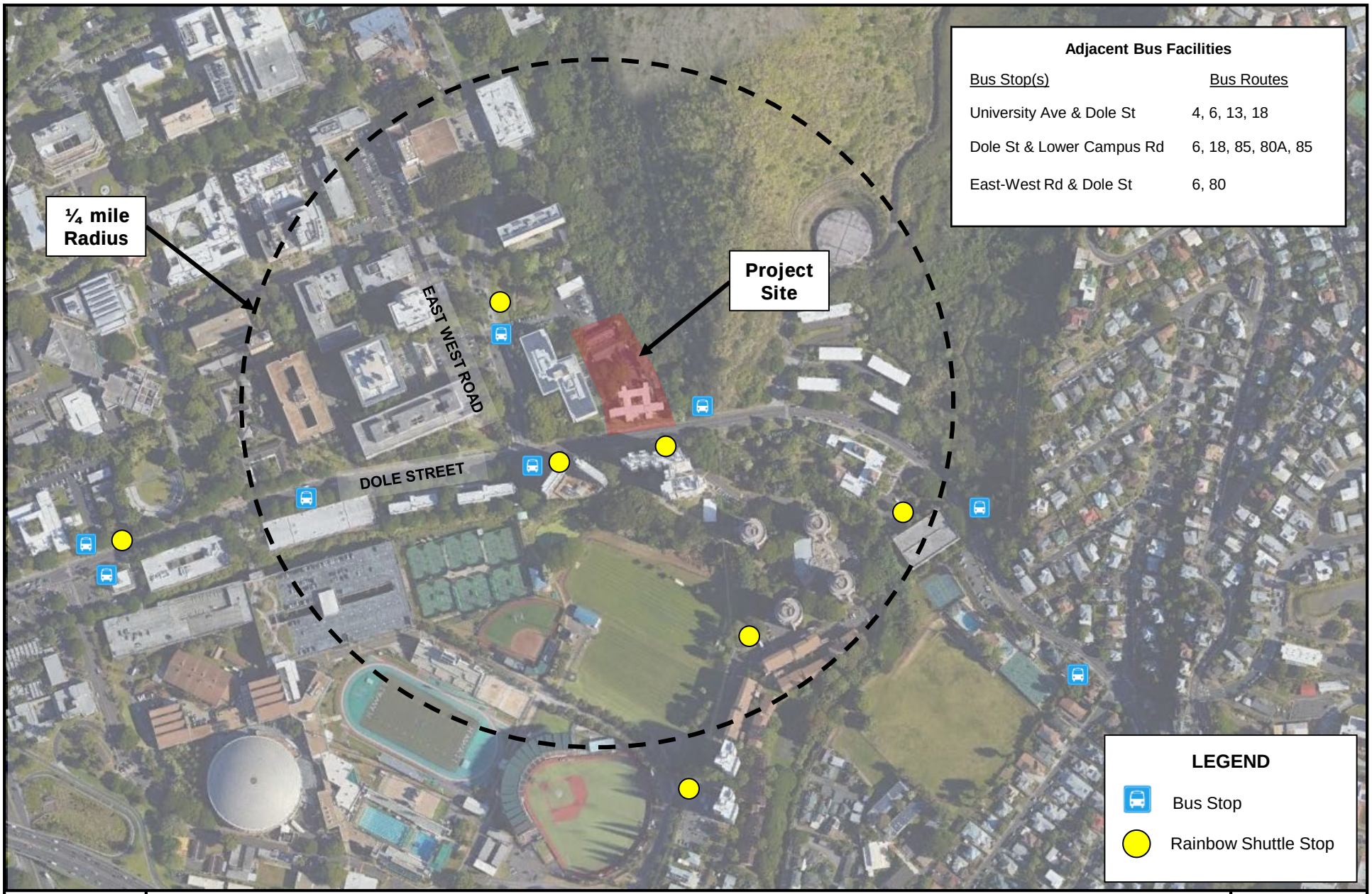
FIGURE 9

Bike Plan published by the City and County of Honolulu Department of Transportation Services, there are plans to convert the existing bike lanes along Dole Street to protected bike lanes and to provide bike lanes along Dole Street east of East-West Road. In addition, protected bike lanes are also planned along East-West Road and Maile Way through the university campus. These improvements are depicted in Figure 9.

C. Transit Facilities

There is a number of existing transit resources located within the project vicinity given the project's proximity to the university campus. These facilities are provided by "The Bus," which is operated by the Oahu Transit Service (OTS) for the City and County of Honolulu Department of Transportation Services. Within a quarter mile radius of the project, there are a total of 4 bus stop locations serving a total of 11 unique routes (see Figure 10). In addition, the University of Hawaii provides a free shuttle service referred to as the "Rainbow Shuttle." This service provides connections to various areas within the university campus as well as to neighboring areas such as Moilili and Koko Head Avenue. There are 6 shuttle routes that operate daily Mondays through Fridays generally from 7:00 AM to 6:00 PM. A night shuttle is also offered between 5:00 PM and 11:15 PM daily. A number of shuttle stops may be accessed from the project site (see Figure 10).

Access to transit facilities in the project vicinity is expected to improve under with project conditions. The new Transportation Management Center included in the UHM LRDP is expected to provide additional parking for the university as well as designated areas for shuttles and buses and is expected to serve as a hub for transit in the vicinity.



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UNIVERSITY OF HAWAII DESIGN-BUILD MULTIFAMILY MIXED-USE PROJECT

TRANSIT FACILITIES

FIGURE 10

VII. RECOMMENDATIONS

Based on the analysis of the traffic data, the following are the recommendations of this study to be incorporated in the project design.

1. Maintain sufficient sight distance for motorists to safely enter and exit the project driveways to enhance pedestrians, bicyclists, and motorists awareness at conflict points.

2. Provide adequate on-site loading and off-loading service areas and prohibit off-site loading operations.

3. Provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver on the project site to avoid vehicle-reversing maneuvers onto public roadways.

4. Provide sufficient turning radii at all project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.

5. Provide adequate signage to clearly indicate the designated uses for the provided parking stalls. Stalls are expected to be allocated for the day care and restaurant uses with short-term loading/unloading stalls provided for the residential uses.

6. Given the limited number of parking stalls, monitor the parking area to prevent long-term parking where it is prohibited and to minimize potential conflicts between the different uses.

7. Provide convenient access to the bicycle parking facilities located on the second level of the building. In addition, monitor the bicycle parking areas on the ground level to ensure adequate available parking to meet demand.

8. Coordinate with the City and County of Honolulu Department of Transportation Services regarding their plans for additional bike facilities along Dole Street and East-West Road.

9. Prepare a Transportation Management Plan for the project since access and circulation for the various uses are expected to differ. This plan may be incorporated into an overall Transportation Management Plan for the University of Hawaii at Manoa campus, if appropriate.

10. Prepare a Construction Management Plan (CMP) for the project that includes discussion on construction activities associated with the anticipated construction schedule and phasing, as well operational conditions associated with traffic circulation, traffic control, and parking during the construction period.

VIII. CONCLUSION

The proposed project entails the redevelopment of the former NOAA building to include residential, commercial, and child care uses. With the implementation of the aforementioned recommendations, traffic operations in the vicinity are generally expected to remain similar to without project conditions. Although traffic operations are generally expected to remain similar to without project conditions, access to the project site and circulation for the various uses are expected to differ and as such, the preparation of a Transportation Management Plan is recommended. This plan may be incorporated into an overall Transportation Management Plan for the University of Hawaii at Manoa as the UHM Multifamily development is one element of the long-term improvements planned for the university. In addition, given the high volume of pedestrian and vehicular traffic in the project vicinity, the preparation of a Construction Management Plan which includes discussions on the anticipated construction schedule, phasing, as well as traffic circulation, traffic control and parking during construction is recommended to further minimize the potential impact of the proposed project on the surrounding roadway network.

APPENDIX A

EXISTING TRAFFIC COUNT DATA

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu HI, 96826

Counted By: TN, WL
Counters: D4-5677, D4-5675
Weather: CLEAR

File Name : DOL LOW WEEKDAY AM
Site Code : 00000005
Start Date : 4/18/2019
Page No : 1

Groups Printed- Unshifted

	Dole Street Westbound				Lower Campus Road Northbound				Dole Street Eastbound			
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	App. Total	Int. Total
06:00 AM	4	26	4	34	5	2	1	8	34	59	93	135
06:15 AM	11	30	4	45	6	2	2	10	62	70	132	187
06:30 AM	6	63	13	82	3	1	1	5	60	111	171	258
06:45 AM	5	100	15	120	5	6	5	16	96	100	196	332
Total	26	219	36	281	19	11	9	39	252	340	592	912
07:00 AM	8	161	31	200	11	9	2	22	128	99	227	449
07:15 AM	9	140	20	169	20	6	5	31	152	98	250	450
07:30 AM	15	152	43	210	3	5	7	15	208	99	307	532
07:45 AM	11	152	29	192	8	11	6	25	163	99	262	479
Total	43	605	123	771	42	31	20	93	651	395	1046	1910
08:00 AM	17	120	36	173	12	2	14	28	122	115	237	438
08:15 AM	24	106	47	177	15	13	15	43	126	142	268	488
08:30 AM	22	103	35	160	16	12	15	43	143	151	294	497
08:45 AM	17	112	36	165	24	17	16	57	164	139	303	525
Total	80	441	154	675	67	44	60	171	555	547	1102	1948
Grand Total	149	1265	313	1727	128	86	89	303	1458	1282	2740	4770
Apprch %	8.6	73.2	18.1		42.2	28.4	29.4		53.2	46.8		
Total %	3.1	26.5	6.6	36.2	2.7	1.8	1.9	6.4	30.6	26.9	57.4	

	Dole Street Westbound			Lower Campus Road Northbound			Dole Street Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	8	161	169	11	9	20	128	99	227	416
07:15 AM	9	140	149	20	6	26	152	98	250	425
07:30 AM	15	152	167	3	5	8	208	99	307	482
07:45 AM	11	152	163	8	11	19	163	99	262	444
Total Volume	43	605	648	42	31	73	651	395	1046	1767
% App. Total	6.6	93.4		57.5	42.5		62.2	37.8		
PHF	.717	.939	.959	.525	.705	.702	.782	.997	.852	.916

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu HI, 96826

Counted By: TN, WL
Counters: D4-5677, D4-5675
Weather: CLEAR

File Name : DOL LOW WEEKDAY PM
Site Code : 00000005
Start Date : 4/18/2019
Page No : 1

Groups Printed- Unshifted

	Dole Street Westbound				Lower Campus Road Northbound				Dole Street Eastbound			
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	App. Total	Int. Total
03:00 PM	8	105	55	168	39	71	27	137	137	43	180	485
03:15 PM	7	123	23	153	40	63	20	123	159	45	204	480
03:30 PM	9	93	28	130	53	45	11	109	142	57	199	438
03:45 PM	6	90	20	116	64	42	28	134	180	48	228	478
Total	30	411	126	567	196	221	86	503	618	193	811	1881
04:00 PM	9	93	31	133	54	46	22	122	165	45	210	465
04:15 PM	7	113	28	148	61	60	26	147	193	74	267	562
04:30 PM	10	117	51	178	49	71	25	145	148	94	242	565
04:45 PM	4	106	24	134	89	65	16	170	171	99	270	574
Total	30	429	134	593	253	242	89	584	677	312	989	2166
05:00 PM	5	106	43	154	56	53	28	137	185	84	269	560
05:15 PM	5	115	19	139	50	29	16	95	166	102	268	502
05:30 PM	12	116	30	158	62	41	19	122	150	98	248	528
05:45 PM	8	98	26	132	55	39	31	125	170	124	294	551
Total	30	435	118	583	223	162	94	479	671	408	1079	2141
Grand Total	90	1275	378	1743	672	625	269	1566	1966	913	2879	6188
Apprch %	5.2	73.1	21.7		42.9	39.9	17.2		68.3	31.7		
Total %	1.5	20.6	6.1	28.2	10.9	10.1	4.3	25.3	31.8	14.8	46.5	

	Dole Street Westbound			Lower Campus Road Northbound			Dole Street Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	7	113	120	61	60	121	193	74	267	508
04:30 PM	10	117	127	49	71	120	148	94	242	489
04:45 PM	4	106	110	89	65	154	171	99	270	534
05:00 PM	5	106	111	56	53	109	185	84	269	489
Total Volume	26	442	468	255	249	504	697	351	1048	2020
% App. Total	5.6	94.4		50.6	49.4		66.5	33.5		
PHF	.650	.944	.921	.716	.877	.818	.903	.886	.970	.946

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu HI, 96826

Counted By: SS, MA
Counters: TU-2049, TU-1958
Weather: CLEAR

File Name : DOL EAS WEEKDAY AM
Site Code : 00000003
Start Date : 4/16/2019
Page No : 1

