State Land Use District Boundary Amendment Application

Brigham Young University - Hawai‘i
14.9-Acre Campus Expansion
Lā‘ie, Ko‘olauloa District, O‘ahu, Hawai‘i

May 2018 (Updated June 2018)

PREPARED FOR:
Brigham Young University - Hawai‘i
55-510 Kamehameha Highway
Lā‘ie, Hawai‘i 96762

PREPARED BY:
R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawai‘i 96819-3494
State Land Use District Boundary Amendment Application

Prepared in accordance with Hawai‘i Revised Statutes, Chapter 205 and the Revised Ordinances of Honolulu, Chapter 26

Brigham Young University - Hawai‘i
14.9-Acre Campus Expansion

Lō‘ie, Kō‘olauloa District, O‘ahu, Hawai‘i
Tax Map Key: (1) 5-5-006:005, 032 and 035

May 2018 (Updated June 2018)

PREPARED FOR:
Brigham Young University - Hawai‘i
55-220 Kulanui Street
Lō‘ie, Hawai‘i 96762

PREPARED BY:
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2024 North King Street, Suite 200
Honolulu, Hawai‘i 96819-3494
RMTC Reference No.1-22901
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<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ALISH</td>
<td>Agricultural Lands of Importance to the State of Hawai‘i</td>
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<td>AIS</td>
<td>Archaeological Inventory Survey</td>
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<tr>
<td>BFE</td>
<td>Base flood elevations</td>
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<tr>
<td>BYU-H</td>
<td>Brigham Young University – Hawai‘i</td>
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<tr>
<td>CCH</td>
<td>City and County of Honolulu</td>
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<tr>
<td>CMP</td>
<td>Campus Master Plan</td>
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<tr>
<td>CSH</td>
<td>Cultural Surveys Hawaii</td>
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<tr>
<td>CUP</td>
<td>Conditional Use Permit</td>
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<td>DLU</td>
<td>Department of Land Utilization, CCH – Predecessor agency to DPP.</td>
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<td>DMP</td>
<td>Drainage Master Plan</td>
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<td>DPP</td>
<td>Department of Planning and Permitting</td>
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<td>FTE</td>
<td>Full Time Equivalent</td>
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<tr>
<td>EA</td>
<td>Environmental assessment</td>
</tr>
<tr>
<td>EGBRA</td>
<td>Ethnobotanical Garden and Biology Research Area</td>
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<tr>
<td>ENV</td>
<td>CCH Department of Environmental Services</td>
</tr>
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<td>EUTTB</td>
<td>Electric Utilities Transformer Telecommunication Building</td>
</tr>
<tr>
<td>GET</td>
<td>General Excise Tax</td>
</tr>
<tr>
<td>HECO</td>
<td>Hawaiian Electric Company</td>
</tr>
<tr>
<td>HRI</td>
<td>Hawai‘i Reserves Inc.</td>
</tr>
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<td>HRS</td>
<td>Hawai‘i Revised Statutes</td>
</tr>
<tr>
<td>IAL</td>
<td>Important Agricultural Lands</td>
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<tr>
<td>I-Work</td>
<td>International Work Opportunity Returnability Kuleana</td>
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<td>KSCP</td>
<td>Ko‘olau Loa Sustainable Communities Plan, CCH</td>
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<tr>
<td>LCA</td>
<td>Land Court Awards</td>
</tr>
<tr>
<td>LCAI</td>
<td>Lā‘ie Concrete and Aggregate, Inc.</td>
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<td>LDS</td>
<td>Church of Jesus Christ of Latter Day Saints</td>
</tr>
<tr>
<td>LID</td>
<td>Low Impact Development</td>
</tr>
<tr>
<td>LPG</td>
<td>Liquid Petroleum Gas Tank</td>
</tr>
<tr>
<td>LRFI</td>
<td>Literature Review and Field Inspection</td>
</tr>
<tr>
<td>LSB</td>
<td>Land Study Bureau</td>
</tr>
<tr>
<td>LTCL</td>
<td>Lā‘ie Trucking Company, LTD</td>
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# Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>LUO</td>
<td>Land Use Ordinance, ROH Chapter 21</td>
</tr>
<tr>
<td>LWRF</td>
<td>Lāʻie Wastewater Reclamation Facility</td>
</tr>
<tr>
<td>MSL</td>
<td>Mean Sea Level</td>
</tr>
<tr>
<td>PCC</td>
<td>Polynesian Cultural Center</td>
</tr>
<tr>
<td>PRU</td>
<td>Planned Review Use</td>
</tr>
<tr>
<td>RMTC</td>
<td>R. M. Towill Corporation</td>
</tr>
<tr>
<td>ROH</td>
<td>Revised Ordinances of Honolulu</td>
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<tr>
<td>SCS</td>
<td>Scientific Consultant Services, Inc.</td>
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<tr>
<td>SIHP</td>
<td>State Inventory of Historic Places</td>
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<td>SLU</td>
<td>State Land Use</td>
</tr>
<tr>
<td>SLUC</td>
<td>State Land Use Commission</td>
</tr>
<tr>
<td>SLUDBA</td>
<td>State Land Use District Boundary Amendment</td>
</tr>
<tr>
<td>SHPD</td>
<td>State Historic Preservation Division of the Department of Land and Natural Resources</td>
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<td>TMD</td>
<td>Traffic Demand Management</td>
</tr>
<tr>
<td>TMK</td>
<td>Tax Map Key</td>
</tr>
<tr>
<td>TVA</td>
<td>Temple View Apartments</td>
</tr>
<tr>
<td>WFRMP</td>
<td>Wailele Flood Risk Management Project</td>
</tr>
<tr>
<td>ZSC</td>
<td>Zion Securities Corporation</td>
</tr>
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</table>
A. Master Application Form
B. Fee
PLANNING DIVISION MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing." PLEASE ASK FOR THESE INSTRUCTIONS.

All specified materials described in the "Instructions for Filing" and required fees must accompany this form; incomplete applications will delay processing. You are encouraged to consult with Planning Division staff in completing the application. Please call appropriate phone number given in the "Instructions for Filing".

Please print legibly or type the required information.

SUBMITTED FEE: $ 5,200

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<td>☐ GENERAL PLAN AMENDMENT</td>
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<tr>
<td>☒ STATE LAND USE BOUNDARY AMENDMENT (&lt;15 acres)</td>
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<tr>
<td>From Agricultural (District)</td>
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<tr>
<td>To Urban (District)</td>
</tr>
<tr>
<td>☐ SPECIAL USE PERMIT New Modify Existing</td>
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<tr>
<td>☐ ZONING DISTRICT BOUNDARY ADJUSTMENT, ADMINISTRATIVE</td>
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<tr>
<td>☐ DEVELOPMENT PLAN (DP)/SUSTAINABLE COMMUNITIES PLAN (SCP) AMENDMENT</td>
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<td>Indicate DP/SCP area</td>
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<tr>
<td>☐ ZONE CHANGE From (District) To (District)</td>
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<td>☐ AMEND UNILATERAL AGREEMENT TO ORDINANCE NO.</td>
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(Project/Parcel specific information should be provided for General Plan and Development Plan amendments only if appropriate.)

TAX MAP KEY(S): 5-5-006-005

STREET ADDRESS/LOCATION OF PROPERTY: 55-220 Kulanui Street, Laie Hawaii 96762

APPLICATION/SUBJECT AREA (Acres/sq.ft.): 14.9-acres

THE PROPOSED PROJECT IS LOCATED ☒ INSIDE ☐ OUTSIDE THE:

- Urban Growth Boundary
- Rural Community Boundary
- Urban Community Boundary
- Community Growth Boundary

OF THE Ko'olau Loa Sustainable Community Plan

ZONING DISTRICT(S): AG-1 and R-5

RECORDED FEE OWNER:
Name & title, if any) Eric Conrad, VP of Operations
Organization: Brigham Young University - Hawai'i
Mailing Address: 55-220 Kulanui Street
Laie, Hawaii 96762
Phone Number: (808) 675-3211
Signature

PRESENT USE(S) OF PROPERTY/BUILDING:
- 0.23-ac area; grassy area
- 0.55-ac area; parking lot & grassy area
- 2.7-ac area; parking lot, switchgear building, grassy detention area
- 1.47-ac area; PCC parking lot, and 999-ac area vacant agricultural lands

PROJECT NAME (If any): Brigham Young University - Hawai'i Campus Expansion

REQUEST/PROPOSAL (Briefly describe the nature of the request, proposed activity or project): Process the BYU-H campus expansion of 14.9-acres of SLU Agricultural to Urban District for proposed on-campus student housing, and existing utility building, and parking lots.

DPP/LOG NO.

APPLICANT:
Name: Eric Conrad, Vice President of Operations
Organization: Brigham Young University - Hawai'i
Mailing Address: 55-220 Kulanui Street
Laie, Hawaii 96762
Phone Number: (808) 675-3211
Signature

AUTHORIZED AGENT/CONTACT PERSON:
Name: James Niemann (R.M. Towill Corporation)
Mailing Address: 2024 North King Street, Suite 200
Honolulu, Hawaii 96819
Phone Number: (808) 842-1133
Signature

DPP/POSS NO.

FORM IN MASTER APPLICATION 09/31/14 DOC
R. M. Towill Corporation
2024 N. King Street Suite 200 Honolulu, Hawaii 96819-3494

PAY Four Thousand Eight Hundred and 00/100 Dollars

TO City & County of Honolulu

AMOUNT 4,800.00

Authorized Signatures

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Check Date: 5/1/2018
**PAY** Four Hundred and 00/100 Dollars

**TO** City & County of Honolulu

**AMOUNT** 400.00

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R.M. TOWILL CORPORATION
2024 N. King Street, Suite 200 • Honolulu, Hawaii 96819-3494

Check Date: 5/1/2018

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43715

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May 1, 2018
C. Written Statement
C.1 Development Proposal

C.1.a Amendment Request

The Applicant, Brigham Young University – Hawai‘i (BYU-H) requests to amend the State Land Use (SLU) District Boundary to transfer approximately 14.9-acres from the SLU Agricultural District into the SLU Urban District to accommodate the planned expansion of the BYU-H campus. The proposed boundary amendment involves five non-contiguous areas located adjacent to the existing SLU Urban District within TMK parcel [1] 5-5-06: 005 and 032, as listed in Table 1 and shown on Figure D.1, BYU-H Campus Expansion Area Map. In addition, to regularize the SLU boundary, a 0.03-acre triangle located on West Road Loop Extension is proposed to transfer from the SLU Urban to Agricultural District.

Table 1: Proposed SLU Urban District Expansion Areas

<table>
<thead>
<tr>
<th>Description</th>
<th>Area (ac)</th>
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<tbody>
<tr>
<td>North area: grassed area for expansion of married student housing (future)</td>
<td>0.12</td>
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<tr>
<td>Northwest area: one married student apartment (proposed) and parking lot</td>
<td>0.50</td>
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<tr>
<td>(existing)</td>
<td></td>
</tr>
<tr>
<td>West area: parking lot, grassed detention area and Electric Utilities Transformer and Telecommunications Building (EUTTB) (existing)</td>
<td>2.70</td>
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<tr>
<td>Southeast area: Polynesian Cultural Center parking lot (existing)</td>
<td>1.53</td>
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<tr>
<td>South area: three single student dormitories (proposed)</td>
<td>10.00</td>
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<tr>
<td><strong>Total Proposed Campus Expansion Area</strong></td>
<td><strong>14.85</strong></td>
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C.1.b Basis for the Request

The 14.9-acre expansion area is located within the BYU-H Plan Review Use (PRU) boundary established by the 1996 PRU (Resolution No. 96-321, CD1). Resolution 96-321 approves the PRU to “expand, renovate and support academic and living facilities for students, faculty and staff of the Brigham Young University”. In addition, the planned expansion is consistent with the Ko‘olau Loa Sustainable Communities Plan (KSCP), which identifies the 1996 PRU boundary as appropriate land for future campus expansion and renovation. See Section C.3.c, Consistency with State and County Plans and Programs – Ko‘olau Loa Sustainable Communities Plan.

The purpose of the campus expansion and SLU District Boundary Amendment is to:

- Improve the University’s long-term viability within the community.
- Increase the University’s academic offerings to more students.
- Accommodate the development of new single and married student housing.
- Increase total student enrollment (full time and part time) from 2,900 (2,700 full-time equivalent [FTE]) to 3,500 (3,200 FTE). FTE is a common measurement that quantifies the number of enrolled students equivalent to full time, including full time plus the calculated equivalent of full time comprised of part time students. Since the BYU-H student body includes full time and part time students, the total student enrollment (headcount) is higher than the
FTE. Throughout this SLUBA application, the total student enrollment number (headcount) is used, not the FTE number.

- Increase International Work Opportunity Returnability Kuleana (I-Work) students from 750 to 900 students.
- Increase the percentage of full-time enrolled students (single and married) living on-campus from 75 (current) to 95 percent.
- Ensure students are living in housing conducive to academic achievement.

The expansion area is located within the SLU Agricultural District (see Figure D.2, State Land Use District). Pursuant to Hawai‘i Revised Statutes (HRS) Section 205-4.5, the proposed student housing is not an allowed use within the SLU Agricultural District, therefore an amendment is required to expand the SLU Urban District boundary to include the project area. The proposed SLU Urban District expansion areas will also include the existing parking lot used by the Polynesian Cultural Center (PCC), which was approved in a prior PRU Minor Modification.

The campus expansion will support BYU-H’s planned growth in its academic mission and student enrollment and help improve the University’s long-term viability within the community. The planned expansion and ongoing campus renovation projects are designed to modernize and grow the University’s offerings with the goal of improving the quality of the students’ learning and living environment. The campus expansion represents BYU-H’s and its sponsor, The Church of Jesus Christ of Latter-day Saints (LDS), commitment to invest in the University, in Lā‘ie, and in the Koʻolau Loa region.

### C.1c Proposed Use

**Single Student Dormitories**

Expansion of the existing on-campus student housing, approved by Minor Modifications to PRU No. 94/PRU-4 in 2011 (2011/ELOG-12(ST)) and 2013 (2013/ELOG-1677(KB), 2013/MOD-1), was completed in 2014, including:

- Construction of four new dormitory buildings (Hale 7, 8, 9 and 10);
- Replacement of one old two-story dormitory building (Hale 6) with a new 3-story dormitory building; and
- Renovation of three existing two-story dormitory buildings (Hale 3, 4 and 5) to add a new third floor.

These completed projects created additional single student housing that accommodated the relocation of currently enrolled students living off-campus into on-campus housing, and were not intended to support an expansion in University enrollment.

Three new proposed single student dormitory buildings will be located in the 10-acre south expansion area. The proposed dormitories will accommodate planned enrollment growth from approximately 2,900 to 3,500 students over the next five years. The new student dormitories will also accommodate an increase in on-campus residency, from 75 to 95 percent, over the next five years. The planned increase in enrollment to 3,500 students is consistent with the KSCP policies for BYU-H. The three new dormitories, Hale 11, 12 and 13, will each have 312 beds and will accommodate an increase of approximately 936 on-campus students, including 500 new students and 436 students who currently live off-campus. BYU-H continues to monitor the total student enrollment with on-campus housing demands to plan for the development of additional on-campus housing.
The general design principle guiding the single student housing project is to maintain the medium-density, mid-rise open-space character of the BYU-H campus by minimizing the building footprint and providing multiple floors. Each building will be a four-story structure with single-loaded units around a central courtyard and capacity for 312 students. Access driveways, pedestrian walkways, student parking, landscaping, open space for recreation and drainage retention, and related drainage infrastructure and utilities will be developed within the 10-acre expansion area surrounding the new student dormitories. See Figure D.1, BYU-H Campus Expansion Area Map.

**Married Student Apartments**

One new married student Temple View Apartment building (TVA) 27 is planned within the proposed 0.5-acre SLU Urban District expansion area on the northwest side of campus and a second apartment building (TVA 26) is planned as infill development south of TVA 21 (existing) within the existing SLU Urban District boundary. The two proposed married student apartments will accommodate the planned growth in student enrollment and on-campus residency. TVA 26 and 27 will also provide flex-space to house students during future renovation of aging TVA buildings.

The general design principle guiding the married student apartment project is to maintain the medium-density, mid-rise open space character of the BYU-H campus by minimizing the building footprint and providing multiple floors. The architectural character will have gable roods, exterior stairs, and cement plaster finish. Proposed TVA 26 and 27 apartments will be three-story buildings. They will each provide 28 units including 18 one-bedroom and 10 two-bedroom apartments.

The proposed 0.5-acre expansion area also includes a paved parking lot. The paved parking lot is adjacent to married student apartment TVA 22.

**Parking Lots and Electric Utilities Transformer and Telecommunications Building (EUTTB)**

The north 0.12-acre area proposed for the SLU Urban District includes a concrete slab, ramp and various trees. The area is located adjacent to married student apartment TVA 25. The TVA 25 building may be renovated or reconstructed in the future to extend into the expanded Urban District area, although there are no active plans to do so at present.

The west 2.7-acre area proposed for the SLU Urban District includes a gravel parking lot, EUTTB, and grassed open area. The gravel parking lot is adjacent to the Heber J. Grant Building and is planned to be paved in 2018. These improvements are approved under PRU Minor Modification No. 2014/ELOG-1748(ST); 2014/MOD-93. In addition, the Jonathan Napela Center (currently the Ceramics Art Studio), which is located within the existing SLU Urban District and outside the 2.7-acre expansion area, may extend into the expanded Urban District area in the future.

The southeast 1.53-acre area proposed for SLU Urban District includes an existing paved parking lot that serves the PCC and BYU-H Campus. The parking lot was developed in three phases between 1977 and 1990 and currently contains 191 stalls, of which 127 stalls are located within the SLU Agricultural District. The parking lot is currently used by PCC employees under a lease agreement with BYU-H. The proposed SLU District Boundary Amendment will bring the parking lot use into conformance with HRS Chapter 205. See Section C.2.e, Existing Land Uses, for additional description.

**C.1.d Development Timetable**

The approximate development timeline is to:

- 2018 - 2019: Complete land use entitlements
• 2019-2020: Complete design and contracting
• 2020-2022: Construct Hale 11 and TVA 26
• 2021-2023: Construct Hale 12 and TVA 27

C.1.e  Approximate Cost
The estimated cost to develop the three single student dormitories, two married student apartment buildings, and associated infrastructure is $124 million dollars. The cost includes an estimated $34 million dollars for each dormitory, $6 million dollars for each apartment building, and $10 million dollars in associated infrastructure.

C.2  Project Background
C.2.a  Property Description
The recorded fee owner of the property is Brigham Young University – Hawai‘i.

The BYU-H campus is located within a 210.8-acre area permitted under Plan Review Use (PRU) No. 94/PRU-4, approved by City Council Resolution 96-321, CD1, and identified by TMK parcels: (1)5-5-006: 005, 032 and 035. BYU-H lands are located within the SLU Urban and Agricultural Districts. The existing and developed campus facilities, including academic buildings, university housing, student amenities, administration and support facilities, are located within the SLU Urban District, totaling approximately 110.8 acres. The SLU Agricultural District, totaling approximately 100 acres, primarily contains open space, limited agricultural cultivation, a cultural preservation area (Ni‘oi Heiau), Hawaiian Studies area, Ethnobotanical Garden and Biology Research Area (EGBRA), Lā‘ie Trucking Company, LTD (LTCL) operation yard, agricultural roads and various utilities. See Figure D.3, Tax Map Key, and Figure D.2, State Land Use District. The expansion area is located within the City and County of Honolulu (CCH), AG-1 (Agricultural-Restricted) zoning district, as established by the Land Use Ordinance (LUD), Revised Ordinances of Honolulu (ROH) Chapter 21, Article 3 (see Figure D.4, CCH Zoning).

The proposed 14.9-acre SLU Urban District expansion consists of five non-contiguous areas located within TMK parcels 005 and 032 adjacent to the existing SLU Urban District and existing campus facilities. See Section C.1.a, Table 1. The 0.12-acre north expansion area proposed for future expansion of TVA 25 includes a concrete slab, ramp, and various trees. The 0.5-acre northwest expansion area proposed for one new married student apartment building (TVA 27) includes a paved parking lot and vacant open space. The west expansion area, totaling 2.7 acres, includes a campus parking lot, open grassed areas use for drainage detention, and the EUTTB that serves the campus. The 10-acre south expansion area proposed for new single student dormitories is currently vacant open space situated adjacent to the existing on-campus single student dormitories. The 1.53-acre southeast expansion area contains an existing parking lot that has been used by the PCC since the late 1970’s. In addition, to straighten the SLU boundary, a 0.03-acre triangle located on West Road Loop Extension is proposed to transfer from SLU Urban to Agricultural.
C.2.b  Topography and Soils

Topography
The BYU-H campus is located on the low-lying coastal plain between the steep sloping mountains of the Koʻolau range and the Pacific Ocean. In general, the slopes on the BYU-H campus and in Lāʻie Town are relatively flat, between 0 percent to 2 percent grade. Mauka of the BYU-H campus, the slope rapidly increases towards the Koʻolau Mountain range. Makai of the BYU-H campus, the slope gradually extends into the ocean. North of the BYU-H campus, the slope gradually decreases towards Lāʻie Town. South of the BYU-H campus, the slope rises moderately towards Wailele Stream, with the stream banks at a higher elevation than the campus expansion area. The south 10-acre expansion area increases in elevation towards Wailele Stream, with an approximate elevation change from north to south of 16 feet to 31 feet. The four smaller expansion areas are on generally flat to sloping terrain. Typical elevations within these areas range from 6 to 9 feet in the north grassed area, 7 to 9 feet in the northwest area parking lot, 9 to 15 feet in the west area parking lot, and 12 to 15 feet in the southeast area parking lot. The BYU-H campus topography is illustrated in Figure D.5, Topography.

Soils
The project is located on the eastern coastal plains below the Koʻolau range. Soils in the campus expansion areas are generally soft to medium stiff silty clay alluvium with some coral outcropping. During recent campus improvements, it was observed that the subsurface soils vary significantly throughout the campus. In addition, the BYU-H campus has high groundwater elevations, varying between 2 ft and 8 ft MSL (RMTC, 2016).

Soils in this area, as classified by the U.S. Soil Conservation Service (USDA, 1972), are illustrated on Figure D.6, Soil Types, and described as follows:

- Haleʻiwa silty clay (HeA): Consists of well-drained soils on fans and in drainage ways along the coastal plains. They developed in alluvium derived from basic igneous material. Elevations range from sea level to 250 feet. The slope range of this soil is 0 to 2 percent. HeA soil has moderate high to high (0.60 to 1.98 in/hr) infiltration rates and very low runoff rates. The depth to water table is estimated at more than 80 inches.

- Coral outcrop (CR): Consists of coral or cemented calcareous sand. The coral reefs formed in shallow ocean water during the time the ocean stand was at a higher level. Small areas of coral outcrop are exposed on the ocean shore, on the coastal plains, and at the foot of the uplands. Elevations range from sea level to approximately 100 ft. The slope range of this soil is 0 to 25 percent. CR soil has moderately high to high (0.20 to 5.95 in/hr) infiltration rates and low runoff rates. The depth to restrictive features is estimated at 0 inches to lithic bedrock.

- Keaau clay (KmA): Consists of poorly drained soils on coastal plains. These soils developed in alluvium deposited over reef limestone or consolidated coral sands. Elevations range from 5 to 40 feet. The slope range of this soil is 0 to 2 percent. KmA has moderately low to moderately high infiltration rates.

- Mokuleia loam (Ms): Consists of well-drained soils along the coastal plains. These soils formed in recent alluvium deposited over coral sand. Elevations range from 0 to 100 ft. The slope range of this soil is 0 to 2 percent. Ms has high infiltration rates. The depth to restrictive features is estimated at 80 inches.

ALISH
The Agricultural Lands of Importance to the State of Hawaiʻi (ALISH) classification system identifies three classes of agriculturally important lands: Prime Agricultural Lands, Unique Agricultural Lands, and Other
Important Lands. See Figure D.7, Agricultural Lands of Importance to the State of Hawai‘i. The majority of the proposed 10-acre south expansion area and a smaller portion of the west expansion area are classified by ALISH as:

- Prime Agricultural Land (1): Land is best suited for the production of food, feed, forage and fiber crops. The land has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed, including water management, according to modern farming methods.

The remaining expansion areas do not have an ALISH classification.

**Land Study Bureau Classification (LSB)**

The Land Study Bureau of Hawai‘i (LSB) classification system evaluates the quality of State land in terms of agricultural productivity based on environmental conditions, physical characteristics, and soil properties and assigns a productivity rating of ‘A’ through ‘E’, with ‘A’ being ‘very good’ productivity and ‘E’ being ‘very poor’ productivity. See Figure D.8, Land Study Bureau. The proposed expansion areas are characterized by the following LSB productivity ratings:

- LSB B (Good): The majority of the 10-acre south area and a small portion of the 2.7-acre west area parking lot.
- LSB C (Fair): The majority of the north and northwest area, totaling approximately 0.72 acres, which includes the grassed area and parking lot.
- LSB E (Very Poor): The majority of the 2.7-acre west area parking lot, grassed detention area and the EUTTB.

**Important Agricultural Land (IAL)**

Important Agricultural Lands (IAL) is a state mandate (HRS, Chapter 205) to create long-term protection for Hawai‘i’s high-quality farm land and preserve productive agricultural land from future development. The CCH DPP evaluated and identified preliminary areas for IAL designation based on three priority criteria selected from eight IAL standards and criteria specified in HRS Chapter 205-44. DPP’s preliminary IAL mapping effort designates all lands in the SLU Agricultural District that possess at least one of the following three priority criteria as IAL:

- Currently used for agricultural production;
- Suitable soil qualities and growing conditions; or
- Sufficient quantities of water.

HRS Section 205-44(c)(6) stipulates that the designation of IAL land must be consistent with general, development and community plans of the county. The KSCP designates all agricultural land within the existing PRU boundary for Institutional Use and locates it inside the Community Growth Boundary (see Figure D.17, Ko‘olau Loa Sustainable Communities Plan – Land Use Map). Therefore, all the SLU Agricultural District located within the existing PRU boundary, including the proposed expansion areas, are excluded from the DPP’s preliminary IAL map. See Figure D.9, Important Agricultural Land.

**Discussion:**

**Soils**

The soils in the north, west and southeast expansion areas have been graded and compacted by development of the existing paved and gravel parking lots, grassed area, and the EUTTB. If TVA 25 or Jonathan Napela Center/Ceramics Art Studio is extended into the expanded Urban District area, soils will be graded and compacted in the smaller expansion area.
A portion of the soils in the 0.5-acre northwest expansion area have been disturbed and compacted by the development of an existing paved parking lot. The remaining portion is proposed for the development of TVA 27 which will disturb and compact the soils. The soils in the 10-acre south expansion area have in the past been routinely cultivated with a variety of crops and are currently partially covered with unmaintained papaya trees, but are not actively farmed. The proposed development of Hale 11 to 13 will grade and compact the soils on the 10-acre south area. Soils that are not developed with planned buildings and related hardscape will be stabilized by landscaping. The reduced surface area for rainwater percolation through undisturbed soils will be mitigated through on-site drainage system improvements and on-site retention. Any future development in these areas will be integrated into the existing campus drainage system. See the drainage discussion in Section C.3.d, Site Suitability.

ALISH and LSB
Although the majority of the proposed expansion areas are designated as ALISH Prime agricultural land and rated by LSB as having good to fair productivity, the entire PRU area is within the KSCP Community Growth Boundary, which delineates land planned for urban and institutional development (see Section C.3.c, Consistency with State and County Plans and Programs, Koʻolau Loa Sustainable Communities Plan). The entire area is identified in the KSCP Land Use Map and Open Space Map as intended for ‘Rural Communities’ and ‘Institutional Uses’ respectively (Figure D.17, Koʻolau Loa Sustainable Communities Plan – Land Use Map and Figure D.18, Koʻolau Loa Sustainable Communities Plan – Open Space Map). The KSCP maps reflect the 1996 PRU approval (Resolution No. 96-321, CD1), which identify the project area as appropriate land for future campus expansion. The land use policies and guidelines established in the KSCP represent the City’s and the Koʻolau Loa community’s recognition that the public benefit provided by the continued operation and planned expansion of the BYU-H campus is greater than the loss of agricultural use on these lands.

IAL
All of the SLU Agricultural District located within the BYU-H 94/PRU-4 boundary, including the proposed expansion areas are excluded from the DPP’s preliminary IAL map. The planned use of the lands within the PRU boundary for the expansion of campus facilities is consistent with CCH land use plans and policies, as represented in the KSCP.

C.2.c Surrounding Land Uses and Structures
The BYU-H campus is located approximately a third of a mile mauka of Kamehameha Highway and the coastline. Kamehameha Highway serves as the major transportation arterial in the region and the only developed roadway connecting Lāʻie and BYU-H to rest of the island. The BYU-H campus is bounded by Naniloa Loop to the north, Wailele Stream to the south, The Polynesian Cultural Center to the east, and open space and the Koʻolau Mountains to the west (See Figure D.10, Surrounding Land Uses). Land uses and structures surrounding the BYU-H campus include the following:

North
Immediately north of the campus, separated by Naniloa Loop, are single-family residential neighborhoods of Lāʻie town. To the northwest of campus, the Church of Jesus Christ of Latter-day Saints Lāʻie Hawai‘i Temple is located at the intersection of Naniloa Loop and Hale Lāʻa Boulevard.

South
South of the developed BYU-H campus are vacant lands planned for campus expansion and Wailele Stream, which forms the southern boundary of the campus PRU area. The southeast corner of this
vacant area contains an existing R1 wastewater leach field (infiltration field) that is used to dispose treated effluent from the Lāʻie Wastewater Reclamation Facility (LWRF). Quarry Road, a private access road with an intersection on Kamehameha Highway, mostly follows the stream alignment and provides access to the south side of campus, the back entrance and parking lot used by the PCC, BYU-H, Hawaiian Electric Company (HECO), CCH Environmental Services (ENV), LWRF, HRI, LTCL and agricultural uses within the BYU-H PRU area. The land south of Wailele Stream is comprised of agricultural land.

**East**
The PCC is located along the entire east border of the BYU-H campus, between the campus and Kamehameha Highway.

**West**
West of the developed campus within the PRU boundary, land uses include open space, limited agricultural cultivation, a cultural preservation area (Niʻoi Heiau), Hawaiian Studies area, the EGBRA, the LTCL, agricultural roads, various utility installations including wastewater pump station, future HECO substation site, Liquid Petroleum Gas (LPG) storage facility, and developed potable water wells. The LWRF is located further to the west, outside of the PRU boundary. Further southwest, are Wailele Gulch and the Koʻolau Mountains.

**Proposed Expansion Areas**
Existing land uses and structures surrounding the five planned SLU Urban District expansion areas are described in Table 2, below.

### Table 2: Existing Uses and Structures Surrounding the Proposed Expansion Areas

<table>
<thead>
<tr>
<th>Location</th>
<th>Area (ac)</th>
<th>Surrounding Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>North area</td>
<td>0.12</td>
<td>The grassed open space area is located north and adjacent to TVA 25 married student apartment. East of the grassed area is the TVA driveway and parking lot. Northeast of the area are the Na Hale Kumu 1 Faculty Townhouses. Northwest of the area is the Lāʻie Stake Farm. West of the area is undelopable open space and to the southwest of the area is the LWRF.</td>
</tr>
<tr>
<td>Northwest area</td>
<td>0.50</td>
<td>The existing parking lot is located adjacent to TVA 21 and 22 married student apartments to the east. TVA 23 married student apartment is located across Mikioneli Way to the north. West of the parking lot is a grassed open space area used for drainage detention and the recently completed extension of Mikioneli Way, which serves as a perimeter road along the west side of campus and provides access to agricultural uses further west. South of the parking lot is a continuation of the grassed open space. The Stake Center and campus pavilion are located nearby to the east.</td>
</tr>
<tr>
<td>West area</td>
<td>2.70</td>
<td>North of this area are grassed open space and the northwest area parking lot. Immediately to the east, in order from north to south, are the Heber J. Grant multi-purpose building, the Jonathan Napela Center Ceramic Art Studio, and the Science Building. The west and southwest side of the area is bounded by Mikioneli Way, which separates the area from the EGBRA and open agricultural land. Northwest of the parking lot across Mikioneli</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Location</th>
<th>Area (ac)</th>
<th>Surrounding Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.53</td>
<td>This area contains an existing parking lot that abuts the back entrance to the PCC along the east. The parking lot extends north into the existing SLU Urban District and south entrance to the developed BYU-H campus. The campus facilities shop is located adjacent to north end of the parking lot. To the west is vacant open space, a portion of which contains the LWRF leachfield. Immediately south is Quarry Road, which provides access to the parking lot and separates the parking lot from agricultural uses and Wailele Stream further south.</td>
</tr>
<tr>
<td>South area</td>
<td>10.00</td>
<td>Immediately to the north of the area proposed for development of the new single student dormitories are the existing on-campus single-student dormitory complex, Hale 3 to 10. To the west is agricultural open space, Quarry Road and Wailele Stream. An existing reuse water pump station, and HECO easement containing overhead power lines are located along the west boundary of the proposed expansion area. The south boundary is defined by Quarry Road and Wailele Stream, south of which is agricultural land. East of the area is open space, a portion of which contains the LWRF leachfield.</td>
</tr>
</tbody>
</table>

**C.2.d Historical Land Uses**

In pre-contact times, the Lāʻie Ahupuaʻa was occupied by a sizeable permanent population engaged in intensive cultivation of the low-lying lands between the mountains and the seacoast and fishing in the abundant waters off the adjacent coastline. Numerous streams in the area were used for wetland loʻi taro cultivation and subsistence gardening. The area was also the site of several heiau, of which Niʻoi Heiau still exists within the BYU-H PRU boundary (SCS, 2012). Traditionally, Lāʻie was also known as a place of refuge (puʻuhonua) for kapu breakers (CSH, 2017).

The earliest foreign settlers in the area were Chinese families engaged in commercial sugar production in 1789. These early commercial efforts with sugar production were unsuccessful at the time (SCS, 2012). In 1865, the Church of Jesus Christ of Latter-day Saints purchased 6,000 acres of land in Lāʻie to establish a mission. The Lāʻie Plantation was subsequently established for commercial sugar production to support the Lāʻie mission and community. The 1900’s saw the establishment of a railroad connecting the sugar industry facilities between Kahuku, to the north, and Kahana, to the south. The first Lāʻie Chapel was built in 1883. The Lāʻie Hawaiʻi Temple was dedicated in 1919. The LDS church managed the Lāʻie Plantation, which grew sugarcane and kalo until the 1930’s. The construction of the Kamehameha Highway in the 1930s and the continued presence of the Mormon Church greatly influenced the character and direction of Lāʻie to the present day (SCS, 2012).

In 1955, the LDS church opened the Church College of Hawaiʻi, which is now known as Brigham Young University, Hawaiʻi, on land that was historically used by the Lāʻie Plantation for sugar cane cultivation.
(see Photo E.1, Aerial Photo 1949). In 1958, the first permanent campus facilities were built by missionaries. In 1976, the University received a ten-year accreditation from the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges. During the 1970’s and 1980’s, major building projects were carried out to provide adequate campus facilities to accommodate increased student enrollment. During the late 1980’s, the University President focused on improving the quality of student’s learning environment by renovating and modernizing dormitories, classrooms, and other campus facilities.

In June 1989, BYU-H submitted a PRU Application including a Five-Year Master Plan to the Department of Land Utilization (DLU) (PLA 1996). The 1989 PRU application was paused at the request of BYU-H until certain conditions were resolved. In November 1994, BYU-H submitted a revised PRU application including an updated Five-Year Master Plan for approval by the DLU and the Honolulu City Council, in compliance with the LVO Section 3.160 and 8.30–1. The Five-Year Master Plan was revised in May 1996. The 1996 Five-Year Master Plan evaluated existing campus conditions and proposed the renovation and expansion of campus support and living facilities. The Master Plan recognized 33 existing structures and proposed the construction of seven new buildings. At the time, the campus was considered non-conforming with the LVO and required a PRU permit for campus expansion. On May 7, 1997, BYU-H obtained PRU Permit No. 94/PRU-4 by City Council Resolution No. 96-321, CD1, which established the current PRU campus boundary. Minor modifications to the original PRU include the following:

- March 17, 2000: PRU minor modification to allow a larger campus Chapel building.
- June 23, 2000: PRU minor modification to convert the auto shop to a University Print Shop with offices.
- September 19, 2002: PRU minor modification to build a 100-space parking lot for the campus Chapel.
- May 14, 2003: PRU minor modification to build the Na Hale Haumana Apartments (Phase 1).
- October 9, 2003: PRU minor modification to build two 1,800-square-foot Chapel pavilions.
- October 11, 2005: PRU minor modification to build the Na Hale Haumana Apartments (Phase 2), housing office with laundry room, multi-purpose room, and two new parking lots.
- July 26, 2011: PRU minor modification (Reference No. 2011/ELOG-12(ST) ; 94/PRU-4) to renovate and replace four, two-story dorms with seven three-story dorms (three renovations, Hale 3-5, and four replacements, Hale 7 - 10); construct two new apartment buildings for married students; and a new two-story multi-use building.
- July 31, 2012: PRU minor modification (Reference No. 2012/ELOG-918(ST) ; 94/PRU-4) to relocate the plant nursery, turf farm and green waste composting area to allow the construction of the new student housing complex approved on July 26, 2011 (Reference No. 2011/ELOG-12(ST) ; 94/PRU-4).
- September 20, 2013: PRU minor modification (Reference No. 2013/ELOG-1677(KB); 2013/MOD-1) to remodel/renovate Hale 3-5, replace Hale 6, and modify PRU boundary.
- April 16, 2015: PRU minor modification (Reference No. 2014/ELOG-1748(ST); 2014/MOD-93; 94/PRU-4) to build a new 22-unit apartment building, parking lots, service road extensions, and a pavilion and open courtyard; upgrade and relocate an electrical switch gear building, chiller plant, and gas tanks; and reconstruct an existing parking area and shared service area and other campus improvements.
- February 27,2016: PRU minor modification (Reference No. 2015/ELOG-2734(ST); 2015/MOD-117, 2014/MOD-93; 94/PRU-4) to revise previous plans for the electrical switch gear building, new chiller plant building, renovation and repurposing of the racquetball court building, new propane tank relocation and cell tower relocation.
• July 15, 2016: PRU minor modification (Reference No. 2016/ELOG-1523(ST); 2016/MOD-55; 2014/MOD-93; 94/PRU-4) to construct a new covered equipment storage shed, materials storage bins, LPG tank, revised Hale Courtyard Pavilion structure, renovation and repurposing of the racquetball court building, and shared PCC parking lot.

• January 8, 2018: PRU minor modification (Reference No. 2017/MOD-78(ST); 94/PRU-4) for four replacement projects (Science and Mathematics Building, Temple View Apartment 17, Na Hale Kumu 1 Faculty Townhomes, and Cafeteria), one building repurpose project (Information Technology Center) and one new construction project (Temple View Apartment 19).

Additional permits include:

• September 19, 1989: Off-site Parking Agreement between the Polynesian Cultural Center and BYU-H (Reference No. 89/CUP1-27)

• January 7, 2016: Zoning waiver and minor modification (Reference No. 2016/W-18 (ST); 2016/MOD-5; 2014/CUP-31) to waive LUO Sections 21-3.50-1(b) [Table 21-3.1], 21-4.60(a) and (c)(4)(B), and 21-4-110(b)(3), relating to development standards and heights, to tri-locate six panel antennas on an existing Utility Installation, Type B (freestanding antenna structure); and for the Minor Modification of CUP No 2014/CUP-31.

The SLU Agricultural and Urban Districts boundaries for the BYU-H parcel have remained relatively unchanged since the mid-1960’s, as indicated in the historical State Land Use Commission (SLUC) District Boundary Maps of Lā‘ie (see Figures D.11 through D.15, State Land Use Commission District Boundary Map 1964, 1969, 1974, 1991, and 1996 Amendment Map). In 1964, the SLUC District Boundary Map depicts the SLU Urban District boundary encompassing the majority of the existing BYU-H campus and Lā‘ie Town. In 1974, the SLU Urban District boundary was amended to include a portion of the LRWF parcel, located outside of the campus PRU boundary. The SLU District Boundaries through the BYU-H PRU area remained unchanged until 1996 when an approximately 2.1-acre area was added to the SLU Urban District to accommodate the development of TVA 23, 24 and 25 married student housing apartments in the northwest area of campus.

The lands that comprise the proposed 14.9-acre expansion area have historically been used for agricultural cultivation, primarily sugar cane production and truck crops. See Photo E.1, Aerial Photo 1949. In the 1970s, the 1.53-acre southeast area was also used as a quarry site. See Photo E.3, Aerial Photo 1977. The proposed expansion area lands have been subject to significant modification and ground disturbance as a result of agricultural activities and due to their proximity to the BYU-H campus and the related development activities over the latter half of the 20th century.

C.2.e Existing Land Uses

The proposed 14.9-acre expansion area is designated for institutional use on the KSCP Land Use Map. (see Figure D.17, Ko‘olau Loa Sustainable Communities Plan – Land Use Map) (KSCP, 1999, 2012). The KSCP states that the institutional land use area is designated to support the expansion and renovation of BYU-H to accommodate academic and living facilities for students, faculty, and staff. The KSCP Land Use Map also indicates that the expansion area is within the community growth boundary, which designates appropriate areas for urbanization and institutional development. The BYU-H expansion area was approved for campus development under PRU No. 94/PRU-4, by City Council Resolution No. 96-321, CD1, on May 7, 1997. Existing uses within the areas proposed for the SLU Urban District Boundary Expansion are listed in Table 3:
Table 3: Existing Uses and Structures Within the Proposed SLU Urban District Expansion Areas

<table>
<thead>
<tr>
<th>Location</th>
<th>Area (ac)</th>
<th>Existing Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>North area</td>
<td>0.12</td>
<td>This grassed area contains a concrete slab, ramp and various trees. TVA 25 is located along the south boundary and the TVA parking lot along the east boundary.</td>
</tr>
<tr>
<td>Northwest area</td>
<td>0.50</td>
<td>This area contains a grassed open space area and a portion (20 stalls) of an existing, 34-stall paved parking lot that serves the TVA 21, 22 and 23 married student apartments, and serves as a general campus parking lot managed by permit.</td>
</tr>
<tr>
<td>West area</td>
<td>2.70</td>
<td>This area contains an existing, 112-stall gravel parking lot that serves as a general campus parking lot, a grassed open-space area that provides drainage detention, and the EUTTB.</td>
</tr>
<tr>
<td>South area</td>
<td>10.00</td>
<td>This area contains inactive agricultural land and vacant open space. An existing waste water pump station and overhead HECO power lines are located along the west boundary. Quarry Road forms the south boundary.</td>
</tr>
<tr>
<td>Southeast area</td>
<td>1.53</td>
<td>This area contains an existing, 127-stall paved parking lot that abuts the back entrance to the PCC. The north end of the parking lot, containing an additional 64 stalls, is located within the existing SLU Urban District. The parking lot is leased by BYU-H to the PCC for employee use and is managed by permit.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14.85</strong></td>
<td></td>
</tr>
</tbody>
</table>

C.2.f Other Land Uses Located Outside of the SLU Urban District

The Applicant understands that the DPP staff would like the Applicant to provide additional information regarding the following land uses that are located outside of the SLU Urban District and their conformance with the State Land Use Law, HRS Chapter 205:

1. PCC Parking Lot
2. PCC Canoe Maintenance Site
3. Lāʻie Trucking Company, LTD (LTCL), Former Quarry Site
4. Lāʻie Water Reclamation Facility
5. Liquified Petroleum Gas Storage Tank, LWRF Pump Station and HECO Transformer Station
6. Construction Staging Area on Site Proposed for Hale 11

(see Figure D.16, Existing Established Uses).

On August 30, 2017, the Applicant submitted the SLUDBA application to the DPP. The Applicant received a letter from the DPP, dated October 12, 2017, which required the Applicant to provide plans with a timetable for resolving non-conforming land uses for the PCC canoe maintenance site, LTCL operations yard, and the LPG storage tank. The DPP also identified a construction staging area on the site proposed for Hale 11, which is not permitted in the SLU Agricultural District. To address the DPP’s comments, the Applicant provides the following information:

Written Statement C-12
Polynesian Cultural Center Off-Site Parking Lot

The PCC off-site parking lot is located in the southeastern corner of the BYU-H PRU boundary, adjacent to the back entrance to the PCC. The parking lot is paved and striped for 191 stalls, of which 127 stalls are located within the SLU Agricultural District. The parking lot is currently leased by BYU-H to the PCC.

In 1965, a 16.8-acre area, including the parking lot site, was leased by BYU-H to Lā‘ie Concrete & Aggregate, Inc. (LCAI, now doing business as LTCL) for quarry operations. During the development and expansion of the BYU-H campus and PCC in the early 1970s, the land was utilized as a quarry by LCAI to provide building materials for the campus construction. After 1977, the quarry area was restored with top soil to match the existing grade of adjacent lands, in accordance with the terms of the lease.

The parking lot was developed in three phases between 1977 and 1990, as evidenced in historical aerial photographs of Lā‘ie (see Photo E.3, Aerial Photo 1977, Photo E.4, Aerial Photo 1987, and Photo E.5, Aerial Photo 1990). The PCC parking lot is shaped like a flagpole, with a long stem access road with perpendicular parking on both sides that leads to a rectangular lot with seven parking bays and perimeter stalls. The first and second phases of the parking lot, totaling 153 stalls, were developed between 1977 and 1987. Phase one created 48 paved, perpendicular parking stalls off of the access road within the SLU Agricultural District. Phase two established the northern portion of the rectangular lot, including five of the seven parking bays and perimeter parking. Phase two created 105 parking stalls, including 64 stalls within the SLU Urban District and 41 stalls within the SLU Agricultural District. Phase three was developed around 1990 and created the southern portion of the rectangular parking lot, including two parking bays and perimeter parking totaling 38 parking stalls within the SLU Agricultural District. In total, the parking lot provides 191 stalls, of which 127 stalls on approximately 1.53 acres are located within the SLU Agricultural District.

Table 4: PCC Off-Site Parking Lot Development Phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Year Constructed</th>
<th># Stalls SLU Urban</th>
<th># Stalls SLU Ag</th>
<th>Total # Stalls</th>
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<tbody>
<tr>
<td>1</td>
<td>1977-1987</td>
<td>0</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>1977-1987</td>
<td>64</td>
<td>41</td>
<td>105</td>
</tr>
<tr>
<td>3</td>
<td>1987-1990</td>
<td>0</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>64</td>
<td>127</td>
<td>191</td>
</tr>
</tbody>
</table>

Since 1989, the parking lot has been leased by BYU-H to the PCC for use by PCC employees. On October 25, 1989, the CCH DLU approved Conditional Use Permit (CUP) No. 89/CUP1-27 for Off-Site Parking for the PCC in accordance with the terms of an Off-Site Parking Agreement with BYU-H to provide 146 parking stalls on BYU-H property. See Exhibit F.3, CUP No. 89/CUP1-27, Off-site Parking File.

The Phase one and two parking lot configuration, including 89 stalls within the SLU Agricultural District, is shown in the 5-year Master Plan included as Exhibit A in City Council Resolution 96-321, CD1, approving 94/PRU-4. In April 2015, a minor modification to 94/PRU-4 to reconfigure the PCC parking lot to a mauka-makai orientation to be entirely within the SLU Urban District was approved (Reference No. 2014/ELOG-1748(ST); 2014/MOD-93; 94/PRU-4). In July 2016, a minor modification to 94/PRU-4 (Reference No. 2016/ELOG-1523(ST); 2016/MOD-55; 2014/MOD-93; 94/PRU-4) documented that the University no longer intended to reorient and reconfigure the parking lot, however the University wishes
to preserve this option and is including the reconfigured parking lot in the updated Campus PRU application.

The PCC off-site parking lot is not associated with agricultural uses. The 127-stall portion of the parking lot located within the SLU Agricultural District is therefore not in conformance with HRS Chapter 205. Through this SLUDBA Application, BYU-H proposes to include the entire parking lot within the SLU Urban District and bring the use into conformance with HRS Chapter 205.

**PCC Canoe Maintenance Site**

The PCC canoe maintenance site is located in the southeastern corner of the BYU-H PRU boundary adjacent to Quarry Road and the back entrance to the PCC. Originally, the site was utilized as a temporary construction staging area for BYU-H and PCC development projects. The site has subsequently been used by the PCC for wood carving, canoe repairs, temporary vehicle parking, and construction material and equipment storage. The use of the site for canoe repairs, vehicle staging and storing equipment and materials associated with the PCC is not in conformance with HRS Chapter 205. To address this condition, the Applicant and PCC removed the wood carving, canoe repairs, temporary vehicle/bus parking, and other storage materials as of November 10, 2017. The site now in conformance with the SLU Agricultural District designation.

**The Lāʻie Quarry**

In the late 1950’s, Mr. Paul Yukio Iijima founded Lāʻie Concrete & Aggregate, Inc. (LCAI) and began quarrying operations on a small coral hill in what is now the southeast corner of the BYU-H PRU boundary to provide concrete and stone used in the original development of the BYU-H campus roads. An aerial photo from 1959 shows quarry operations being undertaken in the southeast area, and smaller quarrying operations in the current quarry site further to the west (see Photo E.2, Aerial Photo 1959).

On October 1, 1965, a lease agreement was established between Zions Securities Corporation (ZSC, BYU-H) and LCAI to conduct quarrying operations on two parcels of land, a 16.8-acre area of land containing the quarrying operations near the southeast corner of the current PRU area and a 24.2-acre area of land containing additional quarry operations near the southwest boundary of the current PRU (see Exhibit F.4, 1965 ZSC and LCAI Quarry Lease). By 1977, LCAI was conducting large-scale quarrying operations in both locations (see Photo E.3, Aerial Photo 1977). The mid-1970s expansion of the Lāʻie quarry operations corresponded with the expansion of BYU-H and the development of PCC. By 1987, the LCAI ceased quarry operations at the southeastern corner of the PRU boundary and the land was restored in accordance with the lease conditions for use by BYU-H (see Photo E.4, Aerial Photo 1987). Quarry operations in the southwestern corner of the PRU boundary continued and expanded at this time. In the 1990’s, LCAI’s quarry operations changed from a traditional quarry (resource extraction) to concrete batch plant operations and the business name changed to the Lāʻie Trucking Company, LTD (LTCL) (see Photo E.5, Aerial Photo 1990). On January 1, 2014, a ten-year lease agreement was established between BYU-H, HRI, and LTCL to conduct concrete operations on 5 acres of land: 2.7 acres of BYU-H property and 2.3 acres of HRI property. See Exhibit F.5, 2014 LTCL, BYU-H, and HRI Lease. The lease permits the transport and short term storage of aggregate, sand and cement for use in a concrete mixing area. On February 2016, the lease was amended to add approximately 5 additional acres to the original lease agreement. See Exhibit F.6, 2016 LTCL, BYU-H, and HRI Lease Amendment. The lease permits BYU-H to use approximately two to three acres of the 5-acre expansion area for short-term storage of excavated materials and select construction material for recycle and reuse. The current Lāʻie Quarry no longer mines coral to produce aggregate and instead imports commercial aggregate to produce concrete on-site.

Throughout BYU-H’s history, the campus and the LCAI/LTCL operations have been intrinsically linked and BYU-H continues to rely on LTCL as a source of building materials for campus development projects. The
LTCL is a local resource provider of commercial aggregate and concrete for Lāʻie and the entire Koʻolau Loa District and North Shore region, reducing the need to import commercial aggregate from other parts of the island and thereby eliminating additional traffic along Kamehameha Highway. It also serves as a local facility for recycling concrete material that would otherwise have to be trucked to PVT Landfill in Nānākuli for disposal.

The LTCL Lāʻie Quarry is located in the SLU Agricultural District. During the April 25, 2017, pre-application meeting, DPP staff noted that the Lāʻie Quarry’s commercial industrial concrete batch plant operations are not a permitted use within the SLU Agricultural District, per HRS Chapter 205. It is LTCL’s desire to remain in business as a concrete batch plant and concrete recycling operation servicing the North Shore and BYU-H. However, LTCL requires time to determine the best course of action to meet compliance requirements of the State and CCH land use laws and remain viable as a business. The Applicant proposes the following alternatives to address this issue:

1. **Obtain Required Permits:**
   
   Under this alternative, LTCL will prepare and process applications for the following permits to bring the use into compliance with the State Land Use Law and CCH LUO:
   
   - Special Use Permit (SUP) for quarrying and material processing operations for less than 15 acres of non-contiguous area within the SLU Ag District. The permit will be processed with the DPP and CCH Planning Commission. To support the permit application, LTCL will undertake special studies and consultation with the State Historic Preservation Division as required for compliance with HRS Chapter 6E, Historic Preservation. The Applicant understands that DPP will not require an Environmental Assessment (EA) as prerequisite for this permit application, provided the proposed use is not located within the Special Management Area, which would require and EA in accordance with HRS Chapters 205A and 343.