Groups Printed- Unshifted

	East West Rd Southbound					Dole St Westbound					Driveway Northbound					Dole St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	6	0	4	4	14	0	21	12	1	34	2	0	2	0	4	15	15	2	2	34	86
06:15 AM	5	0	22	3	30	2	39	15	4	60	0	0	2	0	2	36	24	0	0	60	152
06:30 AM	15	0	13	1	29	1	51	41	3	96	0	0	2	0	2	39	32	2	6	79	206
06:45 AM	14	0	13	3	30	0	88	68	7	163	0	0	1	0	1	39	44	0	11	94	288
Total	40	0	52	11	103	3	199	136	15	353	2	0	7	0	9	129	115	4	19	267	732
07:00 AM	24	0	33	4	61	1	153	96	9	259	1	0	1	1	3	46	82	1	14	143	466
07:15 AM	39	0	28	6	73	0	121	100	15	236	1	0	0	0	1	63	88	1	29	181	491
07:30 AM	43	1	41	4	89	0	107	82	5	194	1	1	1	1	4	75	127	2	25	229	516
07:45 AM	35	1	39	6	81	1	127	72	16	216	0	1	1	2	4	70	123	0	36	229	530
Total	141	2	141	20	304	2	508	350	45	905	3	2	3	4	12	254	420	4	104	782	2003
08:00 AM	23	0	30	4	57	2	125	73	21	221	1	0	0	0	1	45	95	2	39	181	460
08:15 AM	29	0	35	9	73	1	86	61	19	167	3	0	1	0	4	57	94	1	61	213	457
08:30 AM	38	0	42	23	103	0	78	68	47	193	2	0	0	0	2	69	62	0	154	285	583
08:45 AM	33	1	51	29	114	1	75	87	85	248	1	1	0	2	4	71	65	0	282	418	784
Total	123	1	158	65	347	4	364	289	172	829	7	1	1	2	11	242	316	3	536	1097	2284
Grand Total	304	3	351	96	754	9	1071	775	232	2087	12	3	11	6	32	625	851	11	659	2146	5019
Apprch %	40.3	0.4	46.6	12.7		0.4	51.3	37.1	11.1		37.5	9.4	34.4	18.8		29.1	39.7	0.5	30.7		
Total %	6.1	0.1	7	1.9	15	0.2	21.3	15.4	4.6	41.6	0.2	0.1	0.2	0.1	0.6	12.5	17	0.2	13.1	42.8	

	East West Rd Southbound				Dole St Westbound				Driveway Northbound				Dole St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	24	0	33	57	**1**	**153**	96	**250**	**1**	0	**1**	2	46	82	1	129	438
07:15 AM	39	0	28	67	0	121	**100**	221	1	0	0	1	63	88	1	152	441
07:30 AM	**43**	**1**	**41**	**85**	0	107	82	189	1	**1**	1	**3**	**75**	**127**	**2**	**204**	**481**
07:45 AM	35	1	39	75	1	127	72	200	0	1	1	2	70	123	0	193	470
Total Volume	141	2	141	284	2	508	350	860	3	2	3	8	254	420	4	678	1830
% App. Total	49.6	0.7	49.6		0.2	59.1	40.7		37.5	25	37.5		37.5	61.9	0.6		
PHF	.820	.500	.860	.835	.500	.830	.875	.860	.750	.500	.750	.667	.847	.827	.500	.831	.951

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu HI, 96826

Counted By: DY, SS
Counters: TU-1958, TU-2049
Weather: CLEAR

File Name : DOL EAS WEEKDAY PM
Site Code : 00000003
Start Date : 4/16/2019
Page No : 1

Groups Printed- Unshifted

	East West Rd Southbound					Dole St Westbound					Driveway Northbound					Dole St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	63	2	41	8	114	2	50	30	17	99	1	1	4	5	11	55	134	1	68	258	482
03:15 PM	74	0	39	2	115	0	64	26	23	113	1	0	1	0	2	56	138	1	56	251	481
03:30 PM	64	0	30	5	99	2	57	37	9	105	2	0	2	2	6	36	139	3	51	229	439
03:45 PM	58	0	28	1	87	2	56	13	14	85	1	0	1	5	7	50	134	0	47	231	410
Total	259	2	138	16	415	6	227	106	63	402	5	1	8	12	26	197	545	5	222	969	1812
04:00 PM	53	1	34	3	91	1	69	32	23	125	2	0	1	2	5	51	141	1	86	279	500
04:15 PM	63	0	26	9	98	0	67	36	15	118	2	0	1	4	7	67	167	5	103	342	565
04:30 PM	74	0	46	7	127	0	53	26	29	108	3	0	2	1	6	69	174	4	66	313	554
04:45 PM	72	2	32	3	109	0	60	24	24	108	2	0	1	2	5	64	158	3	67	292	514
Total	262	3	138	22	425	1	249	118	91	459	9	0	5	9	23	251	640	13	322	1226	2133
05:00 PM	56	1	46	2	105	2	78	28	31	139	3	0	4	1	8	36	164	3	49	252	504
05:15 PM	58	1	29	3	91	0	55	29	37	121	1	0	0	4	5	42	148	0	58	248	465
05:30 PM	66	0	52	3	121	1	49	29	29	108	1	0	0	3	4	39	151	1	66	257	490
05:45 PM	55	1	29	10	95	0	62	21	20	103	3	1	2	2	8	45	136	2	54	237	443
Total	235	3	156	18	412	3	244	107	117	471	8	1	6	10	25	162	599	6	227	994	1902
Grand Total	756	8	432	56	1252	10	720	331	271	1332	22	2	19	31	74	610	1784	24	771	3189	5847
Apprch %	60.4	0.6	34.5	4.5		0.8	54.1	24.8	20.3		29.7	2.7	25.7	41.9		19.1	55.9	0.8	24.2		
Total %	12.9	0.1	7.4	1	21.4	0.2	12.3	5.7	4.6	22.8	0.4	0	0.3	0.5	1.3	10.4	30.5	0.4	13.2	54.5	

	East West Rd Southbound				Dole St Westbound				Driveway Northbound				Dole St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	63	0	26	89	0	67	**36**	103	2	0	1	3	67	167	**5**	239	434
04:30 PM	**74**	0	**46**	**120**	0	53	26	79	**3**	0	2	5	**69**	**174**	4	**247**	**451**
04:45 PM	72	**2**	32	106	0	60	24	84	2	0	1	3	64	158	3	225	418
05:00 PM	56	1	46	103	**2**	**78**	28	**108**	3	0	**4**	**7**	36	164	3	203	421
Total Volume	265	3	150	418	2	258	114	374	10	0	8	18	236	663	15	914	1724
% App. Total	63.4	0.7	35.9		0.5	69	30.5		55.6	0	44.4		25.8	72.5	1.6		
PHF	.895	.375	.815	.871	.250	.827	.792	.866	.833	.000	.500	.643	.855	.953	.750	.925	.956

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu HI, 96826

Counted By: WL, AN
Counters: TU-1957, TU-0652
Weather: CLEAR

File Name : DOL LOU WEEKDAY AM
Site Code : 00000002
Start Date : 4/16/2019
Page No : 1

Groups Printed- Unshifted

	St Louis Drive Southbound			St Louis Drive Northbound				Dole Street Eastbound				
Start Time	Thru	Right	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
06:00 AM	34	2	36	26	13	2	41	0	23	1	24	101
06:15 AM	41	2	43	51	15	2	68	1	33	1	35	146
06:30 AM	63	5	68	94	23	0	117	3	50	0	53	238
06:45 AM	67	9	76	166	26	1	193	2	53	2	57	326
Total	205	18	223	337	77	5	419	6	159	4	169	811
07:00 AM	80	29	109	201	35	4	240	8	102	1	111	460
07:15 AM	82	18	100	179	35	4	218	5	111	2	118	436
07:30 AM	75	21	96	157	33	15	205	12	155	15	182	483
07:45 AM	66	26	92	170	27	7	204	7	135	0	142	438
Total	303	94	397	707	130	30	867	32	503	18	553	1817
08:00 AM	52	14	66	153	30	0	183	14	86	0	100	349
08:15 AM	65	15	80	133	32	2	167	11	83	1	95	342
08:30 AM	72	14	86	129	38	4	171	5	82	0	87	344
08:45 AM	54	14	68	134	30	5	169	7	84	0	91	328
Total	243	57	300	549	130	11	690	37	335	1	373	1363
Grand Total	751	169	920	1593	337	46	1976	75	997	23	1095	3991
Apprch %	81.6	18.4		80.6	17.1	2.3		6.8	91.1	2.1		
Total %	18.8	4.2	23.1	39.9	8.4	1.2	49.5	1.9	25	0.6	27.4	

	St Louis Drive Southbound			St Louis Drive Northbound			Dole Street Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	80	29	109	201	35	236	8	102	110	455
07:15 AM	82	18	100	179	35	214	5	111	116	430
07:30 AM	75	21	96	157	33	190	12	155	167	453
07:45 AM	66	26	92	170	27	197	7	135	142	431
Total Volume	303	94	397	707	130	837	32	503	535	1769
% App. Total	76.3	23.7		84.5	15.5		6	94		
PHF	.924	.810	.911	.879	.929	.887	.667	.811	.801	.972

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu HI, 96826

Counted By: WL, AN
Counters: TU-1957, TU-0652
Weather: CLEAR

File Name : DOL LOU WEEKDAY PM
Site Code : 00000002
Start Date : 4/16/2019
Page No : 1

Groups Printed- Unshifted

	St Louis Drive Southbound			St Louis Drive Northbound				Dole Street Eastbound				
Start Time	Thru	Right	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
03:00 PM	43	3	46	72	56	4	132	5	220	2	227	405
03:15 PM	53	6	59	79	53	5	137	9	195	3	207	403
03:30 PM	46	9	55	70	47	6	123	20	187	1	208	386
03:45 PM	53	3	56	80	87	6	173	15	199	2	216	445
Total	195	21	216	301	243	21	565	49	801	8	858	1639
04:00 PM	45	8	53	88	73	2	163	11	173	1	185	401
04:15 PM	35	5	40	80	76	4	160	10	189	1	200	400
04:30 PM	39	3	42	78	73	2	153	10	236	0	246	441
04:45 PM	47	1	48	84	73	2	159	11	230	1	242	449
Total	166	17	183	330	295	10	635	42	828	3	873	1691
05:00 PM	50	10	60	86	72	9	167	12	195	1	208	435
05:15 PM	68	4	72	80	97	4	181	9	175	2	186	439
05:30 PM	61	8	69	66	84	4	154	6	202	0	208	431
05:45 PM	52	5	57	81	71	2	154	11	191	2	204	415
Total	231	27	258	313	324	19	656	38	763	5	806	1720
Grand Total	592	65	657	944	862	50	1856	129	2392	16	2537	5050
Apprch %	90.1	9.9		50.9	46.4	2.7		5.1	94.3	0.6		
Total %	11.7	1.3	13	18.7	17.1	1	36.8	2.6	47.4	0.3	50.2	

	St Louis Drive Southbound			St Louis Drive Northbound			Dole Street Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	39	3	42	78	73	151	10	236	246	439
04:45 PM	47	1	48	84	73	157	11	230	241	446
05:00 PM	50	10	60	86	72	158	12	195	207	425
05:15 PM	68	4	72	80	97	177	9	175	184	433
Total Volume	204	18	222	328	315	643	42	836	878	1743
% App. Total	91.9	8.1		51	49		4.8	95.2		
PHF	.750	.450	.771	.953	.812	.908	.875	.886	.892	.977

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. Specifically, level-of-service (LOS) criteria are stated in terms of the average control delay per vehicle, typically a 15-min analysis period. The criteria are given in the following table.

Table 1: Level-of-Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec/veh)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group.

Level of Service A describes operations with low control delay, up to 10 sec per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with control delay greater than 10 and up to 20 sec per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 sec per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 sec per vehicle. At level of service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

"Highway Capacity Manual," Transportation Research Board, 2000.

Level of Service E describes operation with control delay greater than 55 and up to 80 sec per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 sec per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

"Highway Capacity Manual," Transportation Research Board, 2000.

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) criteria are given in Table 1. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. If the degree of saturation is greater than about 0.9, average control delay is significantly affected by the length of the analysis period.

Table 1: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (Sec/Veh)
A	≤10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0

"Highway Capacity Manual," Transportation Research Board, 2000.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK PERIOD TRAFFIC ANALYSIS

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	651	395	43	605	42	31
Future Volume (vph)	651	395	43	605	42	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1539		3527	1770	1435
Flt Permitted	1.00	1.00		0.88	0.95	1.00
Satd. Flow (perm)	3539	1539		3126	1770	1435
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	708	429	47	658	46	34
RTOR Reduction (vph)	0	145	0	0	0	29
Lane Group Flow (vph)	708	284	0	705	46	5
Confl. Peds. (#/hr)		20	10			123
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Actuated Green, G (s)	32.9	32.9		32.9	7.8	7.8
Effective Green, g (s)	32.9	32.9		32.9	7.8	7.8
Actuated g/C Ratio	0.66	0.66		0.66	0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2342	1018		2069	277	225
v/s Ratio Prot	0.20				c0.03	
v/s Ratio Perm		0.18		c0.23		0.00
v/c Ratio	0.30	0.28		0.34	0.17	0.02
Uniform Delay, d1	3.5	3.5		3.7	18.1	17.7
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2		0.1	0.3	0.0
Delay (s)	3.6	3.6		3.8	18.4	17.8
Level of Service	A	A		A	B	B
Approach Delay (s)	3.6			3.8	18.1	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	49.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	697	351	26	442	255	249
Future Volume (vph)	697	351	26	442	255	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.92		1.00	1.00	0.89
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1461		3525	1770	1405
Flt Permitted	1.00	1.00		0.90	0.95	1.00
Satd. Flow (perm)	3539	1461		3187	1770	1405
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	734	369	27	465	268	262
RTOR Reduction (vph)	0	199	0	0	0	58
Lane Group Flow (vph)	734	170	0	492	268	204
Confl. Peds. (#/hr)		95	95			146
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	19.4	19.4		19.4	13.8	13.8
Effective Green, g (s)	19.4	19.4		19.4	13.8	13.8
Actuated g/C Ratio	0.46	0.46		0.46	0.33	0.33
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1626	671		1465	578	459
v/s Ratio Prot	c0.21				c0.15	
v/s Ratio Perm		0.12		0.15		0.15
v/c Ratio	0.45	0.25		0.34	0.46	0.44
Uniform Delay, d1	7.8	7.0		7.3	11.3	11.2
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		0.1	0.6	0.7
Delay (s)	8.0	7.2		7.4	11.9	11.9
Level of Service	A	A		A	B	B
Approach Delay (s)	7.7			7.4	11.9	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	420	4	2	508	350	0	0	0	141	0	141
Future Volume (vph)	254	420	4	2	508	350	0	0	0	141	0	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0					5.0		5.0
Lane Util. Factor		0.95			0.95					1.00		1.00
Frpb, ped/bikes		1.00			0.98					1.00		0.89
Flpb, ped/bikes		1.00			1.00					0.96		1.00
Frt		1.00			0.94					1.00		0.85
Flt Protected		0.98			1.00					0.95		1.00
Satd. Flow (prot)		3466			3255					1696		1407
Flt Permitted		0.55			0.95					0.95		1.00
Satd. Flow (perm)		1932			3105					1696		1407
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	267	442	4	2	535	368	0	0	0	148	0	148
RTOR Reduction (vph)	0	0	0	0	159	0	0	0	0	0	0	119
Lane Group Flow (vph)	0	713	0	0	746	0	0	0	0	148	0	29
Confl. Peds. (#/hr)	20		4	4		20	109		45	45		109
Turn Type	custom	NA		Perm	NA					Perm		Perm
Protected Phases	5	5 2			6							
Permitted Phases	2			6						4		4
Actuated Green, G (s)		34.9			21.1					10.9		10.9
Effective Green, g (s)		34.9			21.1					10.9		10.9
Actuated g/C Ratio		0.63			0.38					0.20		0.20
Clearance Time (s)					5.0					5.0		5.0
Vehicle Extension (s)					3.0					3.0		3.0
Lane Grp Cap (vph)		1450			1174					331		274
v/s Ratio Prot		c0.08										
v/s Ratio Perm		0.23			c0.24					c0.09		0.02
v/c Ratio		0.49			0.64					0.45		0.11
Uniform Delay, d1		5.7			14.2					19.8		18.4
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.3			1.1					1.0		0.2
Delay (s)		5.9			15.3					20.8		18.6
Level of Service		A			B					C		B
Approach Delay (s)		5.9			15.3			0.0			19.7	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	663	15	2	258	114	0	0	0	265	0	150
Future Volume (vph)	236	663	15	2	258	114	0	0	0	265	0	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5					4.5		4.5
Lane Util. Factor		0.95			0.95					1.00		1.00
Frpb, ped/bikes		1.00			0.98					1.00		0.89
Flpb, ped/bikes		1.00			1.00					0.76		1.00
Frt		1.00			0.95					1.00		0.85
Flt Protected		0.99			1.00					0.95		1.00
Satd. Flow (prot)		3471			3320					1351		1410
Flt Permitted		0.72			0.95					0.95		1.00
Satd. Flow (perm)		2541			3153					1351		1410
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	246	691	16	2	269	119	0	0	0	276	0	156
RTOR Reduction (vph)	0	1	0	0	55	0	0	0	0	0	0	103
Lane Group Flow (vph)	0	952	0	0	335	0	0	0	0	276	0	53
Confl. Peds. (#/hr)	21		8	8		21	99		236	236		99
Confl. Bikes (#/hr)												1
Turn Type	custom	NA		Perm	NA					Perm		Perm
Protected Phases	7	7 4			8							
Permitted Phases	4			8						6		6
Actuated Green, G (s)		30.8			13.3					20.3		20.3
Effective Green, g (s)		30.8			13.3					20.3		20.3
Actuated g/C Ratio		0.51			0.22					0.34		0.34
Clearance Time (s)					4.5					4.5		4.5
Vehicle Extension (s)					3.0					3.0		3.0
Lane Grp Cap (vph)		1503			697					456		476
v/s Ratio Prot		c0.14										
v/s Ratio Perm		c0.19			0.11					c0.20		0.04
v/c Ratio		0.63			0.48					0.61		0.11
Uniform Delay, d1		10.6			20.4					16.6		13.7
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.9			0.5					2.3		0.1
Delay (s)		11.5			20.9					18.8		13.8
Level of Service		B			C					B		B
Approach Delay (s)		11.5			20.9			0.0			17.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	503	707	130	303	94
Future Volume (Veh/h)	32	503	707	130	303	94
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	33	519	729	134	312	97
Pedestrians	18			30		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	2			3		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1922	360	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1922	360	330			
tC, single (s)	*5.4	*5.2	*3.1			
tC, 2 stage (s)						
tF (s)	*3.3	*3.1	2.2			
p0 queue free %	43	32	45			
cM capacity (veh/h)	58	767	1327			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	33	519	729	134	312	97
Volume Left	33	0	729	0	0	0
Volume Right	0	519	0	0	0	97
cSH	58	767	1327	1700	1700	1700
Volume to Capacity	0.57	0.68	0.55	0.08	0.18	0.06
Queue Length 95th (ft)	58	134	87	0	0	0
Control Delay (s)	130.9	18.9	11.0	0.0	0.0	0.0
Lane LOS	F	C	B			
Approach Delay (s)	25.6		9.3		0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	12.1		
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	836	328	315	204	18
Future Volume (Veh/h)	42	836	328	315	204	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	43	853	335	321	208	18
Pedestrians	3			10		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			1		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1202	221	211			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1202	221	211			
tC, single (s)	*5.4	*5.2	*3.1			
tC, 2 stage (s)						
tF (s)	*3.3	*3.1	2.2			
p0 queue free %	81	7	77			
cM capacity (veh/h)	227	915	1439			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	43	853	335	321	208	18
Volume Left	43	0	335	0	0	0
Volume Right	0	853	0	0	0	18
cSH	227	915	1439	1700	1700	1700
Volume to Capacity	0.19	0.93	0.23	0.19	0.12	0.01
Queue Length 95th (ft)	17	360	23	0	0	0
Control Delay (s)	24.5	37.0	8.3	0.0	0.0	0.0
Lane LOS	C	E	A			
Approach Delay (s)	36.4		4.2		0.0	
Approach LOS	E					

Intersection Summary			
Average Delay	19.9		
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2025 PEAK PERIOD TRAFFIC
ANALYSIS WITHOUT PROJECT

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	697	409	43	615	46	31
Future Volume (vph)	697	409	43	615	46	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00	0.90
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1538		3527	1770	1431
Flt Permitted	1.00	1.00		0.88	0.95	1.00
Satd. Flow (perm)	3539	1538		3110	1770	1431
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	758	445	47	668	50	34
RTOR Reduction (vph)	0	146	0	0	0	29
Lane Group Flow (vph)	758	299	0	715	50	5
Confl. Peds. (#/hr)		20	10			123
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Actuated Green, G (s)	34.5	34.5		34.5	7.9	7.9
Effective Green, g (s)	34.5	34.5		34.5	7.9	7.9
Actuated g/C Ratio	0.67	0.67		0.67	0.15	0.15
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2375	1032		2087	272	219
v/s Ratio Prot	0.21				c0.03	
v/s Ratio Perm		0.19		c0.23		0.00
v/c Ratio	0.32	0.29		0.34	0.18	0.02
Uniform Delay, d1	3.5	3.4		3.6	18.9	18.5
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2		0.1	0.3	0.0
Delay (s)	3.6	3.6		3.7	19.3	18.5
Level of Service	A	A		A	B	B
Approach Delay (s)	3.6			3.7	19.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: Lower-Campus Road & Dole St

06/15/2020

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	737	357	26	513	268	249
Future Volume (vph)	737	357	26	513	268	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.92		1.00	1.00	0.88
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1457		3527	1770	1400
Flt Permitted	1.00	1.00		0.91	0.95	1.00
Satd. Flow (perm)	3539	1457		3200	1770	1400
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	776	376	27	540	282	262
RTOR Reduction (vph)	0	201	0	0	0	51
Lane Group Flow (vph)	776	175	0	567	282	211
Confl. Peds. (#/hr)		95	95			146
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	20.3	20.3		20.3	14.3	14.3
Effective Green, g (s)	20.3	20.3		20.3	14.3	14.3
Actuated g/C Ratio	0.47	0.47		0.47	0.33	0.33
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1647	678		1489	580	459
v/s Ratio Prot	c0.22				c0.16	
v/s Ratio Perm		0.12		0.18		0.15
v/c Ratio	0.47	0.26		0.38	0.49	0.46
Uniform Delay, d1	8.0	7.1		7.6	11.7	11.6
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		0.2	0.6	0.7
Delay (s)	8.2	7.3		7.7	12.4	12.3
Level of Service	A	A		A	B	B
Approach Delay (s)	7.9			7.7	12.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	43.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	420	4	2	508	386	0	0	0	148	0	151
Future Volume (vph)	300	420	4	2	508	386	0	0	0	148	0	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0					5.0		5.0
Lane Util. Factor		0.95			0.95					1.00		1.00
Frpb, ped/bikes		1.00			0.98					1.00		0.89
Flpb, ped/bikes		1.00			1.00					0.96		1.00
Frt		1.00			0.94					1.00		0.85
Flt Protected		0.98			1.00					0.95		1.00
Satd. Flow (prot)		3459			3238					1694		1404
Flt Permitted		0.55			0.95					0.95		1.00
Satd. Flow (perm)		1948			3088					1694		1404
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	316	442	4	2	535	406	0	0	0	156	0	159
RTOR Reduction (vph)	0	0	0	0	171	0	0	0	0	0	0	128
Lane Group Flow (vph)	0	762	0	0	772	0	0	0	0	156	0	31
Confl. Peds. (#/hr)	20		4	4		20	109		45	45		109
Turn Type	custom	NA		Perm	NA					Perm		Perm
Protected Phases	5	5 2			6							
Permitted Phases	2			6						4		4
Actuated Green, G (s)		35.8			22.1					11.2		11.2
Effective Green, g (s)		35.8			22.1					11.2		11.2
Actuated g/C Ratio		0.63			0.39					0.20		0.20
Clearance Time (s)					5.0					5.0		5.0
Vehicle Extension (s)					3.0					3.0		3.0
Lane Grp Cap (vph)		1454			1197					332		275
v/s Ratio Prot		c0.08										
v/s Ratio Perm		0.25			c0.25					c0.09		0.02
v/c Ratio		0.52			0.65					0.47		0.11
Uniform Delay, d1		5.9			14.2					20.3		18.8
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.3			1.2					1.1		0.2
Delay (s)		6.2			15.5					21.3		19.0
Level of Service		A			B					C		B
Approach Delay (s)		6.2			15.5			0.0			20.2	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	276	663	15	2	258	143	0	0	0	305	0	221
Future Volume (vph)	276	663	15	2	258	143	0	0	0	305	0	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5					4.5		4.5
Lane Util. Factor		0.95			0.95					1.00		1.00
Frpb, ped/bikes		1.00			0.98					1.00		0.88
Flpb, ped/bikes		1.00			1.00					0.74		1.00
Frt		1.00			0.95					1.00		0.85
Flt Protected		0.99			1.00					0.95		1.00
Satd. Flow (prot)		3466			3281					1310		1394
Flt Permitted		0.68			0.92					0.95		1.00
Satd. Flow (perm)		2386			3011					1310		1394
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	288	691	16	2	269	149	0	0	0	318	0	230
RTOR Reduction (vph)	0	1	0	0	83	0	0	0	0	0	0	148
Lane Group Flow (vph)	0	994	0	0	337	0	0	0	0	318	0	82
Confl. Peds. (#/hr)	21		8	8		21	99		236	236		99
Confl. Bikes (#/hr)												1
Turn Type	custom	NA		Perm	NA					Perm		Perm
Protected Phases	7	7 4			8							
Permitted Phases	4			8						6		6
Actuated Green, G (s)		33.4			13.6					23.7		23.7
Effective Green, g (s)		33.4			13.6					23.7		23.7
Actuated g/C Ratio		0.51			0.21					0.36		0.36
Clearance Time (s)					4.5					4.5		4.5
Vehicle Extension (s)					3.0					3.0		3.0
Lane Grp Cap (vph)		1455			619					469		499
v/s Ratio Prot		c0.16										
v/s Ratio Perm		c0.19			0.11					c0.24		0.06
v/c Ratio		0.68			0.54					0.68		0.17
Uniform Delay, d1		12.4			23.5					18.0		14.5
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		1.3			1.0					3.9		0.2
Delay (s)		13.7			24.5					21.8		14.6
Level of Service		B			C					C		B
Approach Delay (s)		13.7			24.5			0.0			18.8	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	510	743	130	303	94
Future Volume (Veh/h)	32	510	743	130	303	94
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	33	526	766	134	312	97
Pedestrians	18			30		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	2			3		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1996	360	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1996	360	330			
tC, single (s)	*5.4	*5.2	*3.1			
tC, 2 stage (s)						
tF (s)	*3.3	*3.1	2.2			
p0 queue free %	33	31	42			
cM capacity (veh/h)	49	767	1327			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	33	526	766	134	312	97
Volume Left	33	0	766	0	0	0
Volume Right	0	526	0	0	0	97
cSH	49	767	1327	1700	1700	1700
Volume to Capacity	0.67	0.69	0.58	0.08	0.18	0.06
Queue Length 95th (ft)	66	138	97	0	0	0
Control Delay (s)	168.5	19.3	11.3	0.0	0.0	0.0
Lane LOS	F	C	B			
Approach Delay (s)	28.1		9.7		0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	13.1		
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	876	357	315	204	18
Future Volume (Veh/h)	42	876	357	315	204	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	43	894	364	321	208	18
Pedestrians	3			10		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			1		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1260	221	211			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1260	221	211			
tC, single (s)	*5.4	*5.2	*3.1			
tC, 2 stage (s)						
tF (s)	*3.3	*3.1	2.2			
p0 queue free %	79	2	75			
cM capacity (veh/h)	207	915	1439			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	43	894	364	321	208	18
Volume Left	43	0	364	0	0	0
Volume Right	0	894	0	0	0	18
cSH	207	915	1439	1700	1700	1700
Volume to Capacity	0.21	0.98	0.25	0.19	0.12	0.01
Queue Length 95th (ft)	19	426	25	0	0	0
Control Delay (s)	26.9	45.6	8.3	0.0	0.0	0.0
Lane LOS	D	E	A			
Approach Delay (s)	44.7		4.4		0.0	
Approach LOS	E					