   - Conditional Use Permit (Major) for resource extraction activities as the primary use and material processing as the accessory use within the AG-1 zoning district. The CUP-Major will be processed with the DPP following approval of the SUP.

   The Applicant requests the LTCL be allowed 18 months to conduct the necessary plans and studies, and to prepare and process the permit applications.

2. **Relocate the LTCL quarry operations outside of the SLU Agricultural District:**

   Under this alternative, LTCL will be required to find a suitable relocation site in the SLU Urban District and Industrial (I-1, I-2 or I-3) zoning district. If LTCL decides to relocate, the Applicant requests that DPP allow LTCL 18 months to undertake the site relocation, including time to evaluate permit cost impacts on business viability, identify and secure a suitable relocation site, manage a controlled shut down of current concrete recycling and batch plant operations, dismantle and relocate the existing facilities and equipment, and stabilize the disturbed areas of the existing facility.

   If LTCL cannot obtain approval for the required permits or bear the related costs, or if the costs to temporarily shut down operations and relocate the facility cannot be supported by LTCL’s business plan and available revenues or financing, then LTCL may be required to permanently close operations. Before making this determination, we request that LTCL be allowed to pursue the alternatives described above.
The Lāʻie Water Reclamation Facility (LWRF)
In the 1980’s the LWRF was originally constructed to provide wastewater treatment for the BYU-H campus and the PCC (SB, 2006). In 1997, the LWRF was expanded and upgraded to provide tertiary treatment for effluent from the entire town of Lāʻie. The LWRF produces reclaimed water at an R-1 level, which is the highest reclaimed water quality level. The reclaimed water is primarily used for irrigation. The LWRF effluent is disposed of through a leach field located under the sports field near the southeastern corner of the PRU boundary (RMTC, 2016). On November 1, 2006, HRI transferred operations of the LWRF to the CCH ENV. Currently, ENV manages and operates the LWRF under lease from HRI. HRI is in the process of transferring ownership of the LWRF and underlying land to ENV (HRI, 2006).

The LWRF is not located within the BYU-H PRU boundary or TMK parcel, and is outside of the area that is the subject of this application. The LWRF is located on parcel TMK 5-5-006:033, which is contiguous with the west boundary of the BYU-H PRU and TMK parcel 5-5-006:005. During the April 25, 2017, pre-application meeting, DPP staff noted that a discrepancy exists between the LWRF TMK parcel area (8.9 acres) and the corresponding SLU Urban District Boundary area (6.4 acres). As a result, approximately 2.5 acres of the LWRF is located within the SLU Agricultural District. While wastewater reclamation facilities are not an allowed use within the SLU Agricultural District, the Applicant understands that the portion of the site that is within the SLU Agricultural District does not currently contain wastewater facility improvements and thus conforms to HRS Chapter 205. The DPP and the Applicant agree that this issue does not relate to BYU-H campus planning and development and will be resolved separately from the subject SLUDA Application process.

The LPG Storage Tank, LWRF Pump Station and HECO Transformer Station
The LPG storage tank is located in between two larger permitted utility installations: HECO Transformer Station (future) and the LWRF Pump Station. The LPG tank has a relatively small footprint, consisting of four 2,000 gallon tanks, approximately 18 ft by 4.5 ft each, enclosed by a 30 ft by 60 ft fence. The gas tank is accessible by the unpaved West Service Road Extension, which connects the BYU-H campus to the LWRF. The LPG storage tank was relocated from the parking area along West Service Road Extension to its current location under PRU Minor Modification 2014/ELOG-1748(ST); 2014/MOD-93, and Building Permit No. 802417 for BYU-H Infrastructure Improvements (site work with new utilities). See Exhibit F.7, DPP Approvals for LPG Tank.

The LPG storage tank distributes gas throughout the BYU-H campus through an underground network of gas lines, which are serviced and maintained by Hawai‘i Gas. The propane gas is primarily used to generate hot water for residential and academic uses on the BYU-H campus.

In the DPP’s letter dated October 12, 2017, the DPP did not acknowledge the LPG Storage Tank as a permitted use within the SLU Agricultural District. To address this condition, the Applicant proposes to prepare and process a SUP application to bring the use into compliance with SLU laws. The Applicant understands that the DPP will not require an EA before processing the SUP application. The permit will be processed with the DPP and CCH Planning Commission. The Applicant requests 18 months to prepare and process the SUP application.

Construction Staging Area on Site Proposed for Hale 11
The site proposed for Hale 11 is located directly south of Hale 5. This area contains inactive agricultural land and vacant open space. In the DPP’s letter dated October 12, 2017, DPP staff members observed the site being used for vehicle parking and construction staging not related to agricultural activities, which is not permitted within the SLU Agricultural District without a SUP. In response, the Applicant removed construction staging and vehicle parking as of November 10, 2017.
C.2.g  Historic and Archaeological Resources

In June 2017, a Draft Archaeological Literature Review and Field Inspection (LRFI) was prepared by Cultural Surveys Hawai‘i, Inc. (CSH) to determine if any historical or archaeological resources may be affected by the proposed campus expansion. See Exhibit F.8, Draft Archaeological Literature Review and Field Inspection. Based on a review of historical documents, the project areas may have been in taro or sweet potato cultivation during the pre-Contact period. No Land Court Awards (LCAs) were awarded within the current project area(s), although several were awarded immediately adjacent to the north project area; these comprise kula lands and house lots. From the mid-1800s to the mid-1900s, the project area(s) was in sugarcane cultivation or undeveloped open space. Based on a review of historic maps, several structures likely representing a plantation camp or village were present in the vicinity of the north project area during the early twentieth century. A plantation rail line crossed roughly north-south through the south project area during the same period. Although evidence of traditional Hawaiian activity in the project area(s) was most likely removed or destroyed as a result of subsequent land alterations, it is possible historic infrastructure or other plantation era features are present within the project area(s). (CSH, 2017)

In general, the project area(s) appears to be graded or bulldozed, and no historic properties were observed during the field inspection. Background research indicated any evidence of traditional Hawaiian activity in the area that once existed was likely destroyed during the plantation era (ca. mid-1800s to mid-1900s), when both the south and north project areas were in sugarcane cultivation. Evidence of the former plantation camp or village and plantation rail line appears to have been removed or destroyed by subsequent land alterations, as no evidence of historic plantation activity was observed during the field inspection. Furthermore, the extensive land alterations make it unlikely any subsurface evidence of traditional or historic land use remains extant within the project area(s) (CSH, 2017).

After the LRFI was prepared, the project area was reconfigured to include two additional areas, a 0.12-acre area along the north perimeter and a 1.53-acre area along the southeast perimeter of the PRU boundary. The 0.12-acre grassed area is located adjacent to TVA 25 married student apartment and includes a concrete slab, ramp and various trees. The TVA 25 building may be renovated in the future to extend into the 0.12-acre area, although there are no active plans to do so at present. Based on the maps in the LRFI, the 0.12-acre area may have been in taro or sweet potato cultivation during the pre-Contact period and in sugarcane cultivation during the Plantation period. It is likely that any historic Hawaiian resources have been removed or destroyed in subsequent land alterations. The 1.53-acre area is located adjacent to the PCC and includes an existing paved parking lot that serves PCC and BYU-H Campus. Historic photos of Lā‘ie indicate that the PCC parking lot area was previously used as a quarry site. During this period, it is likely that any historical resources located in this area were destroyed by quarrying activities or during subsequent development of the access road and parking lot. See Photo F.2, Aerial Photo 1974. No new improvements are proposed in this area as part of the current campus expansion project.

The LRFI documents previous archaeological studies and a significant number of known historic properties within the Lā‘ie ahupua‘a. An archaeological inventory survey by Dunn and Rosendahl (1992), which included the subject project areas, identified over 100 archaeological features in the lands of Mālaekahana and Lā‘ie. The LRFI identified the nearest historic properties to the current project areas as SIHP No. 50-80-02-4455, a historic habitation foundation, and SIHP No. 50-80-02-4456, a modified outcrop, located near the northwest area parking lot.

Other recent archaeological studies for the BYU-H campus include a 2012 Archaeological Inventory Survey (AIS) report that was prepared by the Scientific Consultant Services Inc. (SCS) for various
locations outside of the SLU Urban District within the BYU-H PRU boundary. An archaeological site, State Inventory of Historic Places (SIHP) Site No. 50-80-02-7298, was identified along the west perimeter of the current project area. SIHP No. 50-80-02-7298 consists of traditional-type lithic scatter including 31 basalt and volcanic glass artifacts. No historical artifacts were recovered from the excavation. SCS recommended no further archaeological work or monitoring were necessary for the site (SCS, 2012).

Based on the findings of the background research and field inspection, the proposed project will likely have no effect on significant historic properties, since it is unlikely any historic properties are present. In the event that unknown or unexpected historic or cultural features, deposits, or burials are discovered during project activities, all work in the immediate area of the find will be suspended and the State Historic Preservation Division (SHPD) will be notified immediately to evaluate the significance of the findings and determine the appropriate course of action. In compliance with HRS 6E-42, BYU-H will consult with SHPD to determine if any, historic preservation requirements are indicated.

C.3 Need for Proposed Development
C.3.a Contributions to General Welfare and Prosperity of the People of O‘ahu

BYU-H contributes to the general welfare and prosperity of the people of O‘ahu by supporting educational and economic opportunities for the North Shore and Windward O‘ahu specifically and the island of O‘ahu generally.

BYU-H is an important educational and cultural institution in the Ko‘olau Loa region as noted in the KSCP. Since 1955, the University has been providing educational opportunities for residents of Lā‘ie, O‘ahu, the mainland U.S. and the international community. It is the only institution for higher education in the North Shore and Ko‘olau Loa regions. BYU-H is a nationally and internationally recognized institution of higher learning, offering undergraduate educational programs in mathematics, liberal arts, and management. The University’s demographics are comprised of both national and international students. BYU-H’s mission is to provide educational opportunities for students to learn, to strengthen their character and integrity, and lead lives of learning and service to their families, communities and profession. BYU-H’s vision is to provide a high quality undergraduate education which enables students to fulfill their career aspirations and contribute back to their communities. The campus expansion will improve the University’s long-term viability in Lā‘ie Town by continuing to offer modern academic and living facilities and expanding those opportunities to more students (see Section C.1.b, Basis for the Request).

BYU-H has historically and continues to generate significant economic and employment opportunities for the Ko‘olau Loa community and O‘ahu. The creation of employment opportunities is consistent with the KSCP principle that notes the importance of supporting new employment-based development which will offer quality jobs while being compatible with the existing communities’ rural character and natural environment (KSCP 1999, 2012). BYU-H is one of the largest employers in the Ko‘olau Loa region, along with Turtle Bay and the PCC. BYU-H generates employment opportunities for entry-level students, maintenance and service providers, trades technicians, professionals, and academics. The 14.9-acre expansion will generate additional short-term and long-term employment opportunities. Short-term economic opportunities will be generated through design and construction services and material procurement during project development. New long-term employment opportunities will be created for educators, administrators, and operations and maintenance staff to support the expanded campus facilities and increased student enrollment. In addition to employment opportunities, BYU-H employees and students contribute economically to the Ko‘olau Loa region, county and state through expenditures
in the community, general excise tax (GET), income tax and property tax. BYU-H students, faculty and staff are encouraged to support local businesses, restaurants and service providers through the campus service shuttle that makes scheduled trips to local retail and civic centers.

C.3.b Public Issue, Need, or Problem Addressed

Increased Access to Quality, Higher Education
The planned 14.9-acre campus expansion will support BYU-H’s continued growth in its academic mission and will allow the university to extend its academic offerings to more students, with a planned enrollment growth of 2,900 to 3,500 students over the next five years. BYU-H is committed to ensuring students educational experience and academic environment allows them to succeed in meeting their academic and career goals. The proposed expansion is a continuation of BYU-H’s commitment to invest in a high quality educational experience and environment for students. The proposed new single student dormitories and married student apartments will accommodate an increase in the percentage of enrolled students living on campus. This will help ensure that more students are living in housing conditions that are conducive to academic achievement.

Relieve Housing Demand in Lāʻie
Development of the new student housing will accommodate an increase in the percentage of enrolled students living on campus from approximately 75 to 95 percent. The new dorms will provide room for approximately 936 single students, including 500 new students and 436 existing students. The new married student apartments will provide room for approximately 56 married students and their families. This will provide a small measure of relief for pent-up housing demand and overcrowding in Lāʻie, where most of the off-campus students currently rent. In response to concerns from the community about the financial impact on landowners from the loss of student rental income, BYU-H will construct the proposed student housing in phases over five years to control the rate of students moving on campus and provide time for landowners to financially adjust to the reduction in student rental income.

Provide Employment Opportunities
BYU-H is one of the largest employers in the Koʻolau Loa region. The planned expansion demonstrates BYU-H’s continued commitment to invest in Lāʻie and the Koʻolau Loa and North Shore region. The 14.9-acre expansion will generate new short-term employment opportunities in the form of design, construction and related support services during project development, and new long-term employment opportunities, from entry level to technical and professional positions, to support the expanded campus facility operations and increased student enrollment and related academic programs.

Reduce Traffic
A slight traffic reduction benefit is expected to result by increasing the percentage of enrolled students living on campus, which will reduce the number of students who would otherwise commute to campus. The planned increase in student enrollment will primarily be I-Work Students, who are prohibited by the terms of their visa from owning a car and are obliged to work on-site.

C.3.c Consistency with State and County Plans and Programs

Hawaiʻi State Plan
The Hawaiʻi State Plan, adopted in 1978, and promulgated in HRS, Chapter 226, consists of three major parts:
- Part I, describes the overall theme including Hawai‘i’s desired future and quality of life as expressed in goals, objectives, and policies.
- Part II, Planning Coordination and Implementation, describing a statewide planning system designed to coordinate and guide all major state and county activities and to implement the goals, objectives, policies, and priority guidelines of the Hawai‘i State Plan.
- Part III, Priority Guidelines, which express the pursuit of desirable courses of action in major areas of statewide concern.

Objectives, policies, and priority guidelines of the Hawai‘i State Plan that are applicable to the project are identified in Table 5.

**Table 5: Hawai‘i State Plan Applicability to the Proposed Project**

<table>
<thead>
<tr>
<th>Hawai‘i State Plan Objectives, Policies, and Priority Guidelines</th>
<th>Applicability to the Proposed Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>§226-5 Objective and policies for population</td>
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<tr>
<td>§226-6 Objectives and policies for the economy--in general</td>
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<tr>
<td>§226-7 Objectives and policies for the economy--agriculture</td>
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</tr>
<tr>
<td>§226-8 Objective and policies for the economy--visitor industry</td>
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</tr>
<tr>
<td>§226-9 Objective and policies for the economy--federal expenditures.</td>
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</tr>
<tr>
<td>§226-10 Objective and policies for the economy--potential growth activities</td>
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</tr>
<tr>
<td>§226-10.5 Objectives and policies for the economy--information industry</td>
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</tr>
<tr>
<td>§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.</td>
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<td>§226-18.5 Objectives and policies for facility systems--telecommunications</td>
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<td>§226-20 Objectives and policies for socio-cultural advancement--health</td>
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<tr>
<td>§226-21 Objective and policies for socio-cultural advancement--education</td>
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<thead>
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<th>Hawai‘i State Plan Objectives, Policies, and Priority Guidelines</th>
<th>Applicability to the Proposed Project</th>
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<tr>
<td>§226-22 Objective and policies for socio-cultural advancement--social services</td>
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<td>§226-23 Objective and policies for socio-cultural advancement--leisure</td>
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<td>§226-104 Population growth and land resources priority guidelines</td>
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<td>§226-106 Affordable housing</td>
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<td>§226-107 Quality education</td>
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</table>

Sections of the Hawai‘i State Plan’s goals, objectives, and policies that are relevant to the proposed action are discussed below.

§ 226-6 Objectives and policies for the economy – in general.

(A) 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 Hawai‘i’s people.

§ 226-103 Economic priority guidelines.

(A) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawai‘i’s people and achieve a stable and diversified economy:

1. Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:

2. An industry that would provide reasonable income and steady employment.

Discussion:

BYU-H is one of the largest employers in the Ko‘olau Loa region, along with Turtle Bay and the PCC. The planned 14.9-acre expansion will generate new and diverse short-term and long-term employment opportunities for the Windward and North Shore regions of Oahu and the island as whole. Short-term employment opportunities will be generated through design and construction services and material procurement during project development. New long-term employment opportunities will be created for educators, administrators, and operations and maintenance staff to support the expanded campus...
facilities and increased student enrollment. These new jobs will provide opportunities will increase job choice and provide an improved living standard for Hawai‘i’s people.

§ 226-10 Objective and policies for the economy – potential growth activities.
(A) Planning for the State’s economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawai‘i’s economic base.
(B) Enhance and promote Hawai‘i’s role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.

Discussion:
The proposed 14.9-acre expansion will allow BYU-H to support its academic mission by improving the University’s facilities and increasing the educational offerings to more students. The planned investment in the campus facilities will allow BYU-H to remain viable as a regional and international academic hub, attracting national and international students, faculty, and staff to work and live in Hawai‘i. The students who graduate from BYU-H will be educated and equipped to serve as leaders in their communities and professions in Hawai‘i and abroad, and in this way further promote Hawai‘i’s role as a center for international relations, trade, finance, services, technology, education, culture and the arts.

§ 226-21 Objective and policies for socio-cultural advancement – education.
(A) 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.
(B) To achieve the education objective, it shall be the policy of this State to:
(8) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.

(6) Pursue the establishment of Hawai‘i’s public and private universities and colleges as research and training centers of the Pacific.

Discussion:
To remain viable, the University must grow. The planned expansion is designed to support the University’s offerings and to extend those offerings to more students. The campus expansion represents BYU-H’s commitment to invest in the University, in Lā‘ie and in the North Shore community. The expansion will accommodate the planned growth of student enrollment from 2,900 to 3,500 students over the next five years, and will accommodate an increase in the percentage of enrolled students living on campus. This addresses individual student needs by ensuring that students are living in housing conducive to academic achievement, and addresses community needs by providing a small measure of relief to alleviate demands on the limited housing supply in Lā‘ie by relocating off-campus students onto campus and thereby freeing up rental housing space.
General Plan for the City and County of Honolulu

The General Plan is a written commitment by the CCH to a future for the island of O‘ahu. The current (2002) and proposed general plan revisions (February 2017) provide a statement of the long-range social, economic, environmental, and design objectives and a statement of broad policies which facilitate the attainment of the objectives of the plan. The sections of the General Plan most relevant to this project include:

Section I, “Population”
Objective C: To establish a pattern of population distribution that will allow the people of O‘ahu to live, work and play in harmony.
Policy 3: Manage land use and development in the urban-fringe and rural areas so that:
   a. An undesirable spreading of development is prevented; and
   b. Their population densities in all areas remain consistent with the character and the culture and environmental qualities desired for each community.

Discussion:
The proposed 14.9-acre expansion area is located within an area designated by CCH land use plans and policies for BYU-H campus expansion. All proposed campus improvements will remain within the Community Growth Boundary and areas designated for Institutional use on the KSCP Land Use Map. The planned new single student dormitories, married student apartments and site will be designed and constructed to be consistent with the visual character and the cultural and environmental qualities of the existing campus and surrounding Lā‘ie community.

Section III, “Natural Environment and Resource Stewardship”
Objective A: To protect and preserve the natural environment.
Policy 6: Design and maintain surface drainage and flood-control systems in a manner which will help preserve natural and cultural resources.

Discussion:
To preserve the surrounding natural and cultural resources, the proposed campus expansion will utilize on-site storm water retention and low-impact development (LID) features integrated with site landscaping to ensure that there will be zero net increase in stormwater runoff from the campus. See additional discussion in Section C.3.d, Drainage.

Section V, “Transportation and Utilities”
Objective A: To create a multi-modal transportation system which moves people and goods safely, efficiently, and at a reasonable cost and minimizes fossil fuel consumption and greenhouse gas emissions; serves residents and visitors, including limited income, elderly and disabled populations; and is integrated with existing and planned development.
Policy 1: Reduce traffic congestion and maximize the efficient use of transportation resources by pursuing transportation demand strategies such as carpooling, telecommuting, flexible work schedules, and incentives to use alternative travel modes.

Discussion:
The planned expansion will support an increase in on-campus residency from 75 to 95 percent, which will reduce the percentage of students commuting. The net effect is expected to be a reduction in the percentage of student automobile ownership and vehicle trips. BYU-H has also implemented a Traffic Demand Management (TMD) program to further reduce dependence on automobile ownership and use. The current TMD program offers campus car share services, shuttle services to nearby retail and civic center, a bike share service, and a subsidized student bus pass during the academic term. See additional discussion in Section C.3.d, Traffic.
Section IV, “Housing and Communities”

Objective A: To provide decent housing for all the people of Oahu at prices they can afford.
Policy 9. Encourage the preservation of existing housing which is affordable to low- and moderate-income persons.
Policy 12: Encourage the production and maintenance of affordable rental housing.

Discussion:
The proposed new single student dormitories and married student apartments will accommodate an increase of approximately 1,000 students living on-campus. The dormitories will accommodate 936 single students including 500 new and 436 existing students currently living off-campus. The apartments will accommodate 56 married students and their families. By relocating currently enrolled students who live off-campus into on-campus housing BYU-H will ensure that students will live in qualified and legal housing conducive to academic achievement and reduce the likelihood of students ending up in substandard living conditions. In addition, the on-campus housing expansion will accommodate the planned increase in the total number of enrolled students over the next five years so that new students will not create additional demand for off-campus housing.

Koʻolau Loa Sustainable Communities Plan
The KSCP is prescribed by the City Charter to implement the broad objectives and policies contained in the CCH General Plan. The KSCP serves as a policy guide for public actions in support of regional community goals and visions. The KSCP is currently in the process of being updated by the CCH. The following discussion is based on the objectives, policies and guidelines from the proposed updated draft KSCP (December 2012) that pertains to the proposed campus expansion.

The KSCP identifies BYU-H as an important educational and cultural institution in the Koʻolau Loa region. The plan designates appropriate land for future campus expansion to accommodate academic programs, student housing, and other support facilities. The project parcel is within the land boundary designated for campus expansion by the KSCP. The KSCP’s Land Use Map designates the project parcel for Institutional uses and within the Community Growth Boundary (see Figure D.17, Koʻolau Loa Sustainable Communities Plan – Land Use Map). The KSCP’s Public Facilities Map designates the project parcel as Rural Communities and within the Community Growth Boundary (see Figure D.18, Koʻolau Loa Sustainable Communities Plan – Open Space Map).

The proposed project is consistent with KSCP Section 3.9.2 policies and goals related to BYU-H:

3.9.2 BRIGHAM YOUNG UNIVERSITY – HAWAI‘I
Brigham Young University-Hawai‘i (BYU-H) is a four-year college with an annual enrollment of approximately 2,400 students from numerous countries around the world. The existing BYU-H campus is approximately 210 acres in size and has significant land area available to accommodate planned future improvements to academic programs, student and faculty housing, and other support facilities. The University plans to eventually double its enrollment size to approximately 5,000 students. This growth will be coordinated with the construction of adequate student housing on campus and staff and faculty housing in Mālaekahana to minimize the potential effects that the proposed enrollment increase could have on the future demand for off-campus housing. Given that the current limited supply of available university housing has created a market for off-campus rentals around the University, resolving the need for student and faculty/staff housing may help to ease the on-going housing crisis.
A technology park, which may be affiliated with the University, has been designated adjacent to the BYU-H campus. Development policies and guidelines for the technology park are addressed in Section 3.7.

3.9.2.1 POLICIES

Brigham Young University-Hawai’i should continue to evoke a sense of place that distinguishes it as an important educational and cultural institution and unique asset to the Ko’olau Loa region. The following are policies for development and maintenance of the campus:

- **Encourage the University to maintain its strong community orientation and continue to serve the Ko’olau Loa region as a center of education and multi-cultural exchange, as well as support community activities and services and provide adult educational opportunities.**

- **The design of new facilities should be environmentally sensitive and compatible with the architectural character and culture of the existing campus and adjacent residential areas.**

Discussion:
The KSCP is consistent with the 1996 City Council Resolution No. 96-321, CD1, which supports the expansion and renovation of BYU-H to support, academic, and living facilities for students, faculty, and staff in Lā‘ie. The proposed SLU Urban District expansion is primarily for the purpose of developing new on-campus single student dormitories and married student apartments to accommodate planned increases in student enrollment. The 10-acre south expansion area will provide sufficient area for the construction of three new single-student dormitories, Hale 11 to 13, each with capacity for 312 students. The three new dormitories will accommodate an increase of 936 on-campus students, including 500 new students and 436 students currently living off-campus. The 0.5-acre northwest expansion area will accommodate one new married student apartment building, TV 27. A second married student apartment building, TVA 26 is planned within the existing SLU Urban District. Each apartment will have 28 units. The expansion will accommodate the planned increase in total student enrollment from 2,900 to 3,500 and on-campus residency from 75 (current) to 95 percent.

The requested SLUDBA will allow BYU-H to coordinate the construction of adequate on-campus student housing to minimize the potential effects that the proposed enrollment increase could have on the future demand for off-campus housing, as well provide a small measure of relief for current pent-up housing demand and overcrowding in Lā‘ie, where most of the off-campus students currently rent.

The planned expansion is necessary to ensure that the University remains viable as an international and regional center of education and multi-cultural exchange. The expansion represents BYU-H’s commitment to invest in the Lā‘ie community and in the Ko’olau Loa and North Shore region.

The general design principle for the single student and married student housing projects is to maintain the mid-density, mid-rise open-space character of the BYU-H campus by minimizing the building footprint and providing multiple floors. Single student dormitories will be a four-story structure with single-loaded units around a central courtyard. The married student apartment will be a three-story structure with 28 units. Access driveways, pedestrian walkways, student parking, landscaping, open space and retention areas, and related drainage infrastructure and utilities will be designed to integrate with the existing campus facilities and be compatible with the surrounding character of Lā‘ie town.
C.3.d  Site Suitability for the Need or Problem Being Addressed

**Land Use:**
The proposed use of the 14.9-acre expansion area for University support facilities and single student housing is consistent with the 94/PRU-4 boundary established by City Council Resolution No. 96-321, CD1, for the purpose to “expand, renovate and support academic living facilities for students, faculty and staff of the Brigham Young University”. In addition, the planned expansion is consistent with the KSCP, which identifies the 1996 PRU boundary as appropriate land for future campus expansion to accommodate improvements to academic programs, student and faculty housing and other support facilities.