Intersection Summary			
Average Delay	24.3		
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2025 PEAK PERIOD TRAFFIC
ANALYSIS WITH PROJECT

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	710	409	43	625	46	31
Future Volume (vph)	710	409	43	625	46	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	1.00	0.90
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1537		3527	1770	1429
Flt Permitted	1.00	1.00		0.88	0.95	1.00
Satd. Flow (perm)	3539	1537		3108	1770	1429
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	772	445	47	679	50	34
RTOR Reduction (vph)	0	145	0	0	0	29
Lane Group Flow (vph)	772	300	0	726	50	5
Confl. Peds. (#/hr)		20	10			123
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Actuated Green, G (s)	35.1	35.1		35.1	7.9	7.9
Effective Green, g (s)	35.1	35.1		35.1	7.9	7.9
Actuated g/C Ratio	0.68	0.68		0.68	0.15	0.15
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2388	1037		2097	268	217
v/s Ratio Prot	0.22				c0.03	
v/s Ratio Perm		0.20		c0.23		0.00
v/c Ratio	0.32	0.29		0.35	0.19	0.02
Uniform Delay, d1	3.5	3.4		3.6	19.2	18.8
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2		0.1	0.3	0.0
Delay (s)	3.6	3.6		3.7	19.6	18.8
Level of Service	A	A		A	B	B
Approach Delay (s)	3.6			3.7	19.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: Lower-Campus Road & Dole St

06/15/2020

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	748	357	26	525	268	249
Future Volume (vph)	748	357	26	525	268	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.95	1.00		0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.92		1.00	1.00	0.88
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	3539	1455		3527	1770	1396
Flt Permitted	1.00	1.00		0.91	0.95	1.00
Satd. Flow (perm)	3539	1455		3202	1770	1396
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	787	376	27	553	282	262
RTOR Reduction (vph)	0	197	0	0	0	50
Lane Group Flow (vph)	787	179	0	580	282	212
Confl. Peds. (#/hr)		95	95			146
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	21.2	21.2		21.2	14.4	14.4
Effective Green, g (s)	21.2	21.2		21.2	14.4	14.4
Actuated g/C Ratio	0.48	0.48		0.48	0.32	0.32
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1682	691		1522	571	450
v/s Ratio Prot	c0.22				c0.16	
v/s Ratio Perm		0.12		0.18		0.15
v/c Ratio	0.47	0.26		0.38	0.49	0.47
Uniform Delay, d1	7.9	7.0		7.5	12.2	12.1
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2		0.2	0.7	0.8
Delay (s)	8.1	7.2		7.7	12.8	12.8
Level of Service	A	A		A	B	B
Approach Delay (s)	7.8			7.7	12.8	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	44.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	433	4	2	511	386	0	0	0	155	0	158
Future Volume (vph)	300	433	4	2	511	386	0	0	0	155	0	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0					5.0		5.0
Lane Util. Factor		0.95			0.95					1.00		1.00
Frpb, ped/bikes		1.00			0.98					1.00		0.88
Flpb, ped/bikes		1.00			1.00					0.96		1.00
Frt		1.00			0.94					1.00		0.85
Flt Protected		0.98			1.00					0.95		1.00
Satd. Flow (prot)		3461			3238					1693		1401
Flt Permitted		0.55			0.95					0.95		1.00
Satd. Flow (perm)		1943			3088					1693		1401
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	316	456	4	2	538	406	0	0	0	163	0	166
RTOR Reduction (vph)	0	0	0	0	169	0	0	0	0	0	0	133
Lane Group Flow (vph)	0	776	0	0	777	0	0	0	0	163	0	33
Confl. Peds. (#/hr)	20		4	4		20	109		45	45		109
Turn Type	custom	NA		Perm	NA					Perm		Perm
Protected Phases	5	5 2			6							
Permitted Phases	2			6						4		4
Actuated Green, G (s)		36.4			22.4					11.5		11.5
Effective Green, g (s)		36.4			22.4					11.5		11.5
Actuated g/C Ratio		0.63			0.39					0.20		0.20
Clearance Time (s)					5.0					5.0		5.0
Vehicle Extension (s)					3.0					3.0		3.0
Lane Grp Cap (vph)		1457			1194					336		278
v/s Ratio Prot		c0.08										
v/s Ratio Perm		0.25			c0.25					c0.10		0.02
v/c Ratio		0.53			0.65					0.49		0.12
Uniform Delay, d1		6.0			14.5					20.6		19.0
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		0.4			1.3					1.1		0.2
Delay (s)		6.4			15.8					21.7		19.2
Level of Service		A			B					C		B
Approach Delay (s)		6.4			15.8			0.0			20.4	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	276	674	15	2	262	143	0	0	0	313	0	229
Future Volume (vph)	276	674	15	2	262	143	0	0	0	313	0	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5					4.5		4.5
Lane Util. Factor		0.95			0.95					1.00		1.00
Frpb, ped/bikes		1.00			0.98					1.00		0.88
Flpb, ped/bikes		1.00			1.00					0.74		1.00
Frt		1.00			0.95					1.00		0.85
Flt Protected		0.99			1.00					0.95		1.00
Satd. Flow (prot)		3466			3283					1303		1392
Flt Permitted		0.68			0.91					0.95		1.00
Satd. Flow (perm)		2376			2986					1303		1392
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	288	702	16	2	273	149	0	0	0	326	0	239
RTOR Reduction (vph)	0	1	0	0	81	0	0	0	0	0	0	153
Lane Group Flow (vph)	0	1005	0	0	343	0	0	0	0	326	0	86
Confl. Peds. (#/hr)	21		8	8		21	99		236	236		99
Confl. Bikes (#/hr)												1
Turn Type	custom	NA		Perm	NA					Perm		Perm
Protected Phases	7	7 4			8							
Permitted Phases	4			8						6		6
Actuated Green, G (s)		33.9			13.8					24.2		24.2
Effective Green, g (s)		33.9			13.8					24.2		24.2
Actuated g/C Ratio		0.51			0.21					0.36		0.36
Clearance Time (s)					4.5					4.5		4.5
Vehicle Extension (s)					3.0					3.0		3.0
Lane Grp Cap (vph)		1453			614					469		502
v/s Ratio Prot		c0.16										
v/s Ratio Perm		c0.19			0.11					c0.25		0.06
v/c Ratio		0.69			0.56					0.70		0.17
Uniform Delay, d1		12.6			23.9					18.3		14.6
Progression Factor		1.00			1.00					1.00		1.00
Incremental Delay, d2		1.4			1.1					4.4		0.2
Delay (s)		14.1			25.0					22.7		14.8
Level of Service		B			C					C		B
Approach Delay (s)		14.1			25.0			0.0			19.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	520	755	130	303	94
Future Volume (Veh/h)	32	520	755	130	303	94
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	33	536	778	134	312	97
Pedestrians	18			30		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	2			3		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2020	360	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2020	360	330			
tC, single (s)	*5.4	*5.2	*3.1			
tC, 2 stage (s)						
tF (s)	*3.3	*3.1	2.2			
p0 queue free %	30	30	41			
cM capacity (veh/h)	47	767	1327			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	33	536	778	134	312	97
Volume Left	33	0	778	0	0	0
Volume Right	0	536	0	0	0	97
cSH	47	767	1327	1700	1700	1700
Volume to Capacity	0.70	0.70	0.59	0.08	0.18	0.06
Queue Length 95th (ft)	69	145	100	0	0	0
Control Delay (s)	183.5	19.8	11.5	0.0	0.0	0.0
Lane LOS	F	C	B			
Approach Delay (s)	29.3		9.8		0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	13.6		
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	888	368	315	204	18
Future Volume (Veh/h)	42	888	368	315	204	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	43	906	376	321	208	18
Pedestrians	3			10		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	0			1		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1284	221	211			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1284	221	211			
tC, single (s)	*5.4	*5.2	*3.1			
tC, 2 stage (s)						
tF (s)	*3.3	*3.1	2.2			
p0 queue free %	78	1	74			
cM capacity (veh/h)	199	915	1439			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	43	906	376	321	208	18
Volume Left	43	0	376	0	0	0
Volume Right	0	906	0	0	0	18
cSH	199	915	1439	1700	1700	1700
Volume to Capacity	0.22	0.99	0.26	0.19	0.12	0.01
Queue Length 95th (ft)	20	446	26	0	0	0
Control Delay (s)	28.0	48.6	8.4	0.0	0.0	0.0
Lane LOS	D	E	A			
Approach Delay (s)	47.6		4.5		0.0	
Approach LOS	E					

Intersection Summary			
Average Delay	25.8		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

APPENDIX F

Pre-Consultation Letters and Responses

Appendix F: Pre-Consultation Parties

Agency/Entity	Division/District	Contact Person
Federal Agencies		
U.S. Department of Army Corps Engineers	Hawaii Division – Honolulu District	N/A
U.S. Fish and Wildlife Services	Pacific Region	N/A
State of Hawaiʻi		
Department of Land and Natural Resources	Engineering Division Land Division Division of Aquatic Resources Division of Water Resource Management Division of Boat and Ocean Recreation	Suzanne Case
Dept. of Land and Natural Resources	Historic Preservation Division	Alan Downer, PhD
Dept. of Land and Natural Resources	Office of Conservation and Coastal Lands	Samuel J. Lemmo
Department of Health	N/A	Virginia Pressler, M.D.
Department of Health	Environmental Health Administration	Keith Kawakoa
Department of Health	Clean Water Branch Environmental Management Division	N/A
Department of Education	N/A	Christina Kishimoto, Ed. D
Dept. of Business, Economic Development, & Tourism	N/A	Luis P. Salaveria
Office of Hawaiian Affairs	N/A	Sylvia Hussey, Ed. D
State Officials		
District 11	Senator	Brian T. Taniguchi
District 24	Representative	Della Au Belatti
City and County of Honolulu		

Agency/Entity	Division/District	Contact Person
Dept. of Parks & Recreation	N/A	Michael K. Nekota
Dept. of Planning & Permitting	N/A	Kathy K. Sokugawa
Dept. of Design & Construction	N/A	Robert Kroning, P.E.
Dept. of Facility Maintenance	N/A	Ross S. Sasamura
Dept. of Environmental Services	N/A	Lori M. K. Kahikina
Dept. of Transportation Services	N/A	Wes Frysztacki
Honolulu Police Department	N/A	Chief Susan Ballard
Honolulu Fire Department	N/A	Chief Manual P. Neves
Board of Water Supply	N/A	Ernest Y. W. Lau, P.E.
City Official		
District 5	Council Member	Ann Kobayashi
Neighborhood Boards		
Mānoa	Neighborhood Board No. 7	Dylan Armstrong
McCully/ Mōʻiliʻili	Neighborhood Board No. 8	Timothy Streitz
Diamond Head/Kapahulu/St. Louis Heights	Neighborhood Board No. 5	Richard Figiluzzi
Private Organizations		
Ala Wai Watershed Association	N/A	Tom Heinrich
Kaimana Lanais	N/A	N/A
Chen, Francis & Edna Trust	N/A	N/A
Wheeler, Family Trust	N/A	N/A

Agency/Entity	Division/District	Contact Person
Ala Wai Skyrise	N/A	N/A
Kapiʻolani Gardens	N/A	N/A
Ala Wai Plaza	N/A	N/A
AOAO The Twin Towers Inc.	N/A	N/A
Lanikea at Waikīkī	N/A	N/A
Pacific Living Trust	N/A	N/A
La Casa	N/A	N/A
WBL Inc.	N/A	N/A
N T P Lynn's Investment Corp.	N/A	N/A
Hale Moani	N/A	N/A
2121 Ala Wai	N/A	N/A
Hawaiian Electric Company, Inc.	N/A	N/A
Four Paddle	N/A	N/A
Kapiolani Real Estate LLC	N/A	N/A
411 Kaiolu Inc.	N/A	N/A
Aloha Towers	N/A	N/A
Rosalei Ltd.	N/A	N/A
Ariali Realty Inc.	N/A	N/A

Agency/Entity	Division/District	Contact Person
Lanikea at Waikīkī	N/A	N/A
Schools		
‘Iolani School	N/A	N/A
Individuals		
N/A	Fee Owner	Juan I. Ramos
N/A	Fee Owner	Donna L. Gayer & John J.D. Gayer
N/A	Fee Owner	Robert D.M. Au & Audrey M. Au
The Promenade	Fee Owner	Mary E. Gabriel
The Promenade	Fee Owner	Kathleen L. Street
The Promenade	Fee Owner	Patricia A. Street

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 12, 2020

LD540

ATTN: Allen Kam, Director of Planning
Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

via email: akam@bchdesign.com

Dear Sirs:

SUBJECT: Pre-Consultation for an Environmental Assessment, Proposed University of Hawai'i-Manoa Campus Student and Faculty Multi-Family Housing; 2570 Dole Street, Honolulu, Oahu, Hawai'i; TMK: (1) 2-8-023:009.