The north 0.12-acre area is already developed with a concrete slab, ramp and drainage feature. The site was selected for its proximity to existing married student apartment TVA 25. The TVA 25 building may be renovated in the future to extend into the expanded Urban District area, although there are no active plans to do so at present.

The 0.5-acre northwest expansion area is planned for development of one married student apartment, TVA 27. The site was selected for its proximity to existing married student apartments TVA 22 and TVA 21. A second married student apartment TVA 26 is proposed as infill development within the existing SLU Urban District. The proposed TVA 26 and 27 will accommodate existing demand for married student housing. The proposed married student apartments will also provide flex-space to house married students during future renovation of older TVA buildings.

The west and southeast expansion areas are already developed with paved and gravel parking lots, an EUTTB and grassed open space areas that are integrated with the campus drainage system as detention areas. These uses were previously acknowledged or approved by the CCH DPP through various minor modifications to the BYU-H PRU No. 94/PRU-4. The SLUDBA application includes these sites in the proposed SLU Urban District as a house keeping measure to bring existing improvements into conformance with HRS Chapter 205.

The proposed 10-acre south expansion area is planned for development of single student housing. The site was selected for its proximity to the existing single student dormitories (Hales 5, 6, 7, 8 and 10) in accordance with the campus master plan. The proposed expansion area is consistent with the existing campus circulation plan. The 10-acre site has convenient motor vehicle access through the campus and from Kamehameha Highway along Quarry Road, and can be readily integrated into the campus pedestrian path system. The 10-acre area is adequately sized to accommodate construction of three dormitory buildings to be completed within five years with open space for drainage retention and recreation.

**Drainage:**
The proposed campus renovation and expansion projects within the existing campus boundary will result in net zero increase in storm water runoff from the campus and will not compound the flooding in Lāʻie. Increases in runoff from ongoing renovation projects can be accommodated by recently completed on-site drainage system improvements and increases in retention capacity in the front field basins and other on-site retention areas (approximately 1.64 acre-feet of surplus capacity) within the existing campus.

Completed drainage improvements include:

- Raising berms around the front fields and enlarging the Stake Center basin to increase retention capacity;
• Opening curbs and modifying sidewalks on Kulanui Street to direct mauka runoff into the front field basins;
• Installation of underground drainage systems throughout the single student dormitory areas; and
• Reduction in impervious surfaces and replacement with landscaping.

Increases in runoff from TVA 26-27 will be accommodated by the existing on-site retention facilities. Increases in runoff from Hale 11 to 13 will be accommodated by proposed drainage retention basins located to the south of the new dormitories. See Figure E.15, Drainage Plan. The Quarry Road is tributary to the Wailele Stream channel and increases in runoff due to the proposed roadway improvements will not have an impact to the BYU-H campus and Lāʻie. Long-range drainage master plan improvements are contingent on the implementation of the Army Corps of Engineer’s Wailele Flood Risk Management Project (WFRMP). The WFRMP proposes to improve the Wailele Stream channel to accommodate the 100-year storm flows from the Wailele tributary areas and also accept runoff from the south campus tributary areas. The remaining (north) portion of campus will continue to drain to Naniloa Loop, the front retention basins and other on-site retention areas. No additional drainage infrastructure system improvements are needed to accommodate the proposed campus expansion and renovation project. The proposed project will comply with the DPP’s new 2017 Storm Water Quality rules.

A flood study was prepared to determine the FEMA Flood Zone A base flood elevations (BFE) for the southern portion of campus from Wailele Stream to the Academic Circle. See Exhibit F.10, BYU-H Zone A Base Flood Elevation Determination. This study provides BFEs for the 10-acre area proposed for the single student dormitories. The proposed student dormitories have a BFE ranging from 26.5 feet and 18 feet above MSL.

Traffic
The planned campus expansion is expected to result in a reduction in traffic demand by increasing on-campus student residency. In general, car ownership is lower among students who live on campus, and lower among international students vs. local or mainland students. BYU-H’s planned increase in overall student enrollment coincides with planned increases in the percentage of on-campus student residency and in the proportion of international students. The net effect is expected to be a reduction in the percentage of automobile ownership and use by BYU-H students.

In addition, BYU-H is continuing and expanding TMD programs that have proven successful in reducing dependency on individual automobile ownership and use. Current programs include:

• Campus car share/car rental service
• Campus shuttle service that makes scheduled trips to retail and civic centers
• Bike share program (Sustainable World Action and Technology Team), and
• Subsidy for student bus passes.

C.3.e Intended Market
The property will continue to be owned by BYU-H. The property will not be sold to another entity. The proposed expansion is intended to provide area for the development of additional on-campus single and
married student housing and to bring existing campus parking lots and an EUTTB into conformance with the State Land Use Law, HRS Chapter 205.

C.3.f Designated Use Versus Proposed Use

Although the proposed 14.9-acre expansion area is located within the SLU Agricultural District, the entire 94/PRU-4 boundary, including the expansion area, is located within the KSCP Community Growth Boundary which delineates land planned for urban and institutional development. The PRU area is identified in the KSCP Open Space Map and Land Use Map as intended for ‘Rural Communities’ and ‘Institutional Uses’ respectively. The KSCP maps reflect the 1996 PRU approval (Resolution No. 96-321, CD1), which identifies the project area as appropriate land for future campus expansion. The land use policies and guidelines established in the KSCP represent the City’s and the Koʻolau Loa community’s recognition that the public benefit provided by the continued operation and planned expansion of the BYU-H campus offsets the loss of these lands for agricultural use. The use of these lands for single and married student housing and campus support facilities will allow BYU-H to extend its academic offerings to a greater number of students by accommodating a planned increase in student enrollment, from 2,900 to 3,500 students, over the next five years.

C.3.e Additional Support for the Proposal

In a letter dated May 18, 2017, the Applicant requested DPP to determine whether an Environmental Assessment (EA) would be required for the proposed SLUDBA and campus expansion. The DPP responded in a letter dated July 13, 2017, that an EA is not required. See Exhibit F.9, DPP EA Determination Letter. The DPP requested that the Applicant provide a flood study for Wailele Stream and a description of all uses within or partially within the SLU Agricultural District with a determination of their conformance with HRS Chapter 205. The flood study is provided in Exhibit F.10. A discussion on uses with the SLU Agricultural District is provided in Section C.2.f.

The Applicant presented the proposed campus expansion plan and SLU Boundary Amendment at the following community meetings:

- Lāʻie Community Association (LCA) Board of Directors meeting on August 8, 2017;
- LCA general meeting on November 2, 2017; and
- Koʻolau Loa Neighborhood Board meeting on April 12, 2018.
C.4 State Land Use District Boundary Amendment Summary Sheet

The completed State Land Use District Boundary Amendment Summary Sheet is included as Exhibit F.1.
C.5 References


D. Figures
Figure D.3, Tax Map Key
Figure D.4, CCH Zoning Districts
Figure D.5, Topography

Legend
- Project Area
- 1996 PRU boundary
- Streams
- Contours (5 ft)

Topography
Brigham Young University
Hawai’i Campus Expansion
Lā‘ie, Hawaii
Hawai’i Reserves, Inc.

Legend
- Project Location

O‘ahu
Pacific Ocean

Figure D.5, Topography

Figure D.5, Topography

Legend
- Project Area
- 1996 PRU boundary
- Streams
- Contours (5 ft)

Topography
Brigham Young University
Hawai’i Campus Expansion
Lā‘ie, Hawaii
Hawai’i Reserves, Inc.

Legend
- Project Location

O‘ahu
Pacific Ocean
Figure D.6, Soil Types
Figure D.7, Agricultural Land of Importance to the State of Hawai’i
Figure D.8, Land Study Bureau

Legend
- Project Area
- 1996 PRU boundary
- Streams
- LSB classification
  - B (70-84)
  - C (55-69)
  - D (30-54)
  - E (0-30)

Land Study Bureau
Brigham Young University
Hawai‘i Campus Expansion
Lā‘ie, Hawaii
Hawai‘i Reserves, Inc.

R. M. Towill Corporation

Figures
Figure D.9, Important Agricultural Land
Figure D.10, Surrounding Land Uses
Figure D.11, State Land Use Commission District Boundary Map 1964
Figure D.12, State Land Use Commission District Boundary Map 1969
Figure D.13, State Land Use Commission District Boundary Map 1974
Figure D.14, State Land Use Commission District Boundary Map 1991
Figure D.15, State Land Use Commission District Boundary Map 1991
Figure D.16, Existing Established Uses
Figure D.17, Koʻolau Loa Sustainable Communities Plan - Land Use Map
Figure D.18, Koʻolau Loa Sustainable Communities Plan – Open Space Map
E. Photos
Photo E.1, Aerial Photo 1949

Lā‘ie Plantation
Photo E.2, Aerial Photo 1959
Photo E.3, Aerial Photo 1977
Photo E.4, Aerial Photo 1987
Photo E.5, Aerial Photo 1990

Lā‘ie Quarry

BYU-H

PCC Parking Lot
F. Exhibits
F.1  State Land Use District Boundary Amendment Summary Sheet
Ko‘olau Loa Sustainable Communities Plan (KSCP)  
STATE LAND USE DISTRICT BOUNDARY AMENDMENT  
BEING CONSIDERED

Amendment/Project Information


Location: BYU-H Campus: 55-220 Kulanui Street, La‘ie Hawai‘i 96762

Address(s) of Subject Area (Where Applicable):

Owner/Developer: Brigham Young University - Hawai‘i  
Campus (BYU-H) Attn: Eric Conrad

Petitioner: R.M. Towill Corporation Attn: James Niermann

Basis for Request: Process the BYU-H campus expansion of 14.9 acres of SLU Agricultural to Urban for proposed on-campus student housing and existing utility building, parking lots, and grassed areas.

Type of Project: University campus expansion

Impact on Provision of Housing: Develop on-campus single and married student housing, which will alleviate the housing demand in La‘ie by bringing off-campus students on-campus.

Existing Conditions

Land Use: SLU Agricultural District

Structures: Number: Three dorms and two apartments.
Type: Single and married student housing.
Height: Three - four story buildings and two - three story buildings.

Present Plan/Zoning Designations

State Land Use: Agricultural

DP/SCP Land Use Map (If applicable): Institutional

Public Infrastructure Map (If applicable): Rural Communities

DP/SCP Vision/Policies for Area (If applicable): KSCP Section 3.9.2
Zoning: AG-1

ALISH: Prime lands (1)

Land Study Bureau Classification: B, C, and E

Soil Conservation Service Soil Survey: Hale‘iwa silty clay (Hea), Coral outcrop (CR), Keaau clay (KmA), and Mokuleia loam.

Possible Constraints:
F.2    SLUDBA Metes and Bounds Map
F.3 CUP No. 89/CUP 1-27, Off-Site Parking File
CONDITIONAL
USE PERMIT

FILE NO.
89/CUP L 27

REFERENCE FILE NO.

DOCUMENTS
ATTACHMENT TO DLU MASTER APPLICATION FORM
Conditional Use Permit, Type 1

Written Information

This application for a conditional use permit is submitted for off-site use of parking facilities pursuant to sections 3.70-8 and 4.40-28 of the Land Use Ordinance to satisfy off-street parking requirements for the Polynesian Cultural Center.

The parking facility is located on property owned by BYU-Hawaii Campus just mauka and adjacent to the Polynesian Cultural Center’s Pacific Pavilion. The nearest entrance to the Polynesian Cultural Center from the parking facility is less than 400 feet by normal pedestrian routes.

The parking facility provides 146 additional spaces for use by the Polynesian Cultural Center.

Two copies of a Parking Licensing Agreement executed by and between BYU-Hawaii Campus and the Polynesian Cultural Center are submitted with this application.

The close proximity of the parking facility to the Polynesian Cultural Center, access to existing roads, and generally level land, make the site suitable for its intended use.

The parking facility will not alter the character of the surrounding area which is primarily in urban use. The property immediately adjacent and makai of the subject property is in the Urban District and is zoned B-2 Community Business District, and is utilized as part of the Polynesian Cultural Center. The property immediately adjacent and mauka of the subject property is partially in the Urban District and partially in the Agricultural District and zoned AG-1 and R-5. The property immediately adjacent and on the Kahuku-side of the subject property is in the Urban District and utilized by the Polynesian Cultural Center for support services. The property immediately adjacent and on the Hauula-side of the subject property is in the Agricultural District and zoned AG-1 and AG-2, has for years been uncultivated open space formerly utilized as a quarry area, and boarders an access road to mauka properties.

The use of the subject property for parking purposes will serve the increasing parking needs of employees and patrons of the Polynesian Cultural Center.

Parking Calculations

Parking calculations for BYU-Hawaii Campus have been prepared by Paul Louie & Associates, AIA, a copy of which is attached to this application.
**Drawings/Plans**

The enclosed drawings/plans have been prepared by the Applicant's architects, Paul Louie & Associates, AIA.

**Authorization Letters**

Authorization letters from the Recorded Fee Owner and Applicant are attached hereto.

**Fee**

The application fee of $100.00 is submitted herewith.

000
TRAFFIC/PARKING

Traffic:

The primary streets affected by BYU-HC include Naniloa Loop, Kulanui Street and Kamehameha Highway. Key intersections are Kamehameha Highway/Naniloa Loop and Kamehameha Highway/Kulanui Street. The campus is set back from Kamehameha Highway, so vehicles use Naniloa Loop coming from Hauula/Kaneohe and Kulanui Street from Kahuku/Halaleia.

Because the majority of students live on campus and many of the faculty/staff live in Laie, there is no major traffic impact generated presently during normal University operations. The planned projects in the Master plan should not generate an increase in the vehicular trips for BYU-HC. The Technology Building Redevelopment 2 Classroom Addition, Sewer Treatment Plant, and Hale 6 & 3 Renovations should generate no new vehicular trips. These projects will not affect the enrollment or staffing, thus not generating new traffic. The new Auxiliary Services Building and Student Chapel will consolidate spaces for existing programs and uses at BYU-HC. These facilities should not generate new vehicular traffic.

The new Residence Hall Seven and Temple View Apartments while increasing the capacity of the dormitory rooms at BYU-HC, will decrease the number of commuting students. The reduction in commuting students, as more of the enrollment lives on campus, will decrease the traffic impact of BYU-HC.

It should be noted that as compared to most of the other universities and colleges on Oahu, BYU is truly an on-campus living university. With the 1,198 dorm beds and 250 apartments (about half of these apartments have two married students), approximately 1,870 (1,198 + 250 + 125) students live on campus. This is over 75% of the student enrollment ceiling (2,000).

Parking

Currently, there are 1,483 parking spaces serving less than 2,000 students, and 362 faculty and staff. This is more than adequate as there is never a parking problem with the small commuter population and community based University. The spaces are average of 9'x20', all qualifying as standard spaces. The location and layout of the parking is shown on the attached 24" x 36" Master Plan drawings.

It is difficult to determine a realistic off-street parking requirement for a University, especially one with such a high percentage of on-campus student and faculty/staff dwellers. The LUO does not provide parking requirements for dormitories, nor does it account for the fact that students and faculty/staff that live on campus walk to classes and offices. Thus by counting parking for housing and classrooms/offices, the parking requirement is twice what is really needed in this circumstance.

Another condition is that a majority of the students living in dorms and apartments do not own cars because they live, attend school and work in the community. This is an unusual circumstance for BYU-HC because most of the jobs are either on campus or at the Polynesian Cultural Center.
Using LUO requirements it was calculated that the existing University buildings require 1,366 spaces and 1,483 are provided. If an adjustment were made to delete parking for dorms and reduce the parking for married apartments, because the parking for classrooms would be used for student parking, the required spaces would be 1,005. This is still much higher than the normal daily use of the present spaces on campus. On an average day the Physical Plant Department counted 660 spaces were used.

With the planned work requiring an additional 164 spaces (LUO) the total required would be 1,530 spaces. The planned work also will add 30 spaces for a total new capacity of 1,573 spaces, still in excess of the requirements. However if the parking requirements were adjusted, deleting dorms and reducing apartments, the new required would be 64 spaces. This also includes a reduction in the parking for the Student Chapel to 13 (from 49) because all the members are students, faculty and staff. Also, the Chapel is used on Sunday when no educational activities are held and plenty of spaces are available on campus. The adjusted required spaces for the existing and planned work is 1,069 which is significantly less (2/3) than the 1,573 spaces that will be available.
Parking Calculations for Existing Facilities

1. Classrooms

   41 Classrooms @ 2,018 Capacity
   2 per 10 students
   See following classroom tabulation

2. Offices

   Total: 53,592 sq. ft.
   1 per 400 sq. ft.
   See following office tabulation

3. Cannon Activity Center - 78,100 sq. ft.

   60,000 sq. ft. assembly
   assume 50% users are students/staff
   1(x.5) per 75 sq. ft. = 400
   5,000 seats
   1 per 5(x.5) = 510


   10,000 sq. ft. assembly
   1(x.5) per 75 sq. ft. = 67
   800 seats
   1 per 5(x.5) = 80

5. Child/Parent Center

   35 Children Capacity
   1 per 10 children

6. Medical Center - 2,644 sq. ft.

   1 per 400 sq. ft.

7. Presidents Residence - 3,300 sq. ft.

8. Dormitory

   598 Units (between 400 and 280 sq. ft.)
   Because most are students without cars, use .5 per unit

9. Apartments - Married Students

   250 Units (600 sq. ft.)
   Because most are students without cars, use .5 per unit

TOTAL PARKING REQUIRED FOR EXISTING FACILITIES: 1,366
Parking Required For Planned Projects

1. Technology Building Remodel & Addition
   - 4 new classrooms/labs
   - 4 x 20 capacity = 80 students
   - 2 per 10 students
   - 16

2. Residence Hall Seven
   - 104 Units (300 sq. ft.)
     - Because most are students without cars, use .5 per unit
     - 52

3. Sewer Treatment Plant Expansion
   - No new parking required
   - 0

4. Temple View Apartments
   - 48 Units (575 sq. ft.)
     - Because most are students without cars, use .5 per unit
     - 24

5. Hale 6 Dorm Renovations
   - No change in capacity
   - 0

6. Auxiliary Services Building - 12,000 sq. ft.
   - Offices 6,000 sq. ft. @ 1 per 400 sq. ft. = 15
   - Storage/warehouse 3,000 sq. ft. @ 1 per 1,500 sq. ft. = 2
   - Business Services 3,000 sq. ft. @ 1 per 500 sq. ft. = 6
     - Total Spaces
     - 23

7. Student Chapel
   - Chapel Capacity: 245
     - 1 per 5 seats
     - 49

8. Hale 3 Dorm
   - No change in capacity
   - 0

TOTAL REQUIRED PARKING FOR PLANNED PROJECTS

TOTAL REQUIRED PARKING FOR EXISTING & PLANNED

EXISTING PARKING SPACES

NEW PLANNED PARKING

TOTAL SPACES PROVIDED
LETTER OF TRANSMITTAL

TO: Ms. Pam Davis
Department of Land Utilization
Municipal Building, 7th Floor
650 S. King Street
Honolulu, HI 96813

DATE: October 4, 1989

RE: Polynesian Cultural Center
Conditional Use Permit (Type 1) Application

COPIES DESCRIPTION
 Original + 1 Page 2 of the Parking License Agreement

Is/Are transmitted herewith:

( ) For Your Information ( ) For Recordation
( ) For Signature & Return ( ) For Necessary Action
( ) For Signature & Forwarding (X) Per Your Request
As Noted Below ( ) Per Our Conversation
( ) For Filing ( ) For Your Files
( ) For Your Review & Comments ( ) See Remarks Below

SHOULD YOU HAVE ANY QUESTIONS, PLEASE CALL.

KOSHIRA & YOUNG

By: Randall K. Sing
October 4, 1989

MEMORANDUM

TO: MR. RICHARD D. WURDEMAN, CORPORATION COUNSEL
FROM: BENJAMIN B. LEE, DEPUTY DIRECTOR
SUBJECT: 89/CUP-1/27, Parking License Agreement between Polynesian Cultural Center and BYU - HC

We have approved the attached documents as to their content and would appreciate your reviewing them as to their form and legality.

Should you have any questions, please contact Pamela Lewis of our staff at extension 5839.

for

BENJAMIN B. LEE
Deputy Director

BBL:int

Encl. One (1) copy of Parking License Agreement between Brigham Young University - Hawaii Campus and the Polynesian Cultural Center.

REVIEWED

BY

[Signature]
MAYOR OF HONOLULU
PARKING LICENSE AGREEMENT

THIS AGREEMENT, made and entered into this 18th day of September, 1989, by and between Brigham Young University-Hawaii Campus, a Utah non-profit corporation, whose principal place of business is 55-220 Kulanui Street, Laie, City and County of Honolulu, State of Hawaii, hereinafter called "Licensor", and the Polynesian Cultural Center, a Hawaii non-profit corporation, whose principal place of business is 55-370 Kamehameha Highway, Laie, City and County of Honolulu, State of Hawaii, hereinafter called "Licensee";
WITNESSETH:

WHEREAS, the Licensor is the fee owner of certain real property and improvements situated at 55-220 Kulanui Street, Laie, Oahu, Hawaii 96762, and being a portion of the land identified by Tax Map Key 5-5-06: 5, hereinafter referred to as the parking facility; and

WHEREAS, the Licensee has commenced plans to add a large format theater to its premises, occupying an area of 10,900 square feet, more or less; and

WHEREAS, under the applicable ordinances of the City and County of Honolulu, the Licensee needs an additional one hundred forty-six (146) parking spaces in order to construct the theater as aforesaid; and

WHEREAS, the Licensor has available the parking facility, an area set aside for parking to accommodate 146
additional parking spaces within 325 feet from an entrance to the Licensee premises; and

WHEREAS, the Licensor is willing to allow the Licensee and its employees and patrons the use of one hundred forty-six (146) parking spaces in the parking facility on the Licensor's premises for the purpose of permitting the Licensee to meet the parking requirements for the theater;

NOW, THEREFORE, Licensor and Licensee agree as follows:

1. That the Licensor shall set aside and rent to the Licensee one hundred forty-six (146) parking spaces at the parking facility for the use of the Licensee and its employees and patrons while patronizing the Licensee's premises;

2. That the said parking spaces set aside by Licensor at the parking facility shall be continually available to Licensee for the use of the Licensee and its employees and patrons for a period of one (1) year from the date hereof, and shall be renewed by mutual written agreement of both parties from year to year thereafter; provided, however, that the Licensor may, at any time, terminate this license by giving written notice thereof to the Licensee and
to the Director of Land Utilization at least thirty (30) days prior to the effective date thereof;

3. That Licensee may substitute such parking space or spaces in lieu of the parking spaces made available by Licensor to Licensee's employees and patrons to comply with the said ordinances, but subject to the prior acceptance of the Director of Land Utilization of the City and County of Honolulu;

4. That Licensee, its successors and assigns, stipulate that if such spaces are not maintained, or other spaces acceptable to the Director of Land Utilization, substituted, the use or such portion of the use as is deficient in number of parking spaces shall be discontinued;

5. That Licensee shall indemnify Licensor and save it harmless from any and all claims or demands by third persons for actions, damages, liability and expenses in connection with loss of life, personal injury or wrongful death and/or damage to property arising from or out of any occurrence in, upon, or at the parking spaces rented to Licensee at the parking facility or occasioned wholly or in part by any act or omission of Licensee, its agents, employees and patrons. In case the Licensor shall, without fault on its part, be made a party to any litigation commenced by or against Licensee, then the Licensee shall
protect and hold the Licensor harmless and shall pay all costs, expenses and reasonable attorney's fees incurred or paid by the Licensor in connection with such litigation;

6. That the Licensee shall maintain and keep current a liability insurance policy naming the Licensor as an additional insured and shall deliver a copy thereof, together with proof of payment of premiums therefor;

7. That the City and County of Honolulu, State of Hawaii, shall have the right to enforce this Agreement and the provisions herein by appropriate action at law or suit in equity against either or both of the parties to this Agreement including recovery of court costs and attorney fees;

8. That if either of the parties to this Agreement should fail to comply with all of the provisions (including all notice requirements) hereof or carry out any agreement herein by such party to be performed, such party shall pay to the City and County of Honolulu, State of Hawaii, the sum of three dollars per parking space for each and every day said party remains in breach as liquidated damages and not as a penalty. This provision shall not prevent the City and County of Honolulu from obtaining from the parties to this Agreement any other fine, penalty or
other remedy as may be provided by law for enforcement of this Agreement.

9. That Type 1 Conditional Use Permit No. 89/CUP-2-27 is not transferable and any change of occupancy or use of the premises as described above shall require a new Type 1 Conditional Use Permit, and the Licensee shall inform the Director of Land Utilization when the occupancy of the premises is changed or terminated.

IN WITNESS WHEREOF, the parties have executed these presents the day and year first above written.

BRIGHAM YOUNG UNIVERSITY-
HAWAII CAMPUS

By
ALTON WADE
Its President

Licensor

POLYNESIAN CULTURAL CENTER

By
JAMES P. CHRISTENSEN
Its President

Licensee
STATE OF HAWAII
CITY AND COUNTY OF HONOLULU

in this 18th day of September, 1989, before me appeared Alton Wade to me personally known, who, being by me duly sworn, did say that he is the President of Brigham Young University-Hawaii Campus, a Utah non-profit corporation, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said Alton Wade acknowledged said instrument to be the free act and deed of said corporation.

Notary Public, State of Hawaii
My commission expires: 10/1/92
On this 15th day of September, 1989, before me appeared James P. Christensen to me personally known, who, being by me duly sworn, did say that he is the President of the Polynesian Cultural Center, a Hawaii non-profit corporation, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said James P. Christensen acknowledged said instrument to be the free act and deed of said corporation.

[Signature]
Notary Public, State of Hawaii

My commission expires: 10/1/92
DLU MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing."

PLEASE ASK FOR THESE INSTRUCTIONS.

All specified materials and fees must accompany this form; incomplete applications could delay processing. You are encouraged to consult with department staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filing" sheet.