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to DLNR's various Divisions for their review and comment.

Attached are comments received from our (a) Engineering Division, (b) Division of Aquatic Resources, and (c) Division of Forestry and Wildlife. Should you have any questions about the attached comments, please feel free to contact Barbara Lee via email at barbara.j.lee@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 27, 2020

LD 540

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
X Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation *(via email: DLNR.Intake.SHPD@hawaii.gov)*

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: **Pre-Consultation for an Environmental Assessment**
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing

LOCATION: 2570 Dole Street, Honolulu, Hawai'i
TMK: (1) 2-8-023:009

APPLICANT: **Belt-Collins Hawaii LLC on behalf of University of Hawai'i at Mānoa**

Transmitted for your review and comment is information on the above-referenced subject. Please submit any comments to Land Division by **June 10, 2020.**

If no response is received by the above date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee via email at the following address: barbara.j.lee@hawaii.gov. Thank you.

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

Signed: _____

Print Name: Brian J. Neilson- DAR Administrator

Date: Jun 9, 2020

Attachments
Cc: Central Files

DAVID Y. IGE
GOVERNOR OF
HAWAII

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

Date: 6/8/2020
DAR # CV0014

MEMORANDUM

TO: Brian J. Neilson
DAR Administrator

FROM: Kimberly Fuller, Aquatic Biologist

SUBJECT: Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus (UHM)

Request Submitted by: Belt-Collins Hawaii LLC on behalf of University of Hawai'i at Mānoa
2570 Dole Street, Honolulu, Hawai'i

Location of Project: TMK: (1) 2-8-023:009

Brief Description of Project:

UHM is proposing a Multi-Family Housing project on Mānoa campus on O'ahu, Hawai'i. The work will occur on Dole Street next to Mānoa Stream. An environmental assessment will be prepared for this project and preliminary input is required by June 12, 2020. The proposed project area looks to be about 1.7 acres when overlaying the footprint in provided materials on map software.

Comments:

☐ No Comments ☒ Comments Attached

Thank you for providing DAR the opportunity to review and comment on the proposed project. Should there be any changes to the project plan, DAR requests the opportunity to review and comment on those changes.

Comments Approved: _____ Date: Jun 9, 2020
Brian J. Neilson
DAR Administrator

DAR# CV0014

Comments

Erosion and Land Based Source of Pollution (LBSP) Mitigation:

DAR recommends that best management practices for mitigation of erosion and LBSP be outlined in the EA. The close proximity to Mānoa Stream should be considered during design and construction. Landscape design and leveling should be such that long term erosion and LBSP are minimized.

During construction these measures would include any type of barrier (e.g. sediment barriers/bags, petroleum absorption diapers, etc.) that limits the amount of sediment or LBSP (e.g. petroleum products, chemicals, debris, etc.) to the maximum extent practicable. DAR recommends that all construction materials be composed of environmentally inert materials to the extent practicable. The Contractor shall consider the weather while performing construction. Some work may be performed during low rain conditions, but all construction would be halted during storm conditions or when storm conditions threaten the watershed.

DAR would like to request notification and photo-documentation of any occurrence where above-average amounts of sediment or pollution have entered the water, in order to assess impact, if any.

Consideration for Aquatic Life:
The primary danger to adjacent aquatic life is sediment and LBSP runoff. If there are other potential dangers associated with this work, they should be addressed in the EA.

BELT COLLINS

BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

July 23, 2020
2020.70.0200 / 20P-058

Mr. Brian J. Neilson
DAR Administrator
State of Hawai'i
Department of Land and Natural Resources
Division of Aquatic Resources
1151 Punchbowl Street, Room 330
Honolulu, Hawai'i 96813

Dear Mr. Neilson:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your memorandum dated June 8, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

1. **Recommends BMP for mitigation of erosion and Land Based Source Pollution (LBSP) be outline in EA. The project's proximity to Mānoa Stream should be considered during design and construction. Landscape design and leveling should be such that long-term erosion and LBSP are minimized. Contractor shall consider the weather while performing construction.**

   Both temporary and permanent Best Management Practices (BMPs) will be used to minimize erosion and LBSP in the project area. BMPs selected would be implemented into the project to mitigate erosion impacts. Construction activities will be halted during storm conditions or when storm conditions threaten the watershed to minimize LBSP and erosion. Discussion and evaluation of BMPs will be discussed in the DEA.

2. **DAR requests notification and photo-documentation of any occurrence where above-average amounts of sediment or pollution have entered the water, in order to assess impact, if any.**

   If any above-average amounts of sediment or pollution enter waterways adjacent to the project site during construction activities, DAR will be notified and sent photo-documentation to assess any impacts.

3. **Primary danger to aquatic life is sediment and LBSP runoff. If there are any other potential dangers associated with this work, they should be addressed in EA.**

   BMPs will be used to minimize impacts to aquatic life through sediment and LBSP runoff controls. The development team is aware of the significance and sensitivity of Mānoa Stream and will take every effort to ensure that Mānoa Stream is not impacted.

Thank you for your comments and participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 27, 2020

LD 540

MEMORANDUM

FROM:

~~TO:~~ **DLNR Agencies:**
X Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
X Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation *(via email: DLNR.Intake.SHPD@hawaii.gov)*

TO:

~~FROM:~~ Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: **Pre-Consultation for an Environmental Assessment**
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing

LOCATION: 2570 Dole Street, Honolulu, Hawai'i
TMK: (1) 2-8-023:009

APPLICANT: **Belt-Collins Hawaii LLC on behalf of University of Hawai'i at Mānoa**

Transmitted for your review and comment is information on the above-referenced subject. Please submit any comments to Land Division by **June 10, 2020.**

If no response is received by the above date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee via email at the following address: barbara.j.lee@hawaii.gov. Thank you.

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

Signed: CSC

Print Name: Carty S. Chang, Chief Engineer
Date: May 28, 2020

Attachments
Cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji

Ref: Pre-Consultation for an Environmental Assessment Proposed University of Hawaii-Manoa Campus Student and Faculty Multi-Family Housing
TMK(s): (1) 2-8-023:009
Location: 2570 Dole Street, Honolulu, Hawaii
Applicant: Belt-Collins Hawaii LLC on behalf of University of Hawaii at Manoa

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- Kauai: County of Kauai, Department of Public Works (808) 241-4896.

The applicant should include water demands and infrastructure required to meet project needs. Please note that the projects within State lands requiring water service from their local Department/Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

The applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: May 28, 2020

BELT COLLINS

BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

July 23, 2020
2020.70.0200 / 20P-060

Mr. Carty Chang, P.E.
Chief Engineer
State of Hawai'i
Department of Land and Natural Resources
Engineering Division
Post Office Box 621
Honolulu, Hawai'i 96809

Dear Mr. Chang:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your memorandum dated May 28, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

1. **Rules and regulations of the National Flood Insurance Program (NFIP) when development falls within a Special Flood Hazard Area.**

   The parcel is located within a NFIP Special Flood Hazard Area because the property line of the parcel is the centerline of Mānoa Stream. However, any construction activities and development will be located well inland of the stream and stream edge. Questions regarding local flood ordinances will be directed to the City and County of Honolulu's Department of Planning and Permitting.

2. **Applicant should include water demands and infrastructure requirements needed to meet project needs.**

   A discussion of water demands and infrastructure requirements for the project will be included in the DEA. The Board of Water Supply (BWS) will be compensated for the Water System Facilities Charges for resource development, transmission and daily storage as required.

3. **Applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections.**

   Once determined, water demand and calculations will be provided to the Department of Land and Natural Resource's Engineering Division for inclusion in the State Water Projects Plan Update projections.

Thank you again for your comments and participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 27, 2020

LD 540
Log no 2655

MEMORANDUM

From: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
__Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
__Commission on Water Resource Management
__Office of Conservation & Coastal Lands
Land Division – Oahu District
Historic Preservation *(via email: DLNR.Intake.SHPD@hawaii.gov)*

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT: **Pre-Consultation for an Environmental Assessment**
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing

LOCATION: 2570 Dole Street, Honolulu, Hawai'i
TMK: (1) 2-8-023:009

APPLICANT: **Belt-Collins Hawaii LLC on behalf of University of Hawai'i at Mānoa**

Transmitted for your review and comment is information on the above-referenced subject. Please submit any comments to Land Division by **June 10, 2020.**

If no response is received by the above date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee via email at the following address: barbara.j.lee@hawaii.gov. Thank you.

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

Signed: DGS

Print Name: DAVID G. SMITH
Date: Jun 10, 2020

Attachments
Cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

June 8, 2020

Log no. 2655

MEMORANDUM

TO: RUSSELL Y. TSUJI, Administrator
Land Division

FROM: DAVID G. SMITH, Administrator
Division of Forestry and Wildlife

SUBJECT: Division of Forestry and Wildlife Comments on Pre-Consultation for Environmental Assessment for University of Hawai'i-Mānoa Campus Student and Faculty Multi-Family Housing

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your inquiry regarding pre-consultation for an Environmental Assessment for the proposed University of Hawai'i-Mānoa Campus student and faculty multi-family housing on previous developed land near Mānoa Stream in Honolulu on O'ahu, Hawai'i, TMK: (1) 2-8-023:009. The proposed project consists of the construction of two buildings 12 to 18 stories tall with 400 units total, and will include additional childcare, retail, and circulation facilities.

The State endangered White Tern (*Gygis alba*) has been recorded nesting at the proposed project site. If tree trimming or removal is planned, DOFAW strongly recommends surveying for the presence of White Terns prior to any action that could disturb the trees. White Tern pairs lay their single egg in a branch fork with no nest. The eggs and chicks can be easily dislodged by construction equipment that nudges the trees. If a nest is discovered, please notify DOFAW staff at (808) 587-0166 for assistance.

We note that artificial lighting can adversely impact seabirds that may pass through the area at night by causing disorientation. This disorientation can result in collision with manmade artifacts or grounding of birds. For nighttime lighting that might be required, DOFAW recommends that all lights be fully shielded to minimize impacts. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawai'i please visit: https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

The State listed Hawaiian Hoary Bat or 'Ōpe'ape'a (*Lasiurus cinereus semotus*) has the potential to occur in the vicinity of the project area and may roost in nearby trees. If any site clearing is required this should be timed to avoid disturbance during the bat birthing and pup rearing season (June 1 through September 15). If this cannot be avoided, woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed without consulting DOFAW.

DOFAW recommends minimizing the movement of plant or soil material between worksites, such as in fill. Soil and plant material may contain invasive fungal pathogens (e.g. Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g. Little Fire Ants, Coconut Rhinoceros Beetles), or invasive plant parts that could harm our native species and ecosystems. We recommend consulting the O'ahu Invasive Species Committee at (808) 266-7994 in planning, design, and construction of the project to learn of any high-risk invasive species in the area and ways to mitigate spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. Gear that may contain soil, such as work boots and vehicles, should be thoroughly cleaned with water and sprayed with 70% alcohol solution to prevent the spread of Rapid 'Ōhi'a Death and other harmful fungal pathogens.

DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e. climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW recommends consulting the Hawai'i-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (https://sites.google.com/site/weedriskassessment/home). We recommend that you refer to www.plantpono.org for guidance on selection and evaluation for landscaping plants.

We appreciate your efforts to work with our office for the conservation of our native species. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Lauren Taylor, Protected Species Habitat Conservation Planning Coordinator at (808) 587-0010 or lauren.tavlor@hawaii.gov.

Sincerely,

DGS

DAVID G. SMITH
Administrator

BELT COLLINS

BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

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July 23, 2020
2020.70.0200 / 20P-059

Mr. David G. Smith
Administrator
State of Hawai'i
Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl Street, 325
Honolulu, Hawai'i 96813

Dear Mr. Smith:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your memorandum dated May 27, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

1. **Potential impacts on state listed species during vegetation trimming or removal**

   Prior to any tree trimming or removal activities, a qualified biologist will survey the area for the presence of white terns. If any active nests are located within the project area, the Division of Forestry and Wildlife (DOFAW) will be notified for assistance.

   For the state listed Hawaiian hoary bat, efforts will be made to avoid vegetation clearing during the birthing and pup rearing season (June 1-September 15). If avoidance is not possible during this time period, DOFAW will be consulted prior to any disturbance. DOFAW will be consulted if trimming or removal of woody vegetation is greater than 15 feet (4.6 meters) in height.

   A discussion of efforts to reduce impacts on white terns and Hawaiian hoary bats will be included in the DEA. If it becomes apparent that threatened or endangered species may be impacted, DOFAW will be contacted as soon as possible.

2. **Potential for artificial light use at night to adversely impact seabirds**

   To minimize impacts on seabirds, downward facing and shielded lighting will be installed. Efforts will be made to avoid outdoor nighttime work during seabird fledging season (September 15 – December 15). A discussion of efforts to reduce impacts on wildlife would be included in the DEA.

3. **Potential impacts created by Invasive Species**

   To control the spread of invasive species, movement of soil and plant material between worksites will be minimized. Efforts will be made to utilize suitable native species where appropriate in landscaping. Equipment, materials and personnel will be regularly cleared of excess soil and debris to reduce the spread of invasive species; and sterilization methods will be used on gear, including work boots and vehicles, to prevent the spread of fungal pathogens.

Thank you for your comments and for participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

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JADE T. BUTAY, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

May 29, 2020

Mr. Allen Kam
Belt Collins Hawaii, LLC
2153 North King Street, Suite 200
Honolulu, Hawaii 96819-4554

Dear Mr. Kam:

Subject: Your Letter Dated May 20, 2020 Requesting Comments on the Proposed Environmental Assessment for the Proposed University of Hawaii – Manoa Campus Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023: 009

Thank you for your letter regarding the proposed student and faculty multi-family housing apartments, which comprise of two buildings that will range from 12 to 18 stories with residential units, a dedicated childcare center, and retail spaces.

The existing water system is adequate to accommodate the proposed mixed-use apartment development. 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.

Proposed mixed-use developments are required to install separate domestic water meters and laterals serving the residential and non-residential spaces.

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

Water conservation measures are required for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.

RECEIVED
2020 MAY 32 PM 3:33
BELT COLLINS HAWAII

High-rise buildings with booster pumps will be required to install water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in our water system.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

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

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

BELT COLLINS

BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

July 23, 2020
2020.70.0200 / 20P-053

Mr. Ernest Y. W. Lau, P.E.
Manager/Chief Engineer
Board of Water Supply
630 South Beretania Street
Honolulu, Hawai'i 96843

Dear Mr. Lau:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your letter dated May 29, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

1. **Adequacy of existing water system and final decision of water availability.**

   Your response confirms that the existing water system is adequate to accommodate the project's water needs. We acknowledge that a final decision on water availability will be confirmed by Board of Water Supply (BWS) upon submitting a building permit application.

2. **Mixed-Use developments are required to install separate domestic water meters and laterals serving the residential and non-residential spaces.**

   We acknowledge that the installation of separate domestic water meters and laterals is required to serve the residential and non-residential spaces. Final metering configuration will be determined during the design process.

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

   Upon confirmation of water availability by BWS, payment for the Water System Facilities Charges for resource development, transmission and daily storage will be made as required by BWS Resolution No. 780 Revision to the Schedule of Rates and Charges for the Furnishing of Water and Water Service.

4. **Water conservation measures are required for the proposed development.**

   Water conservation measures will be incorporated into the project design. The type and location will be determined during the design stage.

5. **High-rise buildings with booster pumps will be required to install water hammer arresters or expansion tanks to reduce pressure spikes and potential main breaks in the water system**

   Booster pumps will have water hammer arrestors or expansion tanks, as required, to reduce pressure spikes and potential water main breaks in the water system

6. **Proposed mixed-use developments and high-rise building design requirements, including BWS Cross-Connection Control and Blackflow Prevention requirements.**

   Building design requirements will be reviewed and integrated into the project as appropriate as part of the building permit application process.

7. **On-site fire protection requirements.**

   On-site fire protection will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

Thank you for your comments and participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai‘i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 Ulu`ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 20-257

May 22, 2020

Mr. Allen Kam, Director of Planning
Belt Collins
2153 N. King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Kam:

Subject: Pre-Consultation for an Environmental Assessment,
Proposed University of Hawaii-Manoa Campus
Student and Faculty Multi-Family Housing,
2570 Dole Street, TMK: 2-8-023:009

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

This is our comments as follows:

- During construction and upon completion of the project, any damages/deficiencies along the bridges, sidewalks, and/or roadways on Dole Street shall be repaired to City standards and accepted by the City and at no cost to the City and County of Honolulu.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

w/ Ross S. Sasamura, P.E.
for Director and Chief Engineer

BELT COLLINS

BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

July 23, 2020
2020.70.0200 / 20P-056

Mr. Ross S. Sasamura
Director
City & County of Honolulu
Department of Facility Maintenance
1000 Uluohia Street, Suite 215
Kapolei, Hawai'i 96707

Dear Mr. Sasamura:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your letter dated May 12, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

1. **Construction related damages/deficiencies along bridges, sidewalks, and/or roadways along Dole Street.**

   Any damages/deficiencies along the bridges, sidewalks, and/or roadways on Dole Street as a result of project construction activities will be repaired to City standards and require acceptance by the City at no cost to the City and County of Honolulu.

Thank you for your comments and participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR

KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

EUGENE H. TAKAHASHI
DEPUTY DIRECTOR

June 12, 2020 2020/ELOG-945(GT)

Mr. Allen Kam
Director of Planning
Belt Collins Hawaii LLC
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Kam:

SUBJECT: Pre-Assessment Consultation
Draft Environmental Assessment (EA)
Chapter 343, Hawaii Revised Statutes
Proposed University of Hawaii – Manoa (UHM) Campus
Student and Faculty Multi-Family Housing
2570 Dole Street - Manoa
Tax Map Key 2-8-023: 009

This is in response to your letter (received May 15, 2020), requesting comments on the pre-assessment consultation for the proposed UHM Campus Student and Faculty Multi-Family Housing (Project). We have reviewed the information provided and offer the following comments:

1. Land Use Permits Division:

The proposal requires a Minor Modification to the Plan Review Use Permit No. 2009/PRU-3 (PRU) for the UHM campus, approved by the City Council on March 17, 2010, as Resolution No. 09-341, CD1, FD1. As such, the EA will need to be completed before the PRU can be processed. The Draft EA should explain the how the Project will comply with the requirements for a Minor Modification to the existing PRU.

The Draft EA should:

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a. Explain how the proposed Project will comply with the requirements of the R-5 Residential District and discuss any development standards that may need to be modified.

b. List all permits required.

c. Include specific proposals pertaining to the nearby bus stop, future location of a rail station and mechanisms to ensure pedestrian safety. We recommend that the Applicant keep the Department of Transportation Services and the Honolulu Authority on Rapid Transit informed and involved with the Project.

d. Discuss how the proposed height of buildings compare to those nearby and impact neighborhood character.

e. Include materials associated with the conversion of the NOAA site including the history of the property, current use, proposed project, and the relationship to the current PRU housing projects.

f. Include images that show how the Project will impact neighboring views. Specifically, what the building(s) will look like from the St. Louis Drive and Dole Street intersection and from the University Avenue and Dole Street intersection.

2. Planning Division:

a. Oahu General Plan (GP): The Draft EA should discuss how the proposed UHM Campus Student and Faculty Multi-Family Housing project fulfills the objectives and policies of the GP and the proposed revised GP (Resolution 20-44).

b. Primary Urban Center Development Plan (PUC DP): The EA should discuss how the proposed Project fulfills the policies and guidelines of the PUC DP and how the proposed Project will assist in fulfilling the long-term vision of the Primary Urban Center area. Please also be advised that the PUC DP is being updated and materials regarding existing conditions of topics such as infrastructure and transportation, can be found on the Project website www.pucdp.com.

c. Climate Change: In accordance with the Honolulu Climate Change Commission's Climate Change Brief (June 5, 2018), the City and County of Honolulu recognizes that the median global temperature is projected to increase 5.8 degrees Fahrenheit (3.2 degrees Celsius) this century. In addition, "warming air temperatures can lead to heat waves, expanded pathogen ranges and invasive species, thermal stress for native flora and

fauna, increased electricity demand, potential threats to human health, and increased evapotranspiration which both reduces water supply and increases demand".

d. The United States Environmental Protection Agency notes that the same measures commonly used to mitigate urban "heat islands" also help to address the adverse effects of global climate change. Heat islands are a phenomenon whereby some urbanized areas experience elevated surface and atmospheric temperatures when compared to nearby rural areas.

e. To address the effects of global climate change, the EA should include an analysis of Low Impact Development (LID) and conservation best management practices that may help mitigate elevated temperatures and evapotranspiration on the Project site. A suitable analysis may consider for example, green or cool roof(s), opportunities for permeable paving or reduced hardscape, on-site storm water retention and/or filtration, shade trees, and water conservation measures.

f. These comments are pursuant to City and County of Honolulu Directive 18-2 (July 16, 2018), and may be updated as needed.

3. Site Development Division:

a. The Applicant shall address how the Project will comply with the Revised Ordinances of Honolulu (ROH) Chapter 21A (Flood Hazard Areas) as a portion of the property is within the floodway.

b. The Applicant should address the Project's compliance with park dedication requirements.

c. We have no objections to the proposed UHM campus student and faculty housing.

Please submit a Site Development Division Master Application Form for Sewer Connection.

d. If the Project is categorized as Priority A, pursuant to the prevailing "Rules Relating to Water Quality" ("Rules"), then the Draft EA should include a narrative describing the Project's post-construction storm water quality strategic plan to comply with the Rules. The narrative should include a written description of the proposed development, expected activities and pollutants that will be generated by activities at the site, LID site design strategies that will be used to comply with the Rules and include a development schedule.

Further, a drainage report may be required. If required, the report shall, among other things, demonstrate compliance with the UHM Drainage Master Plan-January 2020 and the prevailing "Storm Drainage Standards" ("Standards").

e. The Project's compliance with the Rules and Standards would be verified at the time that the grading/construction plans are submitted for review.

f. Comments by the Traffic Review Branch will be provided upon review of the Draft EA and traffic study.

4. Building Division:

The Minor Modification to the PRU needs to address all areas of non-compliance with the Land Use Ordinance (LUO) as follows but not limited to:

a. Height

b. Height setbacks

c. Yard setbacks

d. Required parking stalls

e. Required loading stalls

f. Long and short term bicycle spaces.

g. The type(s) of proposed commercial activity, e.g., retail, is allowed, either as an accessory to the campus or as its own principal use.
If accessory or principal use, any restrictions/guidelines on signage?

h. Any LUO or PRU required landscaping.

i. All proposed modifications to the LUO development standards should be clearly disclosed in the PRU application.

Also, the Applicant must comply with ROH Chapter 21A Flood Hazard Areas and Park Dedication, if applicable.

We look forward to reviewing the Draft EA. Should you have any questions, please contact Gerald Toyomura, of our Urban Design Branch, at 768-8056.

Very truly yours,

for Kathy K. Sokugawa
Acting Director

cc: Ms. Jan Gouveia, University of Hawaii, Vice President for Administration
Mr. Ethan Thacher, Director of Development, Greystar

BELT COLLINS

BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

July 23, 2020
2020.70.0200 / 20P-061

Ms. Kathy K. Sokugawa
Acting Director
City & County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawai'i 96813

Dear Ms. Sokugawa:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your letter dated June 12, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

<u>Land Use Permits Division</u>

1. **Proposal requires Minor Modification to Plan Review Use Permit (PRU) No. 2009/PRU-3. EA will need to be completed before the PRU can be processed.**

   The EA will be completed prior to processing the PRU and explain how the project will comply with the requirements for a Minor Modification.

   a. *Explain how proposed project will comply with requirements of R-5 Residential District and discuss any development standards that may need to be modified.*

   A discussion of how the project complies with the requirements of the existing PRU permit, as modified will be included in the DEA, as these design standards would supersede those of R-5 Residential District.

b. *List all required permits.*

A list of all required permits will be included in the DEA.

c. *Include specific proposals pertaining to nearby bus stop, future location of a rail station and mechanisms to ensure pedestrian safety. Recommend keeping DOT Services and Honolulu Authority on Rapid Transit informed and involved with the project.*

There will be no changes to the bus stop or pedestrian facilities, such as cross walks. The sidewalk adjacent to the project may be closed during construction and redirected to the makai side of Dole Street.

Although a rail station was originally planned at the intersection of University Avenue and King Street, this proposal is currently not being pursued. However, if HART does pursue a station at the intersection in the future, the project will benefit from this new station.

d. *Discuss how proposed height of buildings compare to those nearby and impact neighborhood character. Include images showing how the project will impact neighboring views from the intersections of St. Luis Drive and Dole, and University and Dole.*

Buildings near the project include existing student and faculty houses such as Gateway Hall, Frear Hall, and Hale Mānoa which range in height from 11 to 13 stories. The project's proposed 12 to 18 stories would be similar in character and height to these existing buildings. A discussion of any possible impacts to the neighborhood character and images showing how the project may impact neighboring views from the specified intersections will be included in the DEA.

e. *Include materials associated with conversion of NOAA site including property history, current use, proposed project, and relationship to current PRU housing projects*

A historic architectural Reconnaissance Level Survey (RLS) is being prepared as part of the DEA process to determine the significance of the buildings at

the project site since they are more than 50 years old and the results will be included the DEA. The RLS survey form will be submitted to the State Historic Preservation Division (SHPD) as a part of Section 6E compliance.

f. *Impacts on neighboring views.*

Photo simulations of the proposed building will be included in the DEA that depict views from the St. Louis Drive/Dole Street intersection and from the University Avenue/Dole Street intersection.