PERMIT REQUESTED (Check one or more as appropriate):

- Agricultural Cluster
- Cluster Housing
- Country Cluster

Conditional Use Permits:
- Type 1
- Type 2

- Existing Use
- Flood Hazard Variance

(PARKING SITE)

5-5-06; portion 5

LOT AREA: (AC: 50, 400 sq. ft. (AC: 1.15 acres))

STREET ADDRESS/LOCATION OF PROPERTY: 55-220 Kulanui Street

Lael, Hawaii 96762

RECORDED FEE OWNER:

Name: Brigham Young University
Mailing Address: Hawaii Campus, 55-220
Kulanui St., Laie 96762
Phone Number: 293-3383

APPLICANT:

Name: Polynesian Cultural Center
Mailing Address: 55-370 Kamehameha Hwy.
Lael, Hawaii 96762
Phone Number: 293-3000

AUTHORIZED AGENT/CONTACT PERSON:

Name: James T. Toshika, Esq.
Mailing Address: 1001 Bishop St., 2600 Pauahi Tp., Honolulu, HI 96813
Phone Number: 523-3900

PRESENT USE OF PROPERTY/BUILDING: University
and related support facilities, including off-street parking

PROJECT NAME (if any): Off-site use of parking facilities

PROJECT PROPOSAL (Briefly describe the proposed activity or project): To allow off-site use by Applicant of an off-street parking facility on Recorded Fee Owner's property pursuant to L&O sections 3.70-8 and 4.40-28.

FILE NO. 89/CUP1-27

THIS COPY WHEN SIGNED BELOW, IS NOTIFICATION OF THE ACTION TAKEN.

Robert Marz, Signature 10-25-89

The above approval does not constitute approval of any other required permits, such as building permits.
APPROVAL, subject to the following conditions:

1. This Conditional Use Permit for off-site parking shall remain in effect only as long as the 146 off-street parking spaces remain available and continue to be honored by the Licensor, Brigham Young University-Hawaii Campus, according to the approved agreement. Failure at any time of the Licensor to provide the 146 spaces shall void this permit.

2. The off-street parking layout shall conform to Sections 3.70-1 through 3.70-9 and 3.80 of the Land Use Ordinance.

3. This application has only been reviewed and approved pursuant to the provisions of Section 4.40-28, and development shall comply with all other provisions of the Land Use Ordinance.

4. The Director of Land Utilization shall reserve the right to impose additional requirements if necessary to promote and protect the health, safety, and welfare of the people of the City and County of Honolulu.

5. Approval of this Conditional Use Permit shall not be construed as approval of any building or sign permit applications; such applications are reviewed separately and shall comply with applicable codes and regulations.

6. This approval may be revoked by the Director of Land Utilization when there is a breach of any of the conditions stated above; provided that for good cause, the Director may amend the above conditions.
Received from

Kauhi N. Young, Attorney at Law

One hundred 00/100 DOLLARS

For 89/100 27

Tax Map Key 5-5-41 5-8-25 30

$100.00

Racy C. Neito
DEPARTMENT OF LAND UTILIZATION

Cash received 968.13
DEPARTMENT OF LAND UTILIZATION
ENVIRONMENTAL CHECK LIST

(To Be Kept In Application Folder)

<table>
<thead>
<tr>
<th>ENVIRONMENTAL IMPACT STATEMENT (EIS) COMPLIANCE</th>
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<td>APPLICABILITY:</td>
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<tr>
<td>□ STATE/COUNTY LANDS/FUNDS</td>
<td>□ Negative Declaration Published</td>
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<tr>
<td>□ STATE CONSERVATION LANDS</td>
<td>Date ____________________</td>
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<tr>
<td>□ HISTORIC SITES (State or National Register)</td>
<td>□ EIS Prep Notice Issued</td>
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<tr>
<td>□ WAIKIKI AREA (Section A of Development Plan)</td>
<td>Date ____________________</td>
</tr>
<tr>
<td>□ GENERAL PLAN AMENDMENT (After June 15, 1974)</td>
<td>□ EIS Accepted ____________</td>
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<tr>
<td>□ SHORELINE SETBACK AREA</td>
<td>(EOC Bulletin Publication Date)</td>
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*If applies, route to LUC

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<th>SPECIAL MANAGEMENT AREA (SMA) COMPLIANCE</th>
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<td>□ WITHIN* SMA</td>
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<td>□ Major Permit</td>
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<td>ASSESSMENT:</td>
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<td>□ See EIS Assessment 1 above</td>
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<td>□ Negative Declaration Published</td>
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<td>Date ____________________</td>
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<td>□ EIS Prep Notice Published</td>
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<td>□ EIS Accepted ____________</td>
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<td>(EOC Bulletin Publication Date)</td>
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*If within SMA, route to LUC

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<tr>
<th>SHORELINE SETBACK RULES &amp; REGULATIONS</th>
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<td>□ Exempt*</td>
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<td>*government projects requires two public hearings</td>
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<td>DATE OF CERTIFIED SHORELINE</td>
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*If applies, route to LUC

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<tr>
<th>OTHER DLU PERMITS REQUIRED</th>
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<tr>
<td>1. 88/28A-105 (AKOND. 6/30/89)</td>
</tr>
<tr>
<td>2. 89/SUP-2 (APPD. PLANNING COMM)</td>
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</tbody>
</table>

For Environmental Affairs Branch Only
Maps ☐  Mailing List ☐  Acknowledgement Letter ☐
April 22, 1989

Re: Conditional Use Permit, Type 1 Application

To Whom It May Concern:

The following person is authorized to act as agent for the applicant (Polynesian Cultural Center) with respect to PCC's application for a Conditional Use Permit, Type 1, for joint use/off-site parking on property identified as TMK 5-5-06: por. 5:

James E. T. Koshiba, Esq.
KOSHIBA & YOUNG
2600 Pauahi Tower
1001 Bishop Street
Honolulu, Hawaii 96813
Telephone: (808) 523-3900

Sincerely,

James P. Christensen
President/General Manager
THE POLYNESIAN CULTURAL CENTER

/da
April 24, 1989

To whom it may concern:

RE: Conditional Use Permit, Type I Application

The following person is authorized to act as agent for the fee owner (Brigham Young University—Hawaii Campus) of TMK 5-5-06: por. 5 with respect to the Polynesian Cultural Center’s application for a Conditional Use Permit, Type I:

James E. T. Koshiba, Esq.
Koshiba and Young
2600 Pauahi Tower
1001 Bishop Street
Honolulu, Hawaii 96813
Telephone: (808) 523-3900

Yours truly,

Brigham Young University—Hawaii Campus

[Signature]

Alton L. Wade

ALW:Jt
Conditional Use Permit Application
Polynesian Cultural Center

Off-Site Use of Parking - BYU-UC
Parking Tabulations BYU-UC

Summary of Existing and Required Parking
(Breakdowns on attached pages.)

A. Existing and Planned Parking.
   1. Existing Parking Spaces - for Campus Facilities: 1,483
   2. Planned Parking spaces - for Campus Facilities: 90
      - Based on PRU Application by BYU-UC.
      Total existing and planned parking for Campus Facilities: 1,573
   3. Existing and Planned parking:
      - For offsite use by Polynesian Cultural Center.
      Total existing and planned parking on BYU-UC Campus: 1,719

B. Required Parking for Existing and Planned Facilities.
   1. Required Parking for Existing Facilities: 1,365
   2. Planned Parking Required for New Facilities:
      - Based on PRU Application by BYU-UC.
      Total required parking for existing and planned facilities: 1,530
HAND DELIVER

Mr. Robert Bannister
Department of Land Utilization
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii  96813

Re: Polynesian Cultural Center
Conditional Use Permit (Type 1) Application

Dear Mr. Bannister:

I am hereby resubmitting the conditional use permit application to allow off-site use of certain parking stalls located on the BYU-Hawaii Campus by the Polynesian Cultural Center. (A Rejection Notice was received by this office on September 15, 1989.)

Enclosed are the following:

1. DLU Master Application Form w/attachments
2. Authorization letters from PCC and BYU-Hawaii
3. Two copies of a Parking License Agreement
4. Check in the amount of $100.00 made payable to Director of Finance (filing fee)
5. Site plans prepared by Applicant's architect, Paul Louis & Associates, AIA. (3 sets)
Mr. Robert Bannister  
September 19, 1989  
Page 2

If you have any questions or require further information for the application, please do not hesitate to contact me at 523-3900, or the Architect at 524-6400.

Very truly yours,

James E. T. Koshiba
for Koshiba & Young

JETK:RKS:leo

Enclosures

rc:  President James P. Christensen
     President Alton Wade
     Paul Louie, AIA
DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
850 SOUTH KING STREET
HONOLULU, HAWAII 96813 • 808-523-4432

ACCEPTANCE NOTICE

Name: POLYNESIAN CULTURAL CENTER
Location: 55-370 Kamehameha Highway and 55-220 Kulanui Street - Laie (Principal Use Site)
Tax Map Key: 5-5-40: 5 (Parking Site); and 8-28, url 30
Received: September 19, 1989 File No. 89/CUP1-27
Request: CONDITIONAL USE PERMIT (Tyo01) - Off-Site Parking Facilities

The above application has been reviewed and accepted as meeting the basic filing requirements. As we review your application, we may request additional information to establish a clearer understanding of your proposal.

THIS ACCEPTANCE NOTICE DOES NOT CONSTITUTE APPROVAL OF YOUR REQUEST. YOU WILL BE NOTIFIED IN WRITING WHEN FINAL ACTION IS TAKEN.

If you have any questions, please call Pamela Davis at 527-5929 and refer to the above File No.

For John P. Whalen
Director of Land Utilization
Date 9-29-89

Note: If you have appointed an agent to represent you, all future correspondence will be with the agent. If you should change agents, please notify the Department of Land Utilization immediately.
1965 ZSC and LCAI Quarry Lease
LEASE

THIS INDENTURE executed this \( \_\_ \) day of \( \_\_\_\_\_\_\_ \), 196\_, by and between ZIONS SECURITIES CORPORATION, a Utah corporation authorized to do business in the State of Hawaii, herinafter called "Lessor", and LAIE CONCRETE & AGGREGATE, INC., a Hawaii corporation whose post office address is Box 1193, Laie, City and County of Honolulu, Hawaii, herinafter called "Lessees".

WITNESSETH:

That Lessor, in consideration of the rent herinafter provided to be paid by the Lessee to Lessor and of the terms and conditions herinafter set forth to be observed and performed by Lessee, does hereby demise and lease unto Lessee:

ALL of those certain parcels of land more fully described in Exhibit "A" and Exhibit "B" attached hereto and made a part hereof;

TO HAVE AND TO HOLD the same unto Lessee for a term commencing October 1, 1965 and ending September 30, 1995, subject, however, to provisions for partial termination or extension as herein provided, Lessee yielding and paying therefor during said term unto Lessor rent at the rate of ONE DOLLAR per acre per year for the land described in Exhibit "A", which amounts to SIXTEEN AND 63/100 DOLLARS ($16.63) per year, and at the rate of TEN DOLLARS per acre per year for the land
described in Exhibit "B", which amounts to TWO HUNDRED FIFTY-EIGHT AND 74/100 DOLLARS ($258.74) per year, until such time as Lessee begins to remove rock from the land described in Exhibit "B", at which time the rent for this parcel shall be reduced to ONE DOLLAR per acre per year. Said rental on both parcels shall be payable quarter-annually in advance commencing October 1, 1965, together with royalties upon or payment for the rock being removed from the demised premises as herein-after provided; PROVIDED, HOWEVER, that this lease shall terminate in the event the coral has been leveled and removed before the term has expired.

AND Lessor hereby covenants with Lessee that upon payment by Lessee of the annual rent as aforesaid and the royalties herein-after provided, at the times and in the manner herein set forth, and upon the observance and performance of the terms, covenants and conditions herein-after contained and on the part of Lessee to be observed and performed, Lessee shall peaceably hold and enjoy the demised premises, herein called the "leasesite", without hindrance or interruption by Lessor or any other person or persons lawfully or equitably claiming by, through or under it.

AND the Lessee hereby covenants with Lessor as follows:

1. **Rental, Royalty and Option to Purchase Coral Rock in Place.** Lessee agrees that it will pay to Lessor for all crushed coral and bulk coral removed from and after October 1, 1965, a royalty for each cubic yard removed payable in the amount and at such times as is provided in the Retail Installment Contract for said coral between Lessor and Lessee of even date herewith.
2. Clearance of Site. Lessee undertakes and agrees that it will quarry down to a level of one foot below grade and remove said coral rock from the leasesite, and clear the entire leasesite on or before September 30, 1995.

If Lessee shall be delayed by reason of a national emergency, restrictions imposed by lawful authority, unavoidable casualty, or other like causes which are beyond Lessee's control, and that are in no way due to Lessee's own neglect or failure, and if such delay should continue for a period of more than thirty (30) days, the time herein provided for the completion of the quarrying, crushing and clearing shall be extended by the period of such delay and the term of this lease shall be extended by such period.

In leveling said leasesite, Lessee shall fill the quarry floor with surface soil generally free from rocks and suitable for the purpose of growing grass and other types of ground cover to the grade of the adjoining land. One of the material inducements causing Lessor to enter into this lease at the rent provided for herein is the desire to have the leasesite leveled and covered with surface soil to the depth of one (1) foot. As security to Lessor for the faithful performance of Lessee's covenants herein, the Lessee shall, immediately upon execution of this lease, obtain a bond with a surety company approved by Lessor in the amount of TWENTY FIVE THOUSAND DOLLARS ($25,000) guarantying Lessee's performance hereunder.

3. Taxes and Other Charges. Lessee will pay or cause to be paid at least ten days before the same become delinquent all taxes, assessments, rates, charges and other
outgoings of every description to which said premises or any part thereof or any improvements thereon, or the Lessor or Lessee in respect thereof, may at any time during said term be assessed or become liable, whether the same shall be assessed to or payable by the Lessor or Lessee.

4. **Observance of Laws.** Lessee will at all times during said term keep said premises in a reasonably clean, orderly and sanitary condition and observe and perform all laws, ordinances, rules and regulations now or hereafter made by any governmental authority for the time being applicable to said premises or any improvement thereon or use thereof, and will indemnify and hold Lessor harmless against all actions, suits, damages and claims by whomsoever brought or made by reason of the nonobservance or nonperformance of said laws, ordinances, rules and regulations or of this covenant.

5. **Inspection.** Lessee will permit Lessor and its agents at all reasonable time to enter said premises for the purpose of inspecting the same and assuring themselves that the said Lessee is complying with all the covenants as set forth herein.

6. **Use.** Lessee may open and operate quarries, carry on the concrete and tile business and related businesses on the leasesite and remove therefrom coral rock and other materials, it being represented that the provisions hereof constitute a license to do the same.

7. **Assignment and Subletting.** Lessee will not without the written consent of Lessor assign or mortgage this lease nor, without such consent or joinder of Lessor therein, sublet or part with possession of said premises or any part thereof provided that Lessor shall not withhold such consent unreasonably nor require the payment of any money therefor,
other than the reasonable cost of giving said consent.

8. Indemnity and Insurance. Lessee will indemnify and hold Lessor harmless against all claims and demands for loss or damage, including property damage, personal injury and wrongful death, arising out of or in connection with the use or occupancy by Lessee, or any accident or fire on the leasesite or any nuisance made or suffered thereon, or any failure by Lessee to keep the leasesite in a safe condition, and will reimburse Lessor for all its costs and expenses including reasonable attorneys' fees incurred in connection with the defense of any such claims, and will at its own expense at all times maintain with respect to the leasesite comprehensive general liability insurance with minimum limits of not less than $100,000 for injury to one person and not less than $300,000 for injury to more than one person in any one accident or occurrence and also insurance in a sum not less than $50,000 against claims for property damage in an insurance company or companies satisfactory to Lessor, and will from time to time upon receipt thereof deposit promptly with Lessor current certificates of such insurance.

9. Surrender. At the end of said term or other sooner termination of this lease, Lessee shall peacefully deliver up to Lessor possession of the land covered by this lease in good repair, order and condition.

10. Condemnation. If at any time during said term the leasesite or any part thereof shall be taken or condemned in fee simple or required for any public use by any authority or corporation having the power of eminent domain, then and in every case the estates and interests of the Lessee in the premises so taken shall at once cease and determine, and the Lessee shall not by reason of such taking be entitled to any
claim against either the Lessor or others for compensation or indemnity for the taking of any land, and all compensation payable or to be paid by reason thereof shall be payable to and be the sole property of the Lessor, and the Lessee shall have no interest in or claim to such compensation or any part thereof whatsoever; PROVIDED, HOWEVER, that whenever any portion of said leasesite shall be so taken or condemned, whether by reason of one or more takings, the rent thereafter payable for the remainder of the current rental period shall be reduced in proportion to the area of the land so taken bears to the total area of the leasesite hereby demised. In the event that the portion or portions of the leasesite so taken or condemned shall render the remaining land unsuitable for the Lessee’s purposes, such unsuitability to be determined by the mutual agreement of the Lessor and the Lessee, but if they are unable to reach an agreement the question of unsuitability shall be determined by arbitration, said arbitration to be governed by the provisions of Chapter 188, Revised Laws of Hawaii 1955 as the same now is or may from time to time be amended, then the Lessee may surrender this lease on the date that the Lessee loses possession of such portion of the demised premises by giving the Lessor written notice of cancellation within thirty (30) days after the Lessor gives the Lessee written notice that a portion of the demised premises will be condemned or required for a public purpose and thereby be relieved from further performance hereunder, but if the Lessee does not exercise said option, the rent thereafter payable for the remainder of said term shall be reduced as above provided; and PROVIDED, FURTHER, that the Lessee shall have the right to claim and recover from the condemning authority, but not from the Lessor, such compensation as may be
separately recoverable by the Lessee in its own right for any damages to its business on the demised premises, so long as such action or the payment of such compensation shall not affect or diminish the compensation payable to the Lessor as herein-before provided; and PROVIDED, FURTHER, that the taking or condemnation of any leasehold interest in the demised premises shall not excuse the Lessee from full performance of its covenants and obligations hereunder for the payment of money, but the Lessee, in such event, shall be entitled to claim and recover from the condemning authority its damages sustained by reason of such taking.

11. Defeasance. This lease is upon the condition that if Lessee shall fail to pay said rental and royalties or any part thereof within thirty (30) days after the same respectively become due, whether the same shall or shall not have been legally demanded, or shall become bankrupt, or shall fail faithfully to observe or perform any of the covenants herein contained and on the part of Lessee to be observed and performed, or shall abandon the said premises, or if any assignment be made of Lessee’s property for the benefit of creditors, or if this lease be taken on execution, then and in any such case, Lessor may at once re-enter said premises or any part thereof in the name of the whole, and at its option terminate this lease without service of notice or legal process and without prejudice to any other remedy or right of action for arrears of rent or royalties or for any preceding or other breach of contract.

12. Lessor’s Expenses. Lessee will pay to the Lessor upon demand all costs and expenses including reasonable attorneys’ fees incurred by Lessor in enforcing any of the covenants of Lessee herein contained or in remedying any breach
thereof, in recovering possession of the demised premises or any part thereof or in collecting any delinquent rent, royalties, taxes or other charges hereunder payable by Lessee.

13. **Schedule of Work.** Lessee will not commence extracting rock from the land described in Exhibit "B" until it has completed extracting seventy-five per cent (75%) of the total rock to be extracted from the land described in Exhibit "A".

14. **Non-Waiver of Breach.** Acceptance of rent or royalties by the Lessor or its agents shall not be deemed to be a waiver by it of any breach by Lessee of any covenant herein contained or of Lessor's right of re-entry for breach of condition. The waiver by Lessor of any breach shall not operate to extinguish the term, covenant or condition the breach thereof has been waived nor be deemed to be a waiver of its right to declare a forfeiture for any other breach thereof.

15. **Definitions.** The term "Lessor" in these presents shall include the Lessor hereinabove named, its successors and assigns; the term "Lessee" shall include the Lessee hereinabove named and its successors and permitted assigns. Whenever herein the singular number is used, the same shall include the plural, and the use of any gender shall include all genders unless in any case the context clearly requires otherwise.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

**ZIONS SECURITIES CORPORATION**

By [Signature]

By [Signature], LESSOR

**LAIE CONCRETE & AGGREGATE, INC.**

By [Signature]

By [Signature], LESSEE
STATE OF UTAH

On this 7th day of April, 1966, before me personally appeared


and


, who, being

by me duly sworn, did say that they are the President and


, respectively, of ZIONS SECURITIES

CORPORATION, a Utah corporation; that the seal affixed to the

foregoing instrument is the corporate seal of said corporation,

and that said instrument was signed and sealed in behalf of said

corporation by authority of its Board of Directors; and said


acknowledged said instrument to be the true act and deed of

said corporation.

Notary Public,


STATE OF HAWAII

CITY AND COUNTY OF HONOLULU

On this 14th day of April, 1966, before me personally appeared


and


, to me personally known, who, being

by me duly sworn, did say that they are the President and


, respectively, of LATE CONCRETE &

AGGREGATE, INC., a Hawaii corporation; that the seal affixed

to the foregoing instrument is the corporate seal of said

corporation, and that said instrument was signed and sealed in

behalf of said corporation by authority of its Board of Directors;

and said


acknowledged said instrument to be the true act and deed of said

corporation.

Notary Public, First Circuit,

State of Hawaii.

EXHIBIT "A"

ALL of that certain parcel of land (being portions of Royal Patent 7424, Land Commission Award 8559-B, Apanas 35 and 36 to William C. Lunalilo, and Royal Patent 925, Land Commission Award 4333, Apana 3 to Kahoakua) situate approximately 1000 feet West of Kamehameha Highway at Laie, Koolauloa, said City and County of Honolulu, and thus bounded and described:

Beginning at the Southwest corner of this parcel of land, on the Northeast side of existing roadway, the coordinates of which referred to Government Survey Triangulation Station "KAIPAPA" being 7,021.30 feet North and 599.97 feet West, and running by azimuths measured clockwise from true South:

1. 171° 08'  400.02 feet;
2. 224° 16'  245.00 feet along the Southeast side of roadway;
   thence along the Southerly side of roadway on a curve to the right with a radius of 140.00 feet, the chord azimuth and distance being:
3. 254° 28'  140.85 feet;
   thence along the Southerly side of roadway on a curve to the left with a radius of 300.00 feet, the chord azimuth and distance being:
4. 272° 33'  125.94 feet;
   thence along the Southerly side of roadway on a curve to the right with a radius of 300.00 feet, the chord azimuth and distance being:
5. 266° 13'  60.46 feet;
   thence along the Southerly side of roadway on a curve to the left with a radius of 250.00 feet, the chord azimuth and distance being:
6. 253° 16'  160.58 feet;
   thence along the Southerly side of roadway on a curve to the right with a radius of 120.00 feet, the chord azimuth and distance being:
7. 260° 16'  104.20 feet;
8. 286° 00'  79.52 feet along the Southwest side of roadway;
thence along the Southwest side of roadway on a curve to the right with a radius of 60.00 feet, the chord azimuth and distance being:

9. 321° 30' 69.68 feet;

10. 357° 00' 78.37 feet along the Westerly side of roadway;

thence along the Westerly side of roadway on a curve to the left with a radius of 300.00 feet, the chord azimuth and distance being:

11. 350° 50' 64.45 feet;

12. 355° 26' 112.09 feet;

thence along the Southwest side of roadway on a curve to the right with a radius of 300.00 feet, the chord azimuth and distance being:

13. 327° 29' 337.75 feet;

14. 330° 04' 66.00 feet;

thence along the Northwest side of roadway on a curve to the right with a radius of 50.00 feet, the chord azimuth and distance being:

15. 53° 21' 40.14 feet;

thence along the Northerly side of roadway on a curve to the left with a radius of 300.00 feet, the chord azimuth and distance being:

16. 87° 53' 15" 129.59 feet;

17. 80° 26' 30" 142.97 feet along the Northerly side of roadway;

thence along the Northerly side of roadway on a curve to the left with a radius of 550.00 feet, the chord azimuth and distance being:

18. 68° 36' 15" 225.65 feet;

thence along the Northerly side of roadway on a curve to the right with a radius of 250.00 feet, the chord azimuth and distance being:

19. 87° 23' 254.65 feet;
20. 118° 00' 315.00 feet along the Northeast side of roadway to the point of beginning and containing an area of 15.154 acres.

Together with Easement "A" forty-four (44.00) feet wide (being a portion of Royal Patent 7494, Land Commission Award 8559-B, Apanas 35 and 36 to William C. Lunalilo) for roadway purposes described as follows:

Beginning at the Northwest corner of this easement, being also the initial point of the above-described Parcel 1, the coordinates of which referred to Government Survey Triangulation Station "KAIPAPA" being 7,021.50 feet North and 699.97 feet West, and running by azimuths measured clockwise from true South:

1. 298° 00' 415.00 feet;
   thence on a curve to the left with a radius of 600.00 feet, the chord azimuth and distance being:

2. 291° 57' 126.48 feet;
3. 285° 54' 470.00 feet;
   thence on a curve to the right with a radius of 540.00 feet, the chord azimuth and distance being:

4. 292° 42' 127.88 feet;
5. 299° 30' 460.42 feet;
   thence on a curve to the left with a radius of 30.00 feet, the chord azimuth and distance being:

6. 244° 55' 48.90 feet to the Westerly side of Kamehameha Highway;
   thence along the Westerly side of Kamehameha Highway on a curve to the right with a radius of 548.69 feet, the chord azimuth and distance being:

7. 16° 14' 42" 113.02 feet;
   thence on a curve to the left with a radius of 30.00 feet, the chord azimuth and distance being:

8. 160° 49' 42" 39.62 feet;
9. 119° 30' 484.92 feet;
   thence on a curve to the left with a radius of 496.00 feet, the chord azimuth and distance being:

10. 112° 42' 117.46 feet;
11. 105° 54’ 470.00 feet; thence on a curve to the right with a radius of 644.00 feet, the chord azimuth and distance being:

12. 111° 57’ 135.75 feet;

13. 118° 00’ 415.00 feet;

14. 208° 00’ 44.00 feet to the point of beginning and containing an area of 1.874 acres.
EXHIBIT "B"

PARCEL 2

(CORAL HILL SITE)

All that certain land situated approximately 2700 feet west of Kamehameha Highway at Laie, Koolau, Oahu, Hawaii, being a portion of R. P. 7494, L. C. Aw. 8559-B, Ap. 35 and Ap. 36 to William C. Lunalilo, more fully described per survey of R. M. Towill Corporation, dated November 11, 1965 as follows:

Beginning at the northeast corner of this parcel of land, being also the northwest corner of the Sewer Treatment Plant, the coordinates of which referred to Government Survey Trig. Station "Kaiapau" being approximately 8,732 feet north and 2,130 feet west, and running by azimuths measured clockwise from true south:

1. 342° 45'  460.00 feet along the Sewer Treatment Plant site and along remainder of L. C. Aw. 8559-B, Ap. 35 and Ap. 36 to William C. Lunalilo; thence following along the bottom of coral hill, the direct azimuth and distance being:

2. 43° 59'  407.18 feet to the northerly side of Cane Road;

3. 69° 15'  600.00 feet along the northerly side of Cane Road; thence along the northeast corner of Cane Road, on a curve to the right with a radius of 30.00 feet, the chord azimuth and distance being:

4. 111° 52'  40.63 feet;

5. 154° 29'  188.00 feet along the northerly side of Cane Road and bottom of coral hill;

6. 119° 45'  305.00 feet along the northerly side of Cane Road and bottom of coral hill;

7. 104° 14'  165.00 feet along the northerly side of Cane Road and bottom of coral hill;

8. 106° 37'  360.00 feet along the northerly side of Cane Road and bottom of coral hill;

9. 164° 40'  210.00 feet along the bottom of coral hill, partly along the easterly side of Cane Road; thence along the bottom of coral hill, along remainder of L. C. Aw. 8559-B, Ap. 35 and Ap. 36 to William C. Lunalilo for the next ten (10) courses, the direct azimuths and distances between points at bottom of said hill being:

10. 261° 30'  320.00 feet;

11. 191° 10'  389.00 feet;

12. 259° 00'  520.00 feet;

13. 62° 35'  370.00 feet;

14. 338° 40'  400.00 feet;

15. 238° 42'  205.00 feet;

16. 251° 25'  282.00 feet;

17. 222° 04'  105.00 feet;
18. 265° 42' 230.00 feet;
19. 263° 02' 180.00 feet to the point of beginning and
    containing an area of 34.2 acres,

TOGETHER WITH Easement "A" forty-four (44.00) feet
    wide, containing an area of 1.674 acres, and Easement "B" forty-
    four (44.00) feet wide, containing an area of 2.65 acres, for
    roadway purposes from the above-described Parcel 2 to Kamehameha
    Highway; and

SUBJECT to Easement "C" forty-four (44.00) feet wide
    for roadway purposes over the above-described parcel of land
    as shown on plan and made a part hereof.
F.5 2014 LTCL, BYU-H, and HRI Lease
LEASE AGREEMENT

SECTION I GENERAL TERMS

1.1 Parties. This Lease is dated January 1, 2014 and is by and between BRIGHAM YOUNG UNIVERSITY-HAWAII, a nonprofit educational corporation incorporated under the laws of the State of Utah with its principal offices located at 55-220 Kulanui St., Laie, HI 96762, and Hawaii Reserves, Inc. ("HRI") a Hawaii corporation, as agent for Property Reserve, Inc., a Utah Corporation, with its principal place of business 55-510 Kamehameha Hwy, Laie, HI 96762 (collectively referred to herein as "LESSORS"), and Laie Trucking Company, LTD (the "LESSEE") also collectively referred to as the "PARTIES".

1.2 Leased Property. LESSORS, in consideration of any rents paid or to be paid pursuant to this Lease, and the conditions and covenants to be observed pursuant to this Lease, hereby grants and leases to LESSEE that certain real property identified in Exhibit "1", attached hereto and incorporated herein (the "Property" or the "Premises"). LESSEE accepts the Property "as is -- where is" and has the opportunity to inspect and conduct satisfactorily "due diligence." Right of access to the property will be provided as indicated in Exhibit "1".

1.3 Term of Lease. The Lease shall commence on January 1, 2014, and shall extend for a term of TEN (10) YEARS and shall expire on December 31, 2023. Notwithstanding the foregoing, either LESSORS or LESSEE has the right to terminate the lease for cause for any material breach of this Agreement upon notice as provided in paragraph 2.6. In addition, either the LESSORS or LESSEE may terminate this Agreement for any reason upon twelve months' written notice for any reason.

1.4 LESSORS' Right to Minerals. If any minerals, as distinguished from shell, sand and gravel, shall be found on the Property, the same shall belong to LESSORS, and LESSEE or any sub lessee as may be permitted herein, shall have no right to explore for, drill for, mine, extract, remove, or otherwise process or dispose of the same.

SECTION II. TERMS, COVENANTS AND CONDITIONS.

2.1 Monthly Gross Rent. The monthly lease rent owed by LESSEE to LESSORS, as described by the schedule below, shall become due and owing without any prior demand or notice in advance, on the first day of each month during the term of the Lease. Rent for any period that is less than one month during the term hereof shall be prorated based upon a thirty-day month, regardless of the actual number of days of the calendar month involved. Rent will be considered late if not paid by the tenth of each month and will thereafter be subject to the accrual
of interest at 1% per month until paid in full. Rent shall be based on 5 acres total: 2.3 acres to HRI and 2.7 acres to BYUH.

To LESSORS BYUH:

$150 dollars per acre increased annually at 3% per year as follows for 2.7 Acres:

<table>
<thead>
<tr>
<th>Period</th>
<th>Per Acre</th>
<th>Monthly Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/1/14 – 12/31/14</td>
<td>$150.00</td>
<td>$405.00</td>
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<tr>
<td>1/1/15 – 12/31/15</td>
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<td>1/1/22 – 12/31/22</td>
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<td>1/1/23 – 12/31/23</td>
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<td>$528.43</td>
</tr>
</tbody>
</table>

To LESSORS HRI:

$150 dollars per acre increased annually at 3% per year as follows for 2.3 Acres:

<table>
<thead>
<tr>
<th>Period</th>
<th>Per Acre</th>
<th>Monthly Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/1/14 – 12/31/14</td>
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<td>1/1/15 – 12/31/15</td>
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</table>
1/1/19 – 12/31/19 $173.89 $399.95
1/1/20 – 12/31/20 $179.11 $411.95
1/1/21 – 12/31/21 $184.48 $424.31
1/1/22 – 12/31/22 $190.02 $437.04
1/1/23 – 12/31/23 $195.72 $450.15

The rental amount shall be paid to the following addresses:

BYU Hawaii
55-220 Kulanui Street
Laie HI 96762

HRI
Hawaii Reserves Inc
Attn George Reid
55-510 Kamehameha Highway
Laie, Hawaii 96762

2.2 Taxes on Rent. LESSEE shall promptly pay to LESSORS as additional rental, together with each payment of rental or any other payment required hereunder that is subject to any State of Hawaii general excise tax on gross income, or all other similar taxes imposed on LESSORS for said rental or other payments in the nature of a gross receipts tax, sales tax, privilege tax or the like (excluding federal and state net income taxes) whether imposed by the United States of America, State of Hawaii, or the City and County of Honolulu, or any other duly authorized taxing body, an amount which, when added to such rental or other payment, shall yield to LESSORS, after deduction of all such tax payable by LESSORS with respect to such payments, a net amount equal to that which LESSORS would have realized from such payments had no such tax been imposed, said net amount presently being 4.712%.

2.3 Security Deposit. Upon its execution of this Lease, LESSEE shall deposit the sum of TWENTY FIVE HUNDRED and NO/100 DOLLARS ($2,500.00), to be held by LESSORS as a Security Deposit. Half shall be paid to each LESSOR.

If LESSEE fails to pay rent or other charges due hereunder, or otherwise defaults with respect to any provision of this Lease, then at LESSORS’ option, LESSORS may use, apply or retain all or
any portion of the Security Deposit for the payment of any rent or other charge in default or for the payment of any other sum to which LESSORS may become obligated by reason of LESSEE's default, or to compensate LESSORS for any loss or damage which LESSORS may suffer thereby.

If LESSORS so uses or applies all or any portion of the Security Deposit, LESSEE shall within ten (10) days after written demand therefore, deposit cash with LESSORS in an amount sufficient to restore the Security Deposit to the full amount then required of LESSEE. LESSEE's failure to deposit the sufficient amount shall constitute a breach of this Lease.

If LESSEE performs all of LESSEE's obligations hereunder, the Security Deposit, or so much thereof as has not heretofore been applied by LESSORS, shall be returned, without payment of interest or other increment for its use, to LESSEE (or, at LESSORS' option, to the last assignee, if any, of LESSEE's interest hereunder) at the expiration of the term of this Lease, after LESSEE has vacated the Premises and after final computation and settlement of all amounts due and owing hereunder by LESSEE.

2.4 Termination or Surrender. LESSEE shall surrender the Property promptly at the expiration of this Lease Agreement term; or in the event LESSORS or LESSEE terminate this agreement for any portion of the Property, the portion subject to the termination shall be promptly surrendered, according to the terms of this section.

In the event that this Lease Agreement is terminated, in whole or in part, when LESSEE is not in default or breach of any of the terms or conditions herein, LESSEE may have a period of thirty (30) days following termination to remove from the portion of the Property subject to the termination those items of personal property thereon belonging to LESSEE and which LESSEE is entitled to remove. If required, the land must be returned clear of all materials, equipment or contamination and usable for agricultural purposes.

In the event that this Lease Agreement is terminated, in whole or in part, when LESSEE is in default or breach of any of the Lease terms or conditions, LESSEE shall vacate the Property immediately, and may only enter thereon with written consent of LESSORS. LESSEE may remove those items of personal property which belong to LESSEE and which LESSEE is entitled to remove from the property, but only with the written permission referred to herein, and only under the supervision of LESSORS.

Regardless of the conditions under which this Lease Agreement is terminated, LESSEE shall not remove those fixtures, improvements or other items of real or personal property needed in or on the Property to ensure the safety of persons on the Property, or required to prevent waste, required for conservation or protection of the resources in or on the Property, which shall
become the property of LESSORS upon the termination of this Lease. Neither relinquishment nor termination shall relieve LESSEE of any accrued obligations.

2.5 Assigning and Subleasing of Property. LESSEE may not assign or sublet the Property in whole or in part to any other entity, without the prior written authorization of LESSORS. Any and all terms of this Lease Agreement that are applicable to LESSEE shall also be applicable to any sub lessee or assignee hereunder.

LESSORS at its sole discretion may refuse to have the Property or this Lease Agreement assigned or subleased to any or all party (ies), to which LESSORS hereby consents. An assignment does not constitute a new lease but is a continuation of the existing Lease with all terms hereof expressly included.

2.6 Notice of Breach. Upon breach by LESSEE of any provision of this Lease, or violation of any government statutes or regulations, including, but in no way limited to, the timely payment of all amounts due to LESSORS, including, but not limited to penalties and interest, LESSORS may cancel this Lease thirty (30) days after written notice is mailed to LESSEE by registered or certified mail, return receipt requested, unless LESSEE, before the expiration of the thirty (30) day notice period remedies the violation or breach, or rectifies the condition.

For the purposes of this Lease, LESSEE is in default of a Lease provision from the time that such written notice is mailed to LESSEE.

2.7 Lease Changes and Succession. Changes to or modifications of this Lease may be made only in writing and only with the written approval of LESSORS. This Lease and the provisions herein shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto.

2.8 No Waiver of Conditions. Waiver by LESSORS of any default of LESSEE or failure of LESSORS to timely enforce any provisions of this Lease shall not constitute a waiver of or constitute a bar to subsequent enforcement of the same or other provisions of this Lease. No provision in this Lease shall be construed to prevent LESSORS from exercising any legal or equitable remedy it may otherwise have.

2.9 Right to Audit. LESSORS have the right to audit LESSEE’s performance of the terms and conditions of this Lease Agreement. Nevertheless, it is the continuing duty of LESSEE to faithfully perform all of the terms, conditions, and obligations of this Lease. Any term, condition, provision, or obligation subject to change or interpretation shall be deemed self-executing, and shall in no way shift the burden from or relieve LESSEE of its continuing duties and obligations. The LESSEE shall immediately pay any delinquencies revealed by the audit, plus a 5% penalty.
SECTION III. RIGHTS AND RESPONSIBILITIES OF LESSEE.

3.1 Permitted Uses on the Property. The Property may be used for the following uses:

Transport and short term storage of aggregate, sand and cement for use in a concrete mixing area.

LESSEE must obtain the LESSORS’ consent before using the Property for any other purposes. The following uses and activities are strictly prohibited on the Property: storage of derelict vehicles or trucks and equipment; storage of hazardous substances or materials (including oil, paints and pesticides); unreasonable stockpiling of materials; use of structures for residential or habitation purposes; keeping of livestock (including fowl, cattle, horses); and consumption of alcoholic beverages.

Furthermore, LESSEE agrees that any and all uses and activities on the Property, or access thereto, shall NOT interfere with LESSORS’ activities on their property or campus.

3.2 Demolition of Improvements. At the request of LESSEE, certain existing structures shall remain on the Property during the term of the lease. LESSEE agrees that all such existing structures and concrete pads, as well as all improvements that are constructed on the Property during the term of this Lease Agreement shall be demolished and properly disposed off-site at the time of termination.

Where authorized improvements have been placed on the Property before the start of the term hereunder, by any person other than LESSEE, LESSOR will allow the owner of such improvements access to the Property to remove the improvements within ninety (90) days after the start of the term of this Agreement.

3.3 Reclamation. LESSEE shall be responsible for reclaiming the area of the Property under the existing structures described in the preceding paragraph, before the termination of this Lease Agreement. LESSEE shall as soon as practicable restore the Property to a state usable for farming or other suitable use established by the LESSORS.

LESSEE is required to obtain written approval from LESSORS at the termination of this Lease that LESSEE has: (a) completed all reclamation work in a timely and acceptable manner, and (b) provided proof to LESSORS that LESSEE has complied with and satisfied all government law, regulations, etc. LESSORS shall not unreasonably withhold such approval. If LESSEE fails to fulfill these requirements, LESSORS may arrange to have such reclamation work and compliance completed, all at LESSEE’s sole cost and expense.
LESSEE will post a bond in the amount $100,000.00 in favor of LESSORS during the term of the lease, or extended term, to be used as security to satisfy conditions of this provision and paragraph 3.13 herein.

3.4 Damage to Livestock, Crops, and Improvements. LESSEE will repair any damage caused by water wells, storage tanks, roadways, easements and other improvements on the Property, and LESSEE will pay the reasonable value of any livestock and crops on the Property that are killed, injured, destroyed, or damaged by LESSEE's agents and employees.

3.5 Protection of Premises. LESSEE agrees to provide and install adequate gates and all entrances into areas of the Property that are being used or occupied by LESSEE. Such gates will be kept locked except during the hours of operation and at all times when such areas are not occupied by LESSEE's personnel.

3.6 Not Commit or Suffer Waste. No waste shall be committed or suffered on the Property by LESSEE. The definition of "waste" as used in this Lease shall not include shell, sand and gravel used on the Property for road construction, including onsite road improvements, plant sites on the Property, and stockpile bases on the Property used in the operation of a concrete mixing business thereon. LESSEE covenants that it shall conduct all operations on the leased Premises in a good and proper workmanlike manner.

LESSORS shall be entitled to prohibit the commission of waste or other acts by LESSEE that are not being conducted in a good and proper workmanlike manner. LESSEE's failure to conduct its operations in a good and proper workmanlike manner shall be grounds for the cancellation of this Lease under the provisions of Section 2.6 ("Notice of Breach") of this Lease and for the recovery of damages by LESSORS.

3.7 Payment of Taxes. LESSEE shall pay that portion of any and all property taxes that are based on the use of the Property by LESSEE on the Property. LESSEE shall pay all increases in property tax assessments that are the result of any change in zoning on the Property that might be required to allow LESSEE's use of the Property. In the event LESSEE fails to pay such taxes, LESSORS may, at its option, pay any such taxes and assessments and then collect those payments plus attorneys' fees, penalties and interest from LESSORS. Failure to pay property taxes by the due date is cause for termination of the lease.

3.8 Indemnification of LESSORS. LESSEE will indemnify and hold LESSORS harmless from and against all claims and demands for loss or damage, including but not limited to property damage, adverse effects on neighboring property owners, personal injury, bodily injury and wrongful death, arising out of or in connection with the use or occupancy of the demised Premises and appurtenances by LESSEE or any other person under LESSEE, or any accident or
fire on said Premises or any nuisance made or suffered thereon, or any failure by LESSEE to keep said Premises in a safe condition, and will reimburse LESSORS on demand, as LESSORS may incur the same or at any time thereafter, for all LESSORS' costs and expenses, including reasonable attorneys' fees incurred in connection with the defense of any such claims, and will hold all crops, goods, materials, furniture, fixtures, equipment, machinery and other property whatsoever on said Premises at the sole risk of LESSEE and save LESSORS harmless from any loss or damage thereto by any cause whatsoever due to LESSEE's operation that arises during the term of the Lease.

3.9 **Insurance.** LESSEE shall not commence operations under this Lease until it has obtained, as a minimum, the insurance required hereunder, and until evidence of such insurance has been submitted to and approved by LESSORS. The submittal of such evidence to LESSORS shall not relieve or decrease the liability of LESSEE hereunder.

(a) Worker's Compensation and Employer's Liability Insurance as required by Hawaii law.

(b) Commercial General Liability Insurance – in a form approved by LESSORS with at least the following coverage:

(i) Limits not less than -

<table>
<thead>
<tr>
<th>(1) General Aggregate</th>
<th>$2,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Products-Comp/OSP Aggregate</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>(3) Personal and Advertising Injury</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>(4) Each Occurrence</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>(5) Fire Damage (any one fire)</td>
<td>$50,000</td>
</tr>
<tr>
<td>(6) Medical Expenses (any one person)</td>
<td>$5,000</td>
</tr>
</tbody>
</table>

(ii) Naming LESSORS as an Additional Insured and containing the following statement - "This Endorsement also constitutes primary coverage in the event of any occurrence, claim or suit."

(c) Vehicle or Truck Liability Insurance with limits of not less than $1,000,000 combined single limit per accident, coverage applying to any vehicle or truck.

(d) A Certificate of Insurance should be presented on ACORD 25-S (3/88) Form, or current equivalent, and be issued by an insurance company rated "A" or better. The cancellation clause of the Certificate shall be amended to provide 30 days written notice to LESSORS prior to cancellation of insurance.

3.10 **Observance of Laws.** LESSEE will at all times during the term of this Lease Agreement keep the leased Premises in good order and in a strictly sanitary condition and observe and
comply with all laws, ordinances, rules and regulations now or hereafter made by any governmental authority applicable to said Premises or any improvement thereon or use thereof, including but not limited to, all laws, ordinances, rules and regulations concerning air, land, water, noise, dust and other forms of pollution, and the duty to remove all cars and other property which may be abandoned on the demised Premises, and LESSEE will indemnify LESSORS against all actions, suits, damages and claims by whomsoever brought or made by reason of the nonobservance or nonperformance of said laws, ordinances, rules and regulations or of this covenant.

3.11 Notification of Violations. LESSEE shall promptly notify LESSORS of any claim, allegation or order made by or any complaint filed with any governmental entity that LESSEE has violated or threatens to violate any statute, regulation, order or decree or other applicable law governing LESSEE's use and occupation of the Premises. LESSEE shall also promptly notify LESSORS of any suits, claims, administrative hearings or other legal or administrative proceedings filed against it with respect to its use or occupancy of the Premises. LESSEE shall also promptly notify LESSORS of any action by any governmental entity that proposes or threatens to change or has changed the terms and conditions under which LESSEE is authorized to carry out its activities on the Premises.

3.12 Bonds. LESSEE shall maintain such bond or bonds (or cash equivalent) in such amount or amounts and for such purposes as may be required by applicable statute or regulation.

3.13 Hazardous Substances. The term "Hazardous Substance" shall mean any flammable explosives, radioactive materials, asbestos, organic compounds known as polychlorinated biphenyls, chemicals known to cause cancer or reproductive toxicity, petroleum, including crude oil or any fraction thereof, pollutants, contaminants, hazardous wastes, toxic substances or related materials, including without limitation, any substances defined as or included now or in the future in the definition of "hazardous substance," "hazardous waste," "hazardous material," or "toxic substance" under the Solid Waste Disposal Act. 42 U.S.C. § 6901 et seq.; Chapters 342B through 342P. Hawaii Revised Statutes; the Comprehensive Environmental Response, Compensation and Liability Act. 42 U.S.C. § 9601 et seq.; the Hazardous Materials Transportation Act. 49 U.S.C. app. section 1801 et seq.; the Clean Water Act. 33 U.S.C. section 1251 et seq.; the Clean Air Act. 42 U.S.C. section 7401 et seq.; the Toxic Substances Control Act. 15 U.S.C. sections 2601 through 2655; the Safe Drinking Water Act. 42 U.S.C. sections 300f through 300j; and any similar federal, state and local laws, statutes, ordinances, codes, rules, regulations, orders or decrees relating to environmental conditions, industrial hygiene or Hazardous Substances on, under or about the Premises, now in effect or hereafter adopted, published and/or promulgated.
LESSEE shall not allow the presence, use, generation, manufacture, treatment, handling, refining, production, processing, storage, discharge, release, or disposal of any Hazardous Substance on, within or under the Premises.

LESSEE shall comply with all governmental requirements applicable to its use or occupation of the Premises, including without limitation, all governmental requirements relating to human health, the environment, and the prevention, investigation, and remediation of soil or groundwater contamination, waste disposal, air or wastewater emissions, occupational safety and health, and the handling of Hazardous Substances ("Hazardous Substance Laws"). If any of said requirements shall be inconsistent with each other, LESSEE shall comply with the most stringent requirement. LESSEE shall document all actions taken to achieve such compliance and shall make such documentation available for inspection by LESSORS. LESSEE shall provide LESSORS with a copy of any document submitted to any government agency pursuant to any Hazardous Substance Laws.

Prior to the commencement of any environmental remediation work to be performed on the Premises, LESSEE shall communicate with LESSORS concerning the work to be performed, which communication shall include, but not be limited to, LESSEE providing LESSORS with (i) a written description of the work to be performed, and (ii) a narrative summary of the work actually performed.

If LESSEE or LESSORS receives a notice, claim, demand, or complaint ("Claim") against LESSEE or LESSORS from any government agency with jurisdiction for the payment of damages, costs, or expenses for the presence of or the escape, seepage, leakage, spillage, discharge, emission or release from the Premises or Property into or onto the Premises, adjacent land, or any watercourse, body of water, or wetland, of any Hazardous Substance which violates applicable law and which was caused by LESSEE's use or occupancy of the Premises or Property, or by LESSEE's remedial action pursuant to any of the Hazardous Substance Laws, LESSEE will proceed immediately and diligently after receipt of notice of the Claim to remediate the Premises in full compliance with all applicable laws and regulations, within such time period as the appropriate governmental agency having jurisdiction thereof shall require. If LESSEE, in good faith, believes that the Claim has not in fact originated from LESSEE's use and occupancy of the Premises and LESSEE violated no applicable law, LESSEE shall have the right to challenge such claim in an appropriate forum. In the event action is taken against LESSORS regarding a Claim, or commenced by LESSEE to challenge a Claim, LESSORS shall, at no cost or expense to LESSORS, cooperate with LESSEE in the defense thereof.

LESSEE shall indemnify, defend, and hold LESSORS harmless from all costs, expenses, attorneys' fees losses, or damages arising out of or connected with any Claim.
Notwithstanding anything to the contrary, LESSEE's liability in connection with Hazardous Substances pursuant to this Lease shall be limited only to those that arise from LESSEE's use and occupation of the Premises, and from improvements, devices, equipment, machinery constructed, installed and/or operated by LESSEE on the Premises.

The obligations of LESSEE under this section shall survive the termination of this Lease and shall continue in full force and effect.

3.14 **Underground Storage Tanks.** LESSEE shall not install any underground tanks for the storage of Hazardous Substances on the Premises unless underground installation is required by law. Prior to installation of any underground storage tank, LESSEE shall submit to LESSORS the plans and specifications for the storage tank, its installation, and a monitoring program to determine the existence of leaks from said tank(s).

Upon approval by LESSORS, LESSEE shall obtain any necessary governmental approvals for installation of such tanks, and if the plans for the tank, its installation or monitoring are modified by such governmental agencies, resubmit same to LESSORS for its approval. All underground storage tanks shall comply with all applicable laws, including but not limited to all Hazardous Substance Laws, and all regulations promulgated thereunder and all, applicable state and local laws, including but not limited to Hawaii Revised Statutes ("HRS") Chapter 3421 ("Underground Storage Tanks"), as amended, and regulations promulgated thereunder. Upon termination of this Lease, all underground storage tanks shall be removed from the Premises by LESSEE, in accordance with all applicable laws.

3.15 **Inadvertent Discovery of Burial or Archeological Sites.** If during the course of use of and operations on the Premises, or during LESSEE's occupation of the Premises pursuant to this Lease, LESSEE inadvertently discovers any human skeletal remains or a site of archeological interest, LESSEE shall cease any and all activity in the immediate area that could damage the remains or the potential historic site. LESSEE shall thereafter comply with the requirements of HRS Section 6E-43.6 ("Inadvertent discovery of burial sites"), as amended, regarding, among other provisions, the reporting of such a discovery to the appropriate governmental authorities. If LESSEE fails to comply with said statutory requirements, LESSEE shall be subject to the penalties described in HRS Chapter 6E ("Historic Preservation"), and any other applicable penalties, fines and punishment.

3.16 **Liens.** Upon entering into the occupation and use of the Premises, LESSEE shall forthwith post and keep posted in a conspicuous place thereon written notice that the same are held by LESSEE, and that LESSEE and not LESSORS is liable for all labor performed and supplies and materials furnished to or used by it in or upon the Premises, and that LESSEE and
not LESSORS shall be responsible for all debts and expenses incurred by LESSEE in LESSEE’s operations on the Premises.

LESSEE shall not allow any claim or lien for labor performed or for supplies and materials furnished to or used by it to be effectually made or asserted against the Premises or against LESSORS. LESSEE shall indemnify LESSORS against all claims and demands of any kind or nature that may be made against the Premises or against LESSORS (including but not limited to reasonable attorneys’ fees, expenses and costs) for or on account of any debt or expense contracted or incurred by LESSEE. LESSEE shall notify LESSORS in writing of any planned debts in excess of $50,000.00.

3.17 Maintenance of Roads and Drainage Ditches. LESSEE shall properly maintain all roads and drainage ditches on the Property or on any of LESSORS’ property providing access to the Property, whether or not located on the Property, constructed or used in any way by LESSEE, so that such roads create no safety hazard or pollution by their use or existence.

3.18 Special Duties. LESSEE shall be subject to, and does hereby acknowledge and agree to the following duties:

(a) The duty to take all reasonable steps as shall be necessary to avoid flooding the lower lands of LESSORS lying outside of the demised Premises or discharging storm waters into the sea, except in locations and in accordance with applicable laws and regulations, and plans having the prior written approval of LESSORS.

(b) The duty to maintain in good and usable condition all roads now or hereafter existing on the demised land and to close the same for not less than twenty-four (24) hours at least once every five (5) years.

SECTION IV. SPECIAL TERMS AND CONDITIONS.

4.1 Sale of Leased Property. In the event that LESSORS sells, transfers or otherwise conveys the Property to an individual or entity not a party to this Lease during the term of this Lease, LESSORS shall obtain written consent of the transferee to be subject to and bound by the terms of this Lease equally and to the same extent as LESSORS.