<u>Planning Division</u>

1. **Concerns about General Plan (GP) and Primary Urban Center Development Plan (PCU DP)**

   The DEA will discuss how the project fulfills the applicable objectives, policies, long-term visions, and guidelines set forth in the GP and PUC DP.

2. **Addressing Climate Change Impacts**

   The project will consider Leadership in Energy and Environmental Design (LEED) silver certified standards as guidelines in the design process. A discussion of Low Impact Development mitigation measures and other conservation Best Management Practices (BMPs) will be included in the DEA.

<u>Site Development Division</u>

1. **Compliance with Revised Ordinances of Honolulu (ROH) Chapter 21A Flood Hazard Areas and park dedication requirements.**

   Construction activities and development will be confined to Zone X areas outside of Mānoa Stream and the AE Zone area found onsite. Both temporary and permanent BMPs will be used to prevent construction related runoff from exiting the work area and entering the stream or AE zone. A discussion of BMPs implemented will be included in the DEA.

   Park dedication requirements are not applicable to the proposed project. The University of Hawaiʻi Mānoa's (UHM) Long Range Development Plan (LRDP) and PRU permit (Resolution No. 09-341, CD1, FD1) however, focus on usable open spaces throughout the campus and provide a park-like feeling by incorporating

outdoor malls, plazas and mature tree canopy cover. The park-like feeling would not be impacted by the project.

2. **Project categorization of Priority A under Rules Relating to Water Quality ("Rules") and drainage report.**

   During construction, temporary BMPs will be used to control and minimize project related erosion and sedimentation and permanent post-construction BMPs, like detention basins or rain gardens, will be implemented to minimize future stormwater impacts. A discussion of both temporary and permanent BMPs selected will be included in the DEA.

3. **Site Development Division Master Application Form for Sewer Connection.**

   A Site Development Division Master Application Form for Sewer Connection will be submitted.

<u>Building Division</u>

1. **The Minor Modification to address areas of non-compliance with the Land Use Ordinance (LUO).**

   The Minor Modification to the PRU will address areas of non-compliance with the LUO as appropriate.

Thank you again for your comments and participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawaiʻi, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

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2020 MAY 32 AM 11: 16
BELT COLLINS HAWAII

DEPARTMENT OF PARKS & RECREATION

CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

May 26, 2020

Mr. Allen Kam, Director of Planning
Belt Collins Hawaii LLC
2153 North King Street, Suite 200
Honolulu, Hawaii 96819-4554

Dear Mr. Kam:

SUBJECT: Environmental Assessment-Pre-Consultation, University of Hawaii-Manoa Campus Student and Faculty Multi-Family Housing
TMK: 2-8-023:009

Thank you for the opportunity to review and comment at the pre-consultation stage of the Environmental Assessment for the proposed subject of the University of Hawaii Student and Faculty Multi-Family housing project.

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
(813244)

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

July 23, 2020
2020.70.0200 / 20P-057

Ms. Michele K. Nekota, Director
City & County of Honolulu
Dept. of Parks and Recreation
1000 Uluohia Street, Suite 309
Kapolei, Hawaiʻi 96707

Dear Ms. Nekota:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your letter dated May 26, 2020, stating that the Department of Parks and Recreation does not have any pre-consultation comments on the Draft Environmental Assessment (DEA) for the proposed University of Hawaiʻi Student and Faculty Multi-Family Housing project on the Mānoa campus. As requested, your office will be removed from the consulted party list for the remainder of this environmental review process.

Thank you for participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawaiʻi, Vice President for Administration
Mr. Ethan Thacher, Director, Development, Greystar

DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 308, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 768-3486 ● FAX: (808) 768-3487 ● WEBSITE: http://envhonolulu.org

KIRK CALDWELL
MAYOR

LORI M.K. KAHIKINA, P.E.
DIRECTOR

TIMOTHY A. HOUGHTON
DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.
DEPUTY DIRECTOR

IN REPLY REFER TO
PRO 20-054

May 29, 2020

Mr. Allen Kam, Director of Planning
Belt Collins Hawaii LLC
2153 North King Street, Suite 200
Honolulu, Hawaii 96819-4554

Dear Mr. Kam:

SUBJECT: Pre-Consultation for an Environmental Assessment, Proposed University of Hawaii-Manoa Campus, Student and Faculty Multi-Family Housing, 2570 Dole Street, TMK: 2-8-023:009, Honolulu, Oahu, Hawaii

We have reviewed your Pre-Assessment Consultation letter dated May 12, 2020. We have the following comments.

1. The proposed project site was not included in the UH Manoa 2007 Long Range Development Plan Update and therefore, was not included in the 2014 Draft UH Manoa Sewer Master Plan (see attachment).

2. Will the 2014 Draft UH Manoa Sewer Master Plan be updated to include the proposed project?

Should you have any questions, please call Lisa Kimura, Civil Engineer V, at (808) 768-3455 or email lkimura1@honolulu.gov.

Sincerely,

Lori M.K. Kahikina, P.E.
Director

Attachment

cc: DPP, SDD, Wastewater Branch

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2020 JUN -2 PM 2:31
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DRAFT

UNIVERSITY OF HAWAI'I AT MĀNOA SEWER MASTER PLAN

Honolulu, O'ahu, Hawai'i

TMK: 2-8-15: 01
2-8-23: 03, 09, 13 & 16
2-8-26:14
2-8-29: 01
2-9-04: 05
2-9-23: 01 & 26
3-3-56: 01

February 24, 2014

PREPARED FOR:

University of Hawai'i at Mānoa
2500 Campus Road
Honolulu, HI 96822

R. M. TOWILL CORPORATION
SINCE 1930

2024 North King Street., Suite 200
Honolulu, Hawai'i 96819-3494
(808) 842-1133 • Fax: (808) 842-1937
(RMTC Ref: 1-21945-00)

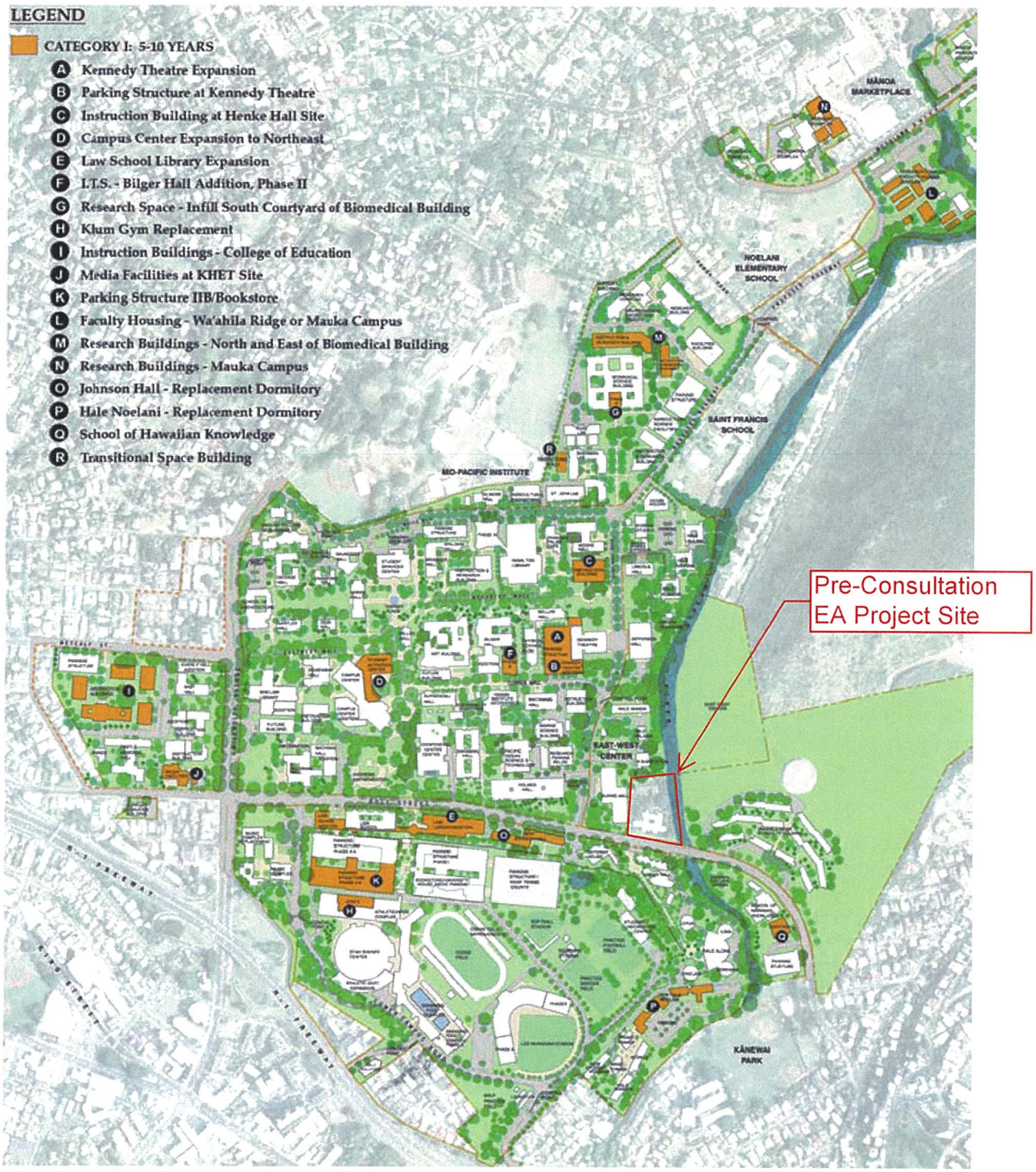

Figure 4-1: UH Mānoa 2007 LRDP Update Map

BELT COLLINS

BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

July 23, 2020
2020.70.0200 / 20P-055

Ms. Lori M. K. Kahikina
Director
City & County of Honolulu
Department of Environmental Services
1000 Uluohia Street, Suite 308
Kapolei, Hawai'i 96707

Dear Ms. Kahikina:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your letter dated May 29, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

1. **Will the University of Hawai'i Draft 2014 Mānoa Sewer Master Plan be updated to include the proposed project?**

   The University of Hawai'i will be updating their Mānoa Sewer Master Plan to include the proposed project.

Thank you for your comments and participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

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2020 MAY 32 AM 11: 16

BELT COLLINS HAWAII

KIRK CALDWELL
MAYOR

SUSAN BALLARD
CHIEF

JOHN D. McCARTHY
CLYDE K. HO
DEPUTY CHIEFS

OUR REFERENCE EO-TS

May 27, 2020

Mr. Allen Kam
Director of Planning
Belt Collins Hawaii LLC
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Kam:

This is in response to your request for comments on the Pre-Consultation, Draft Environmental Assessment, for the proposed University of Hawaii-Manoa Campus Student and Faculty Multi-Family Housing project located at 2570 Dole Street.

The Honolulu Police Department (HPD) anticipates short-term impacts to vehicular traffic around the project area. The HPD recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the project.

Additionally, the HPD would like to address public safety due to the increase in pedestrian and vehicular traffic around the proposed development. The HPD recommends implementing clearly defined crosswalks and brighter, more suitable lighting for the students, faculty, and their families during the evening hours. Lastly, due to the project's 400 residential units and additional retail component, the HPD has concerns with the security of the area when the project is completed.

If there are any questions, please call Major Joseph Trinidad of District 7 (East Honolulu) at 723-3369.

Thank you for the opportunity to review this project.

Sincerely,

ALLAN T. NAGATA
Assistant Chief of Police
Support Services Bureau

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

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July 23, 2020
2020.70.0200 / 20P-064

Mr. Allen T. Nagata
Assistant Chief of Police
Support Services Bureau
City & County of Honolulu
Police Department
801 South Beretania Street
Honolulu, Hawai'i 96813

Dear Mr. Nagata:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your letter dated May 27, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

1. **Short-term impacts to vehicular traffic during construction.**

   To mitigate against any possible short-term impacts to traffic during the construction period, all necessary safety devices will be utilized and maintained by the contractor. These may include, but not be limited to, signs, lights, barricades, and/or clearly defined crosswalks.

2. **Public safety upon completion of project**

   Efforts will be made to review and integrate adequate nighttime artificial light into the project design. Additional public safety measures may be implemented as necessary.

Thank you for your comments and participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

HONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR

MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

June 8, 2020

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2020 JUN 10 PM 12: 56
BELT COLLINS HAWAII

Mr. Allen Kam
Director of Planning
Belt Collins Hawaii LLC
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Kam:

Subject: Preconsultation for an Environmental Assessment
Proposed University of Hawaii at Manoa Campus Student and Multi-Family Housing
2570 Dole Street
Honolulu, Hawaii 96822
Tax Map Key: 2-8-023: 009

In response to your letter dated May 12, 2020, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires that the following be complied 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 (46 meters) 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; 2012 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1.)