4.2 Exceptions and Reservations. This Lease Agreement shall be affected by the exceptions and reservations described below:

(a) The Premises shall be subject to all encumbrances affecting any part of the demised Premises.
(b) Hawaiian Electric Company, Inc. and Hawaiian Telephone Company shall retain its rights, if any, to all pole and wire lines and appurtenances and rights thereto now existing over and across any part of the Premises.

(c) The United States of America shall retain its rights, if any, to all pole and wire lines, underground cables, pipelines and appurtenances and rights thereto, and to other easements and licenses that now exist over and across any part of the demised Premises.

(d) LESSORS reserves the right for itself, its licensees and other lessees from time to time to withdraw from the Premises water in such quantity and from such sources as LESSORS in its sole discretion shall determine is necessary for the benefit of LESSORS, its lessees, licensees or permittees; provided, however, that such right shall be exercised in such manner as shall be consistent with LESSEE's requirements of water for use in the demised Premises.

(e) LESSORS reserves the right to use and enjoy all easement areas now or hereafter existing within the leased Premises; provided, however, that such use and enjoyment shall not interfere unnecessarily with LESSEE's operations on said Premises.

(f) LESSORS reserves the right to enter upon the demised Premises at any time and from time to time to widen or deepen storm drains, ditches and channels and to create reservoirs, dams and lakes, provided such right shall be exercised in a manner as shall not interfere unnecessarily with LESSEE's operations; and provided, further, that LESSEE shall be compensated for any damage to LESSEE's operations proximately caused by the exercise of such right by LESSORS.

4.3 Attorneys' Fees. In the event LESSORS shall prevail in any action or suit filed against LESSEE for the enforcement of any provision of this Lease or concerning this Lease in any manner. LESSEE shall pay to LESSORS reasonable attorneys' fees on account thereof.

4.4 Arbitration of Disputes. Any controversy or claim arising out of or relating to this Lease or the breach thereof (except for eviction for failure to pay rent), by mutual consent of the parties hereto, shall be settled by binding arbitration in accordance with the Commercial Arbitration Rules of the State of Hawaii, and judgment and award rendered by the Arbitrator(s) may be entered by any Court having jurisdiction thereof.

4.5 Representations. LESSORS makes no representation or warranty either express or implied regarding the suitability of the Premises for LESSEE's purposes or regarding any condition that may exist on or under the Premises. LESSEE has the opportunity to fully inspect and explore the Premises, and LESSEE shall take all action it deems necessary to determine the suitability of the Premises for its purposes. The Premises are leased to LESSEE AS IS, and LESSORS shall not be liable to LESSEE for any condition existing on or under the Premises.
4.6 **Notice.** Any notice or demand given by either party to this Lease shall be in writing and shall be personally delivered or sent by United States mail, certified or registered, postage prepaid, to the address of the parties specified below:

To LESSORS:

Brigham Young University-Hawaii  
55-220 Kulanui Street  
Laie, Hawaii 96792

HRI  
Hawaii Reserves, Inc  
55-510 Kamehameha Hwy  
Laie, HI 96762

To LESSEE:

Laie Trucking Company, LTD.  
56-281 Maunu'unu'u  
Kahuku, Hawaii 96731

LESSORS or LESSEE or either of them may establish a new address for purposes of notice to itself by giving notice of such new address in accordance with this section.

4.7 **Miscellaneous Provisions.** The captions of this Lease are for convenience of reference only, are not part of the Lease, and shall not define or limit any of the terms or provisions hereof. This Lease Agreement constitutes the entire agreement by and between LESSORS and LESSEE with respect to the subject matter hereof and supersedes all prior agreements and understandings, written or oral, with respect to the subject matter. This Lease Agreement shall be governed by the laws of the State of Hawaii in all respects, including matters of validity, construction, performance, and enforcement.

Dated: July 8, 2014

**BRIGHAM YOUNG UNIVERSITY HAWAII (LESSOR)**

By:  

Print name:  

Title:
Hawaii Reserves, Inc., Agent for Property Reserve, Inc. (LESSOR)

By: [Signature]

Print name: R. Eric Beaver

Title: President & Chairman

Laie Trucking Company, LTD (LESSEE)

By: [Signature]

Print name: Michael [Redacted]

Title: [Redacted]
F.6  2016 LTCL, BYU-H, HRI Lease Amendment
Amendment No. 1 to the Land Lease between BYU-H, HRI and Laie Trucking

This is Amendment Number 1 (Amendment No. 1) to the January 1, 2014 Lease Agreement between BRIGHAM YOUNG UNIVERSITY – HAWAII (BYU-H) a nonprofit educational corporation incorporated under the laws of the State of Utah with its principal offices located at 55-220 Kulanui Street, Laie HI 96762; Hawaii Reserves, Inc. (HRI), a Hawaii corporation, with its principal place of business 55-510 Kamehameha Hwy., Laie, HI 96762 and Laie Trucking Company, LTD. (Laie Trucking), a Hawaii corporation with its principal place of business located at 56-281-Maunu‘umulu, Kahuku, HI 96731. (Lease Agreement). Subject to the following conditions all of which are mutually agreed to by the parties to the Lease Agreement, BYU-H (LESSOR) hereby adds approximately five (5) additional acres to the adjoining Lease Agreement site (Proposed Expansion Site) which area is more particularly depicted in attached EXHIBIT 1 and incorporated by reference:

- BYU-H will use approximately 2 to 3 acres of the Proposed Expansion Site for short term storage of materials from BYU-H excavation and demolition projects.
- In addition to short term storage, BYU-H will use the site for sorting, crushing and mixing materials. Laie Trucking represents and warrants that it has obtained all required permits necessary for the uses set forth in the Lease Agreement, including all County and State authorizations, including State Department of Health Temporary Covered Source Permit 050801-CT (CSP) for short term storage, sorting, mixing and crushing of such materials. Any crushing, sorting or mixing of materials performed by Laie Trucking for the benefit of BYU-H shall be subject to the written authorization of BYU-H or its contractors and to pre-authorized contract prices.
- BYU-H shall install and pay for 2 entry gates as depicted on Exhibit 1.
- Access to the Proposed Expansion Site shall be controlled by BYU-H.
- In consideration of the use of the expansion of use of the CSP, Laie Trucking shall be allowed to use the remainder of the Proposed Expansion Site in accordance with the terms of the original Lease Agreement.
- Any work required to grub or provide access to areas being used by BYU-H shall be performed by contractors or Laie Trucking and paid for by BYU-H pursuant to separate agreements.
- Any work required to grub the remainder of the site for use by Laie Trucking shall be the sole responsibility of Laie Trucking.
- End of lease costs for reclamation of the Proposed Expansion Site used by BYU-H shall be the responsibility of BYU-H unless such site is subsequently released to Laie Trucking for its purposes. Any such release to Laie Trucking shall be pursuant to further written amendment between BYU-H and Laie Trucking.
- End of lease costs for reclamation the area used by Laie Trucking shall be the responsibility of Laie Trucking.
- BYU-H represents and warrants that materials from the demolition of BYU-H structures and stored at the Proposed Expansion Site shall not contain asbestos.
- It is acknowledged and agreed that additional materials will be stored and removed from the Proposed Expansion Site on an intermittent basis as construction needs dictate from time to time.

BYU-H, HRI and Laie Trucking LEASE AMENDMENT NO. 1
January 1, 2016
Page 1 of 3
time and that BYU-H disclaims any ongoing obligation to supply a regular volume of materials to Laie Trucking.

- At such time as BYU-H deems it does not have need for stored materials on the Proposed Expansion Site, all remaining materials will be made available to Laie Trucking without cost. If Laie Trucking takes possession of the stored materials, Laie Trucking will be responsible for end of lease reclamation costs associated with those materials. If Laie trucking does not take possession of such materials, BYU-H shall continue to be responsible for maintaining the Proposed Expansion Site or proceed with the reclamation process.
- Laie Trucking shall be responsible for administration and renewing of the CSP and all associated permits, presently to expire on October 14, 2020 and shall provide BYU-H a copy of all current and renewed permits.
- Laie Trucking shall be responsible for installing and maintaining erosion controls using Best Management Practices (BMP’s) as may be required by permit and industry standards.

The terms of this Amendment No. 1 include the following:

- The expiration date of the Lease Agreement is December 31, 2021.
- Either BYU-H or Laie Trucking shall have the right to terminate the Lease Agreement for any reason upon twelve months’ written notice for any reason.
- Should the Lease Agreement is extended beyond the 5 year term, Laie Trucking agrees to pay the annual rental for the land it is using at the same rate included in the Lease Agreement.

The allocation of lease payments stipulated in the original Lease to HRI and BYU-H shall be adjusted from HRI 2.7 acres and BYU-H 2.3 acres to HRI 2.30 acres and BYU-H 2.79 acres beginning 1/1/2016 at the lease rate of $159.14 per acre and subject to increases per section 2.1 of the lease.

All other terms and conditions of the Lease Agreement shall remain in full force and effect and I apply to this Amendment No. 1.

Dated: 15 February 2016

BRIGHAM YOUNG UNIVERSITY-HAWAII (LESSOR)

By:

Print Name: Norman S. Black

Title: VP of Administration
Hawaii Reserves, Inc. Agent for Property Reserves, Inc. (LESSOR)

By: 

Print Name: R. ERIC BEAVER

Title: PRESIDENT

Laie Trucking Company, LTD (LESSEE)

By: 

Print Name: MICHAEL TONKAIN

Title: PRESIDENT

BYU-H, HRI and Laie Trucking LEASE AMENDMENT NO. 1
January 1, 2016
Page 3 of 3
Proposed Lease
Laie Trucking

Campus Planning and Construction
55-220 Kulanui Street, Building 5
Laie, Hawaii 96762-1293

Provision Expansion
(5.0 ACRES)

HRI (2.30 ACRES)

BYU-H (2.70 ACRES)

(E) ACCESS ROAD

DATE: 01/13/16
ISSUED FOR: DESIGN REVIEW
Sheet Number: A-1.0
F.7  DPP Approvals for LPG Tank
April 16, 2015

Mr. Robert Mills, Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, ASB Tower, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Mills:

SUBJECT: Minor Modification - New Apartments and Infrastructure Improvements
Plan Review Use Permit No. 94/PRU-4
Brigham Young University – Hawaii Campus (BYU-H)
55-220 Kulanui Street – Laie
Tax Map Keys: 5-5-6: 5, 32, and 35

Your request of September 17, 2014, with supplemental materials received on January 7, 2015, to allow a new 22-unit apartment building, parking lots, service road extensions, and a pavilion and open courtyard; the upgrade and relocation of an electrical switch gear building, chiller plant, and gas tanks; and the reconstruction of an existing parking area and shared service area and other improvements at the above campus, is APPROVED as a MINOR MODIFICATION of Plan Review Use (PRU) Permit No. 94/PRU-4, subject to the following conditions:

1. Development shall be in general conformance with the project described herein, and as shown on plans labeled Exhibits C-1 to C-15 (time-stamped September 17, 2014 and January 7, 2015), which are now part of the file for the subject permit, maintained by the Department of Planning and Permitting (DPP). Any modification of the approved plans shall be subject to the separate review of and approval by the Director of the DPP.

2. Prior to issuance of building permits for the parking lots, the Applicant shall submit complete plans, which include the landscaping required by Section 21-4.70 of the Land Use Ordinance (LUO).

3. If, during construction, any previously unidentified archaeological sites or remains (such as artifacts, shell, bone, or charcoal deposits, human burials, rock or coral alignments, paving, or walls) are encountered, the Applicant shall stop work and contact the State Historic Preservation Division (SHPD) immediately. Work in
the immediate area shall be stopped until the SHPD is able to assess the impact and make further recommendations for mitigative action.

4. Except as modified herein, all conditions of PRU Permit No. 94/PRU-4, as modified, shall remain in force.

5. The Director may modify the conditions of this approval by imposing additional conditions, modifying existing conditions, or deleting conditions deemed satisfied upon a finding that circumstances related to the approved project have significantly changed so as to warrant a modification to the conditions of approval. In the event of the noncompliance with any of the conditions set forth herein, the Director may terminate all uses approved under this permit or halt their operation until all conditions are met or may declare this permit null and void or seek civil enforcement.

PROPOSAL

The Applicant, Brigham Young University Hawaii, proposes to construct a new staff housing building and various infrastructure improvements to accommodate the needs of the existing campus population, which consist of the following:

1. **University Housing:** A new 22-unit multi-family dwelling unit (apartment building) will be constructed in the northwest area of campus, adjacent to the School of Education Building near Naniloa Loop. See Exhibit C-2. The two and three-story building will have a total floor area of 21,000 square feet, and have a staggered roofline with its highest point at about 56 feet. See Exhibits C-3 to C-6. The apartments will house existing staff and volunteers working on campus. A new 26-space parking lot (including two handicap spaces) will also be constructed east of the new apartments, which will be connected by a new road extending to Naniloa Loop. See Exhibit C-2. This roadway was previously shown on the PRU Master Plan (Exhibit C-1), but was never constructed.

2. **West Field Parking Lot:** A new 68-space parking lot will be constructed in the existing West Field, located just south of the new apartment building. See Exhibit C-2. The new paved parking lot will be accessible by two driveways from the existing connecting road between the Main Campus Entry Loop and the existing Temple View Apartments. A new driveway will also be added, opposite of the West Field Parking Lot driveway, that will connect to the existing parking lot behind the existing Housing Office Building. See Exhibit C-2.

3. **Hawaii Gas Company Propane Tank Relocation:** The existing Hawaii Gas Company propane storage tanks will be relocated to a vacant site immediately mauka (west) of the existing wastewater pump station. See Exhibit C-2. The relocated tank will be accessible via the proposed West Service Road Extension (see below) and the existing service road that connects the campus to the Laie Wastewater Treatment Plant.
4. **West Road Loop Extension and New 101-space Parking Lot:** The existing unpaved service road will be extended westward from Hale 9, through campus in back of the General Classroom Building, ending near the Married Student Housing, Building W. See Exhibit C-2. This paved extension will create a secondary "loop road." A new 101-space parking lot will also be constructed in the service area, just behind (west) of the Helber Grant Building.

5. **Electrical Switchgear Upgrade and Relocation:** The existing 623-square-foot switchgear building located behind (south) of the General Classroom Building, will be replaced with a new 4,000-square-foot structure which will be constructed about 75 feet west of the existing building, near the new service road extension described above (No. 4). See Exhibits C-2, C-7 to C-10.

6. **Hale Courtyard and Pavilion:** The existing tennis courts and portions of the parking in the unmarried student housing area (Hales 3 to 6), will be replaced by a new single student gathering area. See Exhibit C-1 and C-2. The new Hale Courtyard will include the construction of a 4,000-square-foot pavilion with a 35-foot high roof peak, open area seating, and two sport courts. See Exhibits C-11 and C-12.

7. **Chiller Plant Relocation:** The existing chilled water facilities located near the McKay Gymnasium will be relocated into the existing handball court building with ancillary facilities to be constructed in the vacant area adjacent to the building. See Exhibits C-2 and C-13. All three handball courts in the existing building will be eliminated to accommodate a chiller. A 284-square-foot room will be added to the southwestern wall of the handball court building for the electrical equipment. See Exhibits C-14 and C-15. Three 25-foot high, free standing cooling towers will also be installed northeast of the existing handball court building, which will occupy an 2,100 square foot area (34 x 62 feet).

8. **East Road Loop Extension:** The existing (unpaved) service loop road located just south of McKay Gymnasium on the east end of campus, will be paved to connect with Mikohelelel Way, which connects to the West Road Extension (previously described in No. 4, above). This extension, when completed will complete the second "loop" through the campus. See Exhibit C-2.

9. **Shared Service Area and Parking Reorientation:** The existing parking lot at the southeast end of the campus, adjacent to the Polynesian Cultural Center (PCC), will be reoriented in an east to west direction and aligned with the existing east service road extension (described above in No. 8). The new 237-space parking lot will continue to provide 146-spaces that are shared with the PCC per an Off-Site Parking Agreement File No. 89/CUP1-27. See Exhibit C-2. According to the Applicant, the reorientation of the shared parking area will allow a better pedestrian flow to the PCC as well as provide additional parking spaces for the BYU-H campus. The reorientation of the parking lot will provide 91 additional spaces for use by BYU-H.
Background: On May 7, 1997, the City Council granted a PRU permit (Resolution No. 96-321, CD1) for the BYU-H campus at this location in Laie. Originally established in mid-1950s as the Church College of Hawaii by the Church of Jesus Christ of Latter-day Saints, the 211-acre campus included 33 existing buildings within the R-5 Residential and AG-1 Restricted Agricultural Districts, which was considered a nonconforming use. The PRU recognized the 977,021 square feet of existing floor area on the campus and allowed construction of seven new buildings, four additions, and the replacement of four structures, totaling 174,200 square feet. The permit included a Five-Year Master Plan. See Exhibit C-1. At that time, enrollment was 1,872 full-time students with a faculty and staff of 413 persons. The campus was considered a non-commuter university, where 84 percent of students lived on-campus and few commuted from outside of Laie. Since that time, there have been a number of subsequent minor modifications of the PRU Permit for new facilities, including a new chapel, multi-purpose buildings, student housing, housing offices, pavilions, and nursery relocation.

On September 20, 2013, the DPP approved the latest PRU modification (No. 2013/MOD-1) to remodel/renovate three existing two-story student dormitory buildings (Hale 3 to 5) and add a new third floor to each of the buildings. Total floor area on campus increased by 74,336 square feet. That modification also allowed for one existing two-story dormitory (Hale 6) to be demolished and replaced with a new building that increased the building area (lot coverage) by 3,852 square feet. The PRU area reduced in size with the removal of a 1.2-acre parcel adjacent to the northwestern boundary of the BYU-H campus (Tax Map Key 5-5-6: 34).

ANALYSIS

1. **Compliance with LUO Standards:** Both the new apartment building and the Hale Courtyard and Pavilion will exceed the height limit of the R-5 Residential District. However, the apartment building will observe the non-residential 30-foot non-residential front yard setback and is designed to blend with the existing campus buildings. The proposed pavilion is more than 1,200 feet from the campus boundary and will be lower in height than other existing structures on campus, including the Cannon Activity Center (68 feet high), McKay Auditorium (62 feet high), and the Chapel (72 feet high). The new construction will result in a net increase of 11,705 square feet of total building area (lot coverage) on the campus. The increase in total campus building area is minimal, from 9.07% to 9.20 percent (1.0 percent change), which remains well below the 50 percent limit of the R-5 Residential District.

   *Note*: The figure of 8.97 percent cited in minor modification No. 2013/MOD-1, approved on September 20, 2013 (described above), was for the existing lot coverage at that time (i.e., pre-approval).

2. **Landscaping, Screening, and Buffering:** The current landscaping will be maintained or improved in accordance with regulatory standards and will be consistent with other improved landscaping in surrounding areas of the BYU-H campus. Additionally, the finish surfaces and overall design will be similar to that
found elsewhere on campus. Parking lot landscaping details have not been finalized. However, final parking lot construction plans will be required to provide LUO compliant shade trees pursuant to Section 4.70(b), as a condition of this approval.

3. Wastewater and Water: A significant increase in wastewater demand is not anticipated. The wastewater demand created by the new apartment building is estimated at about 4,378 gallons per day (0.004 mgd), which (25 gallons/capita per day (gpcd) to 80 gpcd for 2.8 capita per apartment unit (an increase of 199 gallons / unit per day), which is less than a one percent increase in the present 0.48 mgd average daily Laie Water Reclamation Facility (LWRF) flow. The LWRF has a design average flow capacity of 0.90 mgd and can readily accommodate this increase in wastewater flow.

The water system, a private potable water purveyor, is capable of handling the additional capacity. The present capacity of the Laie Water Company well pumps is 1.26 mgd. The present demand is approximately 1.0 mgd, which is approximately 79 percent of the total pump capacity. Considering the reduction in water usage from areas of campus that are currently landscaped, but will be paved with impervious pavement, the cumulative additional water demand of the proposed modifications 0.002 mgd, which is a 0.2 percent (0.2%) increase in the existing 1.0 mgd average daily demand. The Laie Water System can readily accommodate this minimal increase in demand.

4. Traffic and On-Site Vehicular Circulation: The proposed roadway extension near the Education Building was previously approved with the original PRU site plan (Exhibit C-1), and therefore, does not require further evaluation. The extension of the West and East Loop Road will greatly improve the on-site vehicular circulation pattern within the campus. The overall improvement in connectivity will improve campus safety by adding a secondary internal route through the campus. Furthermore, the additional on-campus housing should reduce the number of trips made to and from campus, which will likely decrease traffic impacts on the surrounding community. Similarly, the improvement of on-campus circulation will lessen the traffic impact on the surrounding community. The Applicant's general management of parking and vehicular traffic has not been an issue (i.e., no complaints from the surrounding neighborhood). Therefore, these modifications will not impact traffic circulation on or outside of campus negatively, and no traffic circulation condition is necessary.
5. **Off-Street Parking:** Off-street parking for the proposed project is generally calculated upon design capacity as follows:

<table>
<thead>
<tr>
<th>BUILDING/USE</th>
<th>LUO STANDARD*</th>
<th>PARKING REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Apartment Building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22-units @ 21,000 sq. ft. Total</td>
<td>1.5 per unit (&gt;600 sq. ft. but &lt;800 sq. ft)</td>
<td>21</td>
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<tr>
<td>14 1-bedroom unit</td>
<td>2.0 per unit (≥ 800 sq. ft.)</td>
<td>16</td>
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<tr>
<td>8 1-bedroom with loft</td>
<td>plus 1 per 10 units for all projects</td>
<td>2</td>
</tr>
<tr>
<td>Switchgear Building (no staff)</td>
<td>Accessory</td>
<td>0</td>
</tr>
<tr>
<td>Chiller Plant Building (no staff)</td>
<td>Accessory</td>
<td>0</td>
</tr>
<tr>
<td>Hale Pavilion @ 4,000 sq. ft.</td>
<td>Accessory</td>
<td>0</td>
</tr>
<tr>
<td><strong>GENERAL PARKING SUBTOTAL</strong></td>
<td></td>
<td><strong>39</strong></td>
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</table>

- Staff Apartment Building Parking: 26
- West Field Parking Lot: 68
- Services Road Extension Parking Lot: 101
- Reoriented Shared (w/PCC) Parking Lot: 91
- Hale Courtyard and Pavilion: (45)

**PARKING SUPPLY SUBTOTAL**: 241

**NET PARKING REQUIREMENT**: (202)

*For universities and colleges off-street parking is determined by the Director under the PRU LUO, Section 21-2.120-2.

The new 22-unit apartment (multi-family dwelling) building requires 39 additional parking spaces. The 4,000-square foot Hale Pavilion, which is intended as a gathering place for single students living in this area of campus, will not be required to provide additional parking. Similarly, the facility improvements such as the chiller, switchgear buildings, storage tanks, etc., except for periodic service or maintenance, do not require personnel, and therefore, will not be assessed additional parking.

The construction of the new parking lots for the apartment building (26), the West Field (68), the West Loop Road Extension (101), and the shared PCC/SYU-H area (91) will result in 286 new parking spaces. However, the construction of the Hale Courtyard and Pavilion in the existing tennis court parking area will eliminate 45 existing spaces, which means only 241 new spaces will be created.

The previous campus parking surplus of 9 spaces, recognized in the last modification (2013/MOD-1), should be increased to 211 spaces. However, the Applicant recently conducted a parking inventory survey and determined that only 1,502 spaces actually exist, versus 1,568 spaces previously recognized, a deficit of 66 spaces. Therefore, the previous campus parking surplus, is hereby increased from 9 spaces to **145 spaces**.
6. **Off-Street Loading**: The last modification (No. 2013/MOD-1) approved on September 20, 2013, determined there was a surplus of four loading spaces. The 22-unit new multi-family dwelling requires that one additional loading stall is provided. Therefore, a surplus of 3 loading spaces remains; no additional loading stalls are needed at this time.

The proposed modifications are reasonable and consistent with the approved PRU. The proposal will not significantly increase the intensity and scope of the approved BYU-H campus, and will not create adverse land use impacts for surrounding land uses in the neighborhood.

Any party wishing to appeal the Director's action must submit a written petition to the Zoning Board of Appeals (ZBA) within 30 calendar days from the date of mailing or personal service of the Director's written decision (ZBA Rules Relating to Procedure for Appeals, Rule 22-2, Mandatory Appeal Filing Deadline). Essentially, the ZBA Rules require that a petitioner show that the Director based his action on an erroneous finding of a material fact, and/or that the Director acted in an arbitrary or capricious manner, or manifestly abused his discretion.

Generally, the ZBA can only consider the evidence previously presented to the Director of the DPP. The filing fee for appeals to the ZBA is $400 (payable to the City and County of Honolulu).

Failure to comply with ZBA Rules Chapter 22, Procedure for Appeals, may result in the dismissal of the appeal. Copies of the ZBA Rules are available at the DPP. Appeals should be addressed to:

Zoning Board of Appeals
c/o Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

If you have any questions concerning this Minor Modification, please contact Steve Tagawa of our staff at 768-8024.

Very truly yours,

[Signature]

George I. Atta, FAICP
Director

Enclosure: Receipt No. 100389
Exhibit Nos. C-1 to C-15
PROPOSED PROJECTS:

1. University Housing
2. West Field Parking
3. Hawaii Gas Co. Relocation
4. West Road Loop Extension and Parking
5. Electrical Switchgear
6. Hale Courtyard & Pavilion
7. Chiller Plant Renovation
8. East Road Loop Extension
9. Reoriented BYU-H & PCC Shared Service Area & Parking

LEGEND

PRU Boundary
Minor Modification

Proposed PRU Map
BYU - Hawaii

Source: BYU-HAWAII (revised March 21, 2010)
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET * HONOLULU, HAWAII 96813
Phone: (808) 768-8220 * Fax: (808) 768-6111

BUILDING PERMIT
FOR THE PERFORMANCE OF WORK UNDER THE
BUILDING ELECTRICAL, PLUMBING, AND SIDEWALK CODES
CHAPTERS 16, 17, 19, AND 20, RESPECTIVELY, AND UNDER CHAPTER 18
(FEES AND PERMITS) OF THE REVISED ORDINANCES OF
THE CITY AND COUNTY OF HONOLULU

LOCATION

<table>
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<tr>
<th>Zone</th>
<th>Section</th>
<th>Plat</th>
<th>Parcel</th>
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<tr>
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<td>4</td>
<td>686</td>
<td>83</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>006</td>
<td>005</td>
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55-220 KULANUI ST Laie 96762
8,951,624 Sq. Ft.