   A fire department access road shall extend to within 50 feet (15 meters) 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; 2012 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 (45,720 millimeters) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; 2012 Edition, Section 18.3.1, as amended.)

3. The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1; 2012 Edition, Sections 18.2.3.4.1.1 and 18.2.3.4.1.2, as amended.)

4. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Battalion Chief Wayne Masuda of our Fire Prevention Bureau at 723-7151 or wmasuda@honolulu.gov.

Sincerely,

JASON SAMALA
Assistant Chief

JS/TC:bh

BELT COLLINS

BELT COLLINS HAWAII LLC
2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

July 23, 2020
2020.70.0200 / 20P-063

Mr. Jason Samala
Assistant Chief
City & County of Honolulu
Honolulu Fire Department
636 South Street
Honolulu, Hawai'i 96813

Dear Mr. Samala:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your letter dated June 8, 2020, commenting on the pre-consultation for the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

1. **Fire Department Access Road**

   Fire access routes will be provided at the project site.

2. **Fire Protection**

   The municipal water system will provide the project site with potable water and flow requirements for fire protection.

3. **Unobstructed width and vertical clearance**

   The fire apparatus access road will meet City & County requirements and have unobstructed width and vertical clearances.

4. **Civil Drawings**

   Upon completion, civil drawings will be submitted to the Honolulu Fire Department for review and approval. National Fire Protection Association requirements for Fire Department access and water supply will be reviewed and integrated into the project.

Thank you for your comments and participating in the HRS Chapter 343 environmental review process. Your letter and this response will be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai‘i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

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2020 JUN 25 PM 1:42
BELT COLLINS HAWAII

KIRK CALDWELL
MAYOR

MARK YONAMINE, P.E.
DIRECTOR

HAKU MILLES, P.E.
DEPUTY DIRECTOR

June 19, 2020

Belt Collins Hawaii LLC
ATTN: Allen Kam, Director of Planning
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Dear Mr. Kam,

Subject: Pre-Consultation for an Environmental Assessment Proposed University of Hawaii-Manoa Campus Student and Faculty Multi-Family Housing
TMK: 2-8-023:009 2570 Dole Street Honolulu, Hawaii

Thank you for the opportunity to review and comment. The Department of Design and Construction does not have any comments at this time.

Should you have any further questions, please contact me at 768-8480.

Sincerely,

For Mark Yonamine, P.E.
Director

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

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July 23, 2020
2020.70.0200 / 20P-054

Mr. Mark Yonamine, P.E.
Director
City & County of Honolulu
Dept. of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawai'i 96819

Dear Mr. Yonamine:

Response to Comments
Pre-Consultation for an Environmental Assessment
Proposed University of Hawai'i-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009

Thank you for your letter dated June 19, 2020, stating that the Department of Design and Construction does not have any pre-consultation comments on the Draft Environmental Assessment (DEA) for the proposed University of Hawai'i Student and Faculty Multi-Family Housing project on the Mānoa campus. Please see our responses to your comments below:

Thank you for participating in the HRS Chapter 343 environmental review process. Your letter was dated and received after the June 12, 2020 deadline. However, your letter and this response will still be included in the DEA. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethan Thacher, Director, Development, Greystar

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

May 12, 2020
2020.70.0200 / 20P-023

Ms. Suzanne Case, Chair
State of Hawaiʻi
Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, HI 96813

Dear Ms. Case:

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

On behalf of the University of Hawaiʻi-Mānoa (UHM), we wish to inform you that the UHM is proposing to development a Multi-Family Student and Faculty Housing project on the Mānoa campus in Honolulu, Oʻahu, Hawaiʻi. The location of the project is at the former National Oceanic and Atmospheric Administration (NOAA) offices located along Dole Street next to the Mānoa Stream (see Location Map). Under the existing Plan Review Use (PRU) permit (2009/PRU-3), the undeveloped housing square footage from Hale Noelani, Johnson Hall, and the Faculty Housing projects will be transferred to this former NOAA location. The purpose of this project is to fulfill the current demand for student and faculty housing in a location that provides nearby and easy access to the UHM campus facilities. Students and faculty will be able to walk to their classrooms rather than driving and enjoy the numerous amenities available on campus, such as dining, exercising, and recreation.

The project proposes to construct two buildings that will range from 12 to 18 stories in height with the first two floors dedicated to the childcare center, retail and circulation. The 3rd to 18th floors will contain the residential units. A total of 400 units are planned with a mix of studios, one-, two- and three-bedroom units. The existing childcare center located at Castle Memorial Hall at 2320 Dole Street will be relocated to this site when the development is completed. A small retail component of the project will service the new residents as well as other campus users. Limited vehicular parking will be provided because the residents will mainly be walking to the classrooms on campus. Bike share, UHM shuttle service, car share, The Bus, Uber and Lyft services will be available for travel to other nearby conveniences such as grocery shopping, restaurants, and other commercial businesses.

Pursuant to Chapter 343, Hawai'i Revised Statutes, an Environmental Assessment (EA) will be prepared for this project and subsequently made available for public review. If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the attached maps and submit your written comments to the address below by June 12, 2020.

Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Attention: Allen Kam, Director of Planning

Comments received during this period will be considered in the preparation of the Draft EA. When the Draft EA is completed, a copy will be sent to you for further review and input.

We thank you for your interest and participation in this project. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

JEH:gmk

Enclosures:
1. Figure 1: Location Map
2. Figure 2: Conceptual Site Plan

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

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May 12, 2020
2020.70.0200 / 20P-023

Mr. Ernest Y. W. Lau, P.E.
Manager/Chief Engineer
Board of Water Supply
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Lau:

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

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Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Attention: Allen Kam, Director of Planning

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We thank you for your interest and participation in this project. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

JEH:gmk

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2. Figure 2: Conceptual Site Plan

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

May 12, 2020
2020.70.0200 / 20P-023

Mr. Ross S. Sasamura
Director
City & County of Honolulu
Department of Facility Maintenance
1000 Uluohia Street, Suite 215
Kapolei, Hawaii 96707

Dear Mr. Sasamura:

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

On behalf of the University of Hawaiʻi-Mānoa (UHM), we wish to inform you that the UHM is proposing to development a Multi-Family Student and Faculty Housing project on the Mānoa campus in Honolulu, Oʻahu, Hawaiʻi. The location of the project is at the former National Oceanic and Atmospheric Administration (NOAA) offices located along Dole Street next to the Mānoa Stream (see Location Map). Under the existing Plan Review Use (PRU) permit (2009/PRU-3), the undeveloped housing square footage from Hale Noelani, Johnson Hall, and the Faculty Housing projects will be transferred to this former NOAA location. The purpose of this project is to fulfill the current demand for student and faculty housing in a location that provides nearby and easy access to the UHM campus facilities. Students and faculty will be able to walk to their classrooms rather than driving and enjoy the numerous amenities available on campus, such as dining, exercising, and recreation.

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Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Attention: Allen Kam, Director of Planning

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We thank you for your interest and participation in this project. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

JEH:gmk

Enclosures:
1. Figure 1: Location Map
2. Figure 2: Conceptual Site Plan

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

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May 12, 2020
2020.70.0200 / 20P-023

Ms. Kathy K. Sokugawa
Acting Director
City & County of Honolulu
Dept. of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

Dear Ms. Sokugawa:

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

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Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Attention: Allen Kam, Director of Planning

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We thank you for your interest and participation in this project. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

JEH:gmk

Enclosures:
1. Figure 1: Location Map
2. Figure 2: Conceptual Site Plan

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

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May 12, 2020
2020.70.0200 / 20P-023

Ms. Michele K. Nekota
Director
City & County of Honolulu
Dept. of Parks and Recreation
1000 Uluohia Street, Suite 309
Kapolei, Hawaii 96707

Dear Ms. Nekota:

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

On behalf of the University of Hawaiʻi-Mānoa (UHM), we wish to inform you that the UHM is proposing to development a Multi-Family Student and Faculty Housing project on the Mānoa campus in Honolulu, Oʻahu, Hawaiʻi. The location of the project is at the former National Oceanic and Atmospheric Administration (NOAA) offices located along Dole Street next to the Mānoa Stream (see Location Map). Under the existing Plan Review Use (PRU) permit (2009/PRU-3), the undeveloped housing square footage from Hale Noelani, Johnson Hall, and the Faculty Housing projects will be transferred to this former NOAA location. The purpose of this project is to fulfill the current demand for student and faculty housing in a location that provides nearby and easy access to the UHM campus facilities. Students and faculty will be able to walk to their classrooms rather than driving and enjoy the numerous amenities available on campus, such as dining, exercising, and recreation.

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Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Attention: Allen Kam, Director of Planning

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We thank you for your interest and participation in this project. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

JEH:gmk

Enclosures:
1. Figure 1: Location Map
2. Figure 2: Conceptual Site Plan

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

May 12, 2020
2020.70.0200 / 20P-023

Ms. Lori M. K. Kahikina
Director
City & County of Honolulu
Dept. of Environmental Services
1000 Uluohia Street, Suite 308
Kapolei, Hawaii 96707

Dear Ms. Kahikina:

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

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Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Attention: Allen Kam, Director of Planning

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We thank you for your interest and participation in this project. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

JEH:gmk

Enclosures:
1. Figure 1: Location Map
2. Figure 2: Conceptual Site Plan

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BELT COLLINS

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2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

May 12, 2020
2020.70.0200 / 20P-023

Mr. Robert J. Kroning, P.E.
Director
City & County of Honolulu
Dept. of Design & Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Dear Mr. Kroning

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

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Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Attention: Allen Kam, Director of Planning

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BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

JEH:gmk

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cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BELT COLLINS

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2153 NORTH KING STREET
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HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

May 12, 2020
2020.70.0200 / 20P-023

Chief Susan Ballard
City & County of Honolulu
Honolulu Police Department
801 South Beretania Street
Honolulu, HI 96813

Dear Chief Ballard:

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

On behalf of the University of Hawaiʻi-Mānoa (UHM), we wish to inform you that the UHM is proposing to development a Multi-Family Student and Faculty Housing project on the Mānoa campus in Honolulu, Oʻahu, Hawaiʻi. The location of the project is at the former National Oceanic and Atmospheric Administration (NOAA) offices located along Dole Street next to the Mānoa Stream (see Location Map). Under the existing Plan Review Use (PRU) permit (2009/PRU-3), the undeveloped housing square footage from Hale Noelani, Johnson Hall, and the Faculty Housing projects will be transferred to this former NOAA location. The purpose of this project is to fulfill the current demand for student and faculty housing in a location that provides nearby and easy access to the UHM campus facilities. Students and faculty will be able to walk to their classrooms rather than driving and enjoy the numerous amenities available on campus, such as dining, exercising, and recreation.

The project proposes to construct two buildings that will range from 12 to 18 stories in height with the first two floors dedicated to the childcare center, retail and circulation. The 3rd to 18th floors will contain the residential units. A total of 400 units are planned with a mix of studios, one-, two- and three-bedroom units. The existing childcare center located at Castle Memorial Hall at 2320 Dole Street will be relocated to this site when the development is completed. A small retail component of the project will service the new residents as well as other campus users. Limited vehicular parking will be provided because the residents will mainly be walking to the classrooms on campus. Bike share, UHM shuttle service, car share, The Bus, Uber and Lyft services will be available for travel to other nearby conveniences such as grocery shopping, restaurants, and other commercial businesses.

Pursuant to Chapter 343, Hawai'i Revised Statutes, an Environmental Assessment (EA) will be prepared for this project and subsequently made available for public review. If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the attached maps and submit your written comments to the address below by June 12, 2020.

Belt Collins Hawai'i LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Attention: Allen Kam, Director of Planning

Comments received during this period will be considered in the preparation of the Draft EA. When the Draft EA is completed, a copy will be sent to you for further review and input.

We thank you for your interest and participation in this project. If you have any questions, please contact the undersigned at 521-5361 or by email at akam@bchdesign.com.

Sincerely yours,

BELT COLLINS HAWAII LLC

Allen Kam
Director of Planning

JEH:gmk

Enclosures:
1. Figure 1: Location Map
2. Figure 2: Conceptual Site Plan

cc: Ms. Jan Gouveia, University of Hawai'i, Vice President for Administration
Mr. Ethen Thacher, Director, Development, Greystar

BELT COLLINS

BELT COLLINS HAWAII LLC

2153 NORTH KING STREET
SUITE 200
HONOLULU, HAWAII 96819

TEL_808.521.5361
FAX_808.538.7819

BCHDESIGN.COM

May 12, 2020
2020.70.0200 / 20P-023

Chief Manuel P. Neves
City & County of Honolulu
Honolulu Fire Department
636 South Street
Honolulu, Hawaii 96813

Dear Chief Neves:

Pre-Consultation for an Environmental Assessment
Proposed University of Hawaiʻi-Mānoa Campus
Student and Faculty Multi-Family Housing
Tax Map Key: 2-8-023:009
2570 Dole Street
Honolulu, Oʻahu, Hawaiʻi

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NORTH

0 100 300 500
SCALE IN FEET

Figure 1
LOCATION MAP

UHM Multi-Family Project
May 2020

Source: NAC Architecture

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NORTH

0 50 100 150

SCALE IN FEET

Figure 2
CONCEPTUAL SITE PLAN

UHM Multi-Family Project
May 2020

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