Site Address (if other than primary): 55-560 NANILOA LP

PROJECT:
(BP #802414) [TMK: 5-5-006:005 POID: 468683] 55-560 NANILOA LP // BYU HAWAII - ELECTRIC / UTILITY
/ TRANSFORMER / COMMUNICATION / EQUIPMENT BUILDING (EUTCE) WITH NEW 6' MAX HT CHAINLINK
FENCE WITH GATE [THIRD PARTY REVIEW] (Tax Map Keys 5-5-006: 005, 032, and 035)

TYPE OF WORK
New Building Y Alteration Y Electrical Work Y

RIGHT OF WAY WORK

Driveway: New: Existing: Private:
Sidewalk Types: Curbing Types: Driveway Types:
Linear Ft. of Sidewalk: Linear Ft. of Curbing: Linear Ft. of Driveway:

Please notify the Building Inspector listed below at least 24 hours before starting work in the Right-Of-Way.

GENERAL CONTRACTOR
OKLAND CONSTRUCTION COMPANY INC
Contact Info: (808) 492-0302
Lic. No.: CT31660

NOTES
DATE ISSUED: 05/10/2017
Location Permit Issued: FMB
Location Application Created: FMB

Permission is hereby given to do above work according to conditions hereon and according to approved plans and specifications pertaining thereto, subject to compliance with ordinances and laws of the City and County of Honolulu and State of Hawaii.

FOR DIRECTOR OF DEPARTMENT OF PLANNING AND PERMITTING

THIS PERMIT MUST BE POSTED IN A CONSPICUOUS PLACE ON THE SITE DURING THE PROGRESS OF WORK. THIS PERMIT MAY BE REVOKED IF WORK IS NOT STARTED WITHIN 180 DAYS OF DATE OF ISSUANCE OR IF WORK IS SUSPENDED OR ABANDONED FOR 120 DAYS.

ELECTRICAL AND PLUMBING WORK TO BE DONE BY LICENSED PERSONS AS REQUIRED UNDER CHAPTER 448 E, HAWAII REVISED STATUTES.

NOTICE TO HOMEOWNERS: This is to inform all homeowners that improvements to your home may require approval by your Homeowners Association or authorized representative prior to the commencement of construction.

Approval by the Department of Planning and Permitting does not certify compliance with the Covenants, Conditions and Restrictions or other design restrictions administered and enforced by your Homeowners Association.

ALL CONSTRUCTION UNDER THIS BUILDING PERMIT IS SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL. IT SHALL BE THE DUTY OF THE PERSON DOING THE WORK AUTHORIZED BY THIS PERMIT TO NOTIFY THE BUILDING OFFICIAL THAT THE WORK IS READY FOR INSPECTION.

THE FOLLOWING ARE THE INSPECTORS ASSIGNED TO INSPECT THE CONSTRUCTION UNDER THIS PERMIT AND THEIR TELEPHONE NUMBERS:

<table>
<thead>
<tr>
<th>Building Inspector</th>
<th>Electrical Inspector</th>
<th>Plumbing Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>NELSON OKANO</td>
<td>COLIN LEE</td>
<td>CHRISTOPHER WILLIS</td>
</tr>
<tr>
<td>(808) 768-8125</td>
<td>(808) 768-8126</td>
<td>(808) 768-6175</td>
</tr>
<tr>
<td>JobID: 56794496</td>
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APPLICATION NO.: A2016-02-0320
Initial Print Date: Wednesday May 10, 2017 8:39 am

ExtID: 056789554-003
PERMIT NO.: 802414

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1. CODES
A. HONOLULU COUNTY CODE AMENDMENTS ORDINANCE, JUNE 2011
B. INTERNATIONAL BUILDING CODE (IBC) 2009 EDITION, WITH AMENDMENTS - BUILDING REQUIREMENTS
C. INTERNATIONAL ELECTRICAL CODE (NEC) 2009 EDITION
D. THE AMERICANS WITH DISABILITIES AMENDMENTS ACT (ADAAA), JANUARY 1, 2009 W/ FINAL REGULATIONS MARCH 25, 2011

2. ZONING DATA
A. TAX MAP: #5-5-995 005
B. ZONING: AG-1, R-2
C. LOT AREA: 204 ACRES
D. STREET SET BACKS: FRONT=10FT, BACK/SIDES=5FT
E. PLANNING DATA: MINOR MODIFICATIONS - NEW APARTMENTS
F. REVISED TOTAL LOT COVERAGE: 764,928 S.F.
G. SEE SHEET A101 FOR LOCATION OF DEMOLISHED AND NEW BUILDINGS.

G. CLIMATE CONTROL: NOT APPLICABLE.

1. SOURCE: UNIVERSITY HOUSING NEW 22 UNIT MULTI-FAMILY
2. PROJECT: HALE COURTYARD AND PAVILION
3. DESCRIPTION: WEST ROAD LOOP EXTENSION AND NEW 101-SPACE PARKING LOT
4. DATE: DATED APRIL 16, 2015
5. PERMIT NO.: 94/PRU-4
6. Brigham Young University - Hawaii Campus
7. EXPANSION / BUILDING REQUIREMENTS

1. SCOPE OF WORK: NEW SINGLE STORY SWITCHGEAR BUILDING 1,786 SF. / HT: 25'0" A.
2. OCCUPANCY: F1 (NOT HABITABLE SPACE) MODERATE HAZARD FACTORY INDUSTRIAL
3. OCCUPANCY LOAD: NONE
4. CONSTRUCTION TYPE: TYPE V
5. IMPORTANCE FACTOR: I (LOW IMPORTANCE)
6. CLIMATE CONTROL: NONE REQUIRED
7. DISTANCE OF ALL ADJACENT BUILDINGS

1. SCOPE OF WORK: REMODEL OF EXISTING ENCLOSED SWITCHGEAR BUILDING 1,786 SF. / HT: 25'0"
2. OCCUPANCY: F1 (NOT HABITABLE SPACE) MODERATE HAZARD FACTORY INDUSTRIAL
3. OCCUPANCY LOAD: NONE
4. CONSTRUCTION TYPE: TYPE VB
5. IMPORTANCE FACTOR: II (SUPPORTS MODERATE - HAZARD FACTORY INDUSTRIAL)
6. CLIMATE CONTROL: NONE REQUIRED
7. DISTANCE OF ALL ADJACENT BUILDINGS

1. SCOPE OF WORK: REMODEL OF EXISTING ENCLOSED CHILLER BUILDING (BUILT 1979) AND EXPANSION OF CHILLER BUILDING TOWER 105’ SF. ADDITIONAL / HT: 18’2" A.
2. OCCUPANCY: F1 (NOT HABITABLE SPACE) MODERATE HAZARD FACTORY INDUSTRIAL
3. OCCUPANCY LOAD: NONE
4. CONSTRUCTION TYPE: TYPE V
5. IMPORTANCE FACTOR: III (SUPPORTS COMMERCIAL BUILDINGS)
6. CLIMATE CONTROL: NONE REQUIRED
7. DISTANCE OF ALL ADJACENT BUILDINGS
Draft Archaeological Literature Review and Field Inspection
Draft

Archaeological Literature Review and Field Inspection for the BYUH Land Use Reclassification Project, Lāʻie (Lāʻie Wai and Lāʻie Maloʻo) Ahupuaʻa, Koʻolauloa District, Oʻahu
TMKs: [1] 5-5-006:005, 032, and 035

Prepared for
R.M. Towill Corporation

Prepared by
Gina M. Farley, M.A.,
David Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawaiʻi, Inc.
Kailua, Hawaiʻi
(Job Code: LAIE 9)

June 2017

Oʻahu Office
P.O. Box 1114
Kailua, Hawaiʻi 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
1860 Main St.
Wailuku, Hawaiʻi 96793
Ph: (808) 242-9882
Fax: (808) 244-1994
## Management Summary

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Date</td>
<td>June 2017</td>
</tr>
<tr>
<td>Project Number (s)</td>
<td>Cultural Surveys Hawai‘i Inc. (CSH) Job Code: LAIE 9</td>
</tr>
<tr>
<td>Investigation Permit Number</td>
<td>The archaeological fieldwork was carried out under archaeological fieldwork permit number 17-08 issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-282.</td>
</tr>
<tr>
<td>Agencies</td>
<td>SHPD</td>
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<tr>
<td>Land Jurisdiction</td>
<td>Brigham Young University Hawaii (BYUH)</td>
</tr>
<tr>
<td>Project Funding</td>
<td>BYUH</td>
</tr>
<tr>
<td>Project Location</td>
<td>The project is within Lā‘ie Ahupua‘a, Ko‘olauloa District, O‘ahu, TMKs: [1] 5-5-006:005, 032, and 035 (1998 Kahuku U.S. Geological Survey [USGS] topographic quadrangle). It comprises two discrete areas at the BYUH campus, referred to as the north and south project areas in this report. The north project area is within Lā‘ie Wai Ahupua‘a, while the south project area is within Lā‘ie Malo‘o Ahupua‘a.</td>
</tr>
<tr>
<td>Project Description</td>
<td>The proposed project involves the reclassification of land use from agricultural to urban.</td>
</tr>
<tr>
<td>Project Acreage</td>
<td>The project area encompasses approximately 15 acres (6.07 hectares).</td>
</tr>
<tr>
<td>Document Purpose</td>
<td>This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project and, based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s historic preservation and environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-276. Consequently, this report cannot be used to make formal recommendations for SHPD review and acceptance.</td>
</tr>
<tr>
<td>Fieldwork Effort</td>
<td>Fieldwork was conducted on 24 May 2017 by Gina Farley, M.A., and David Shideler, M.A., under the general supervision of principal investigator Hallett Hammatt, Ph.D. This work required approximately 1 person-day to complete.</td>
</tr>
</tbody>
</table>
### Results Summary
The entire project area(s) appears to be graded/bulldozed, and no historic properties were observed during the field inspection. Background research indicated any evidence of traditional Hawaiian activity in the area was likely destroyed during the plantation era (ca. mid-1800s to mid-1900s), when both the south and north project areas were in sugarcane cultivation; as expected, no evidence of traditional Hawaiian activity was observed during the field inspection. Historic maps indicate that during the first half of the twentieth century, several structures likely representing a plantation camp/village existed within the north project area, while a plantation rail line crossed through the south project area. Once again, evidence of this former land use appears to have been removed/destroyed by subsequent land alterations and construction events, as no evidence of historic plantation activity was observed during the field inspection.

### Recommendations
Early consultation with the SHPD is recommended to determine what, if any, historic preservation requirements are indicated. Background research and field inspection indicate evidence of prior land use within the project area(s) has been removed or destroyed by subsequent land alterations.
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Section 1  Introduction

1.1 Project Background

At the request of R.M. Towill Corporation, Cultural Surveys Hawai‘i Inc. (CSH) prepared this archaeological literature review and field inspection (LRFI) for a proposed Brigham Young University Hawaii (BYUH) Land Use Reclassification project located in Lāʻie (Lāʻie Wai and Lāʻie Maloʻo) Ahupuaʻa, Koʻolauloa District, Oʻahu, TMKs: [1] 5-5-006:005, 032, and 035. The project area is depicted on a portion of the 1998 Kahuku U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 1), a tax map key plat (Figure 2), and a 2013 aerial photograph (Figure 3).

The project area comprises two discrete locations at the BYUH campus, referred to in this report as the “north” and “south” project areas. The north project area is within Lāʻie Wai Ahupuaʻa, while the south project area is within Lāʻie Maloʻo Ahupuaʻa. Combined, the two project areas comprise approximately 15 acres. The proposed project involves the reclassification of land use for these ca. 15 acres from agricultural to urban.

1.2 Document Purpose

This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project and, based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s historic preservation and environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-276. Consequently, this report cannot be used to make formal recommendations for the Hawai‘i State Historic Preservation Division (SHPD) review and acceptance.

1.3 Environmental Setting

The project area is situated along the coastal plain of the north windward coast of Oʻahu in the town of Lāʻie at an elevation of 20–40 feet (ft) above mean sea level (AMSL). The project area receives 60-80 inches of rain annually; however, the rainfall gradient increases rapidly to nearly 150 inches near the Koʻolau summit (Juvik and Juvik 1998). The northeast margin of the Koʻolau Mountain Range is deeply dissected by numerous narrow and small gulches.

1.3.1 Natural Environment

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area’s soils consist primarily of Haleiwa silty clay, 0 to 2% slopes (HeA) and Coral outcrop (CR), with a small area of Keaau clay, 0 to 2% slopes (KmA) (Figure 4). Approximately 50% of the northwestern project area and more than 90% of the southern project area consists of HeA soils. Haleiwa Series soils are described as follows:

This series consists of well-drained soils on fans and in drainageways along the coastal plains. These soils are on the islands of Oahu and Molokai. They developed in alluvium derived from basic igneous material. They are nearly level to strongly
Figure 1. 1998 Kahuku USGS topographic quadrangle depicting project area(s)
Introduction

Figure 2. Tax Map Key (TMK) [1] 5-5-006 depicting project area(s) (Hawaiʻi TMK Service 2014)

LRFI for the BYUH Land Use Reclassification Project, Lāʻie, Koʻolaupoa, Oʻahu

TMKs: [1] 5-5-006:005, 032, and 035
Figure 3. 2013 aerial photograph (Google Earth) showing project area(s)
Cultural Surveys Hawai‘i Job Code: LAIE 9

Introduction

LRFI for the BYUH Land Use Reclassification Project, Lā‘ie, Ko‘olauloa, O‘ahu

TMKs: [1] 5-5-006:005, 032, and 035

Figure 4. Google Earth aerial photograph (2013) with overlay of Soil Survey of the State of Hawaii (Foote et al. 1972), indicating soil types within and surrounding the project area(s) (U.S. Department of Agriculture Soils Survey Geographic Database [USDA SSURGO] 2001)
sloping. Elevations range from sea level to 250 feet. The annual rainfall amounts to 30 to 60 inches, most of which occurs between November and April. The mean annual soil temperature is 73° F . . .

These soils are used for sugarcane, truck crops, and pasture. The natural vegetation consists of koa haole, lantana, guava, Christmas berry, bermudagrass, and fingergrass. [Foote et al. 1972:33]

For HeA soils permeability is moderate, runoff is very slow, and the erosion hazard is no more than slight. (Foote et al. 1972:33).

CR soils are described as follows:

Coral outcrop (CR) consists of coral or cemented calcareous sand on the island of Oahu. The coral reefs formed in shallow ocean water during the time the ocean stand was at a higher level. Small areas of coral outcrop are exposed on the ocean shore, on the coastal plains, and at the foot of the uplands. Elevations range from sea level to approximately 100 feet . . .

Coral outcrop makes up about 80 to 90 percent of the acreage. The remaining 10 to 20 percent consists of a thin layer of friable, red soil material in cracks, crevices, and depressions within the coral outcrop . . .

This land type is used for military installations quarries, and urban development. Vegetation is sparse. It consists of kiawe, koa haole, and fingergrass. [Foote et al. 1972:29]

KmA comprises only the far northeast corner of southern project area. The Keaau Series is described as follows:

This series consists of poorly drained soils on coastal plains on the island of Oahu. These soils developed in alluvium deposited over reef limestone or consolidated coral sand. They are nearly level and gently sloping. Elevations range from 5 to 40 feet. The annual rainfall amounts to 20 to 35 inches. Most of the rainfall occurs between November and April. The mean annual soil temperature is 73° F . . .

These soils are used for sugarcane and pasture. The natural vegetation consists of kiawe, bermudagrass, bristly foxtail, and fingergrass. [Foote et al. 1972:64–65]

1.3.2 Built Environment

The project area encompasses two discrete areas at the BYUH campus, which covers approximately 100 acres between the mountains and the shore. Dormitories capable of housing some 1,200 students are located at the south end of the campus, while additional student housing is next to the Laie Hawaii Temple, adjacent to the campus. Other campus buildings include a two-story library. The university also partners with the nearby Polynesian Cultural Center, which is the largest living museum in the state of Hawai‘i, occupying approximately 42 acres owned by BYUH.
Section 2  Methods

2.1 Field Methods

CSH completed the fieldwork component of this study under archaeological fieldwork permit number 17-08, issued by the SHPD pursuant to HAR §13-282. Fieldwork was conducted on 24 May 2017 by CSH archaeologists Gina Farley, M.A., and David Shideler, M.A., under the general supervision of principal investigator, Hallett Hammatt, Ph.D. This work required approximately 1 person-day to complete. In general, fieldwork included 100% pedestrian inspection of the project area and GPS data collection.

2.1.1 Pedestrian survey

A 100%-coverage pedestrian inspection of the project area was undertaken for the purpose of historic property identification and documentation. The pedestrian survey was accomplished through systematic sweeps spaced 5 m apart.

2.2 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai‘i, the Hawai‘i State Archives, the Mission Houses Museum Library, the Hawai‘i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai‘i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona ‘Aina database (Waihona ‘Aina 2000). This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of historic properties in the project area.
Section 3  Background Research

O’ahu was divided into six moku (districts)—Kona, ‘Ewa, Wai‘anae, Waialua, Ko‘olauloa, and Ko‘olaupoko—that were further divided into 86 ahupua‘a (smaller land division) (Kame‘elehiwa 1992:330). These lands, in turn, were further divided as private property during the Māhele of 1848; modern maps and land boundaries still generally follow the ancient system of land division. The project area lies in the district of Ko‘olauloa within the ahupua‘a of Lā‘ie Malo‘o and Lā‘ie Wai.

3.1 Traditional and Historical Background

Lā‘ie Malo‘o Ahupua‘a extends from the ocean to the crest of the Ko‘olau Mountains and is bound by Lā‘ie Wai Ahupua‘a to the north and Kaipapa‘u Ahupua‘a to the south. The ahupua‘a was named after the legendary Hawaiian beauty, Lā‘ieikawai, whose name means “Lā‘ie of the water” (Pukui et al. 1974:127; see Section 3.2.1 for an expanded version of the story). The word lā‘ie is a shortened version of two Hawaiian words, lau ‘ie, the name of the ‘ie (Freycinetia arborea) vine leaf, which was a symbol of royalty. The word malo‘o is defined as “dry,” while the word wai is defined as “water” (Pukui et al. 1974:128; Pukui and Elbert 1986:377); hence, the two ahupua‘a names indicate “dry Lā‘ie” and “wet Lā‘ie,” with the latter referencing the part of Lā‘ie with the pond and streams. However, long-time kama‘āina (native-born) residents have a different interpretation of the name as “day of reckoning,” an association of the tradition that Lā‘ie was a pu‘uhonua (place of refuge) for kapu (taboo) breakers (Faris 1929:127; Maly and Rosendahl 1995:12).

3.1.1 Coastal Lā‘ie

The following section on coastal place names is adapted from John Clark’s (1977:138–146) Beaches of O‘ahu, unless otherwise noted.

The coastal section of Lā‘ie Malo‘o stretches from just south of Lā‘ie Point (also known as Laniloa; Figure 5) to the end of Kokololio Beach to the south. Kalanai Point is also sometimes referred to as Cookes’ Point, named after a prominent family who leased a country house in this area in the early 1900s. Near the point, there was once a fishing ko‘a, or shrine (Site 274; McAllister 1933:156). At this shrine, the fishermen offered kala (surgeonfish and unicornfish; Naso spp.) and enenue (pilot fish; Kyphosus spp.). On the south side of the point is a coral reef called Lua‘awa (“awa fish hole”), a known fishing spot for the awa (milkfish; Chanos chanos).

Laniloa Point, or Lā‘ie Point, is a protrusion of rock separating Lā‘ie Beach to the south from Laniloa Beach to the north. Laniloa literally means “tall, majesty” and was named for two mo‘o, lizard-like creatures, which were slain by the demi-hero Kana and his brother Nīheu (see Section 3.2.3 for an expanded version of the story). Laniloa is also the name of a supernatural dog, who was killed by the Hawaiian pig-god, Kamapua‘a.

On the south side of the point is a reef called ‘Ōnini (“slight breeze”). A plane sent up to observe the 1957 tsunami once crashed on this reef. The beach in front of this reef is sometimes called Clissold Beach, after the former director of Zion Securities, who had a beach home there (Clark 2002:49). To the south of ‘Ōnini, are two shallow pockets of sand, good for swimming.
Figure 5. Photo of Lā‘ie Point (foreground) with off-shore islands ca. 2009 (CSH 2009)
Continuing to the south was a reef offshore from Laniloa Beach called Pahu‘ula, meaning “lobster box.” Live lobsters were kept in traps in a section of this reef that had three protruding rocks, forming a natural “box.” The beach from Paha‘ula to the southern end was once called Scott’s Beach, for Alvin Scott, who had a large house near the shore at the mouth of Wailele Stream. On this beach, McAllister (1933:158) recorded the meager remains of a fishing shrine called Kailuku‘una (Site 285), where fishermen once left offerings of the ‘anae (mullet, *Mugil cephalus*). Between Kēhuku‘una Point and Pali Kilo I‘a Point, the beach area was known to fishermen as Lā‘ie Malo‘o Beach (Lā‘ie Beach Park), but since around 1955 it has been called Pounders Beach for the off-shore break that makes these good waters for body surfing. In the historic period, sections of the beach have also been called Pahumoa, in honor of the Hawaiian fisherman who lived near Kōloa Stream and was generous with his catch, and Kikila (Hawaiian for “Cecil”), named for the home of Mr. Cecil Brown, who had a large estate in the area in the late 1800s.

Both Kēhuku‘una Point and Pali Kilo I‘a Point (“fish watchers’ cliff”) were places where spotters would stand and direct off-shore fishermen to schools of fish. The pier at Lā‘ie Landing, built in 1887 and used to load sugar and other crops on steamships headed for Honolulu, was also between these two points. According to Clark (1977:144), the fishermen went to the waters off Pounders Beach for ‘ō‘io (bonefish; *Albula vulpes*), pāpio (crevally; Carangidae sp.), and moi (threadfish; *Polydactylus sexfilis*).

The beach from Pali Kilo I‘a to the border with Kaipapa‘u Ahupua‘a is called Kokololio Beach, named for a gusty wind. Although Pukui et al. (1974:116) translate this name simply as “gusty,” Clark (1977) believes this is a post-Contact name meaning “creeping horse”:

Kokololio . . . takes its name from a peculiar wind that blows from the mountains in this region. Rather than blowing steadily, this wind rushes down upon the shoreline in very sharp, vigorous gusts. This characteristic reminded the Hawaiians of a high-spirited, prankish horse, one that would amble along at a walk and then suddenly run off at a gallop, much to the consternation of his rider. They named the wind Kokololio ‘creeping horse,’ because of the humorous relationship they noted between such a horse and the changeable, undependable, unpredictable wind. [Clark 1977:145]

The northern section of Kokololio Beach is sometimes called Mahakea Beach, named for the Hawaiian man who had a Land Commission Award (LCA) in this area. The southern section is called Kakela Beach, for the Castle family (Kakela is Hawaiian for Castle), who had a large estate in this area. They had many statues on their estate, including a famous one called “La Carita” of a woman and two children; based on this, a surfing spot off the beach was called “Statues.” The dunes near this statue were called Haleweke; in later years, the area was simply called “The Dunes.” In addition, there are two coral reefs off this beach, Papa‘a‘ula (“lobster enclosure”) near Pali Kilo I‘a Point and an unnamed reef extending from Haleweke to the south end of the beach (Clark 1977:145).

3.1.2 Inland Lā‘ie

Place name translations presented without attribution in this subsection on inland areas are from *Place Names of Hawaii* (Pukui et al. 1974), unless indicated otherwise.
The *ahupua’a* is divided into two sections, Lā‘ie Malo‘o (“dry Lā‘ie”) on the south side and Lā‘ie Wai (“wet Lā‘ie”) on the north (Pukui et al. 1974:128). The dividing line extends from Laniloa Point on the coast to the Ko‘olau Mountains. Lā‘ie Malo‘o Ahupua‘a is drained by a number of perennial and non-perennial streams: Kahawainui, Wailele (“waterfall”), Kōloa, and Laniloa Stream, which begins *mauka* (toward the mountain) of BYUH then disappears. This non-perennial stream begins again on the *makai*-(toward the ocean) facing portion of BYUH before draining at Laniloa Beach, suggesting the stream traverses below the school.

From south to north, the gulches extending from the uplands to the sea are Kokololio (“gusty”); ‘A‘akaki‘i; Kōloa (“tall sugarcane” according to Pukui et al. 1974; “wild duck” according to Handy and Handy 1972:461), also called Lā‘iemalo‘o in the lower reaches; and Wailele. Lā‘ieloa Stream is so short it is not usually pictured or labeled on most maps. It seems to originate not from the uplands but from the swampland that once covered the area adjacent to and *mauka* of Kamehameha Highway.

Only a few *pu‘u* (peaks) are labeled on historic maps. Kaipapa‘u (“shallow sea”) is located on the Kaipapa‘u–Lā‘ie border. These may not be traditional names, but instead may be the names of triangulation stations used by early surveyors. At the highest point of the *ahupua’a*, along the *mauka* boundary at the Ko‘olau Mountain Range, is a peak called Pu‘u Ka‘inapua‘a (“pig procession hill”).

### 3.2 Mo‘olelo (Story)

Hawaiian traditions describe the region as an agriculturally rich land including cultivation of taro, sugarcane, bananas, and sweet potatoes but tend to focus on the sea, particularly the migratory mullet that came in great numbers to Lā‘ie Bay.

#### 3.2.1 The Romanace of Lā‘ieikawai

Lā‘ie is named after the *mo‘olelo* (story, myth) of Lā‘ieikawai, the story of twin girls from the *ahupua’a*, raised separately, who later had entangled marriages (Beckwith 1970:526–528; Kalākaua 1990:457–480; Paki 1972:52). Mary Kawena Pukui (1983) associates the poetical saying, Lā‘ie i ka ’ēheu o na manu (“Lā‘ie, borne of the wings of birds”), with this *mo‘olelo* of the twin girls. Paki (1972:52) places this story at the site of what is now the Laie Hawaii Temple of the Church of Jesus Christ of Latter-day Saints.

The romance of the beautiful Hawaiian twins Lā‘ieikawai and Lā‘ielohelohe is closely related to Wai‘āpuka, a pond or spring with an underground cavern on the Lā‘ie side of the Mālaekahana-Lā‘ie border:

The romance of Laie-i-ka-wai (Laie in the water) is the story of a high tapu chiefess concealed at birth in a cave reached by diving through a pool of water and later reared under tapu in an earthly paradise prepared for her in Paliuli in the uplands of Puna by her mo‘o guardian Waka, who hopes to gain wealth and position by arranging a marriage for her to some high chief. An impostor steps in on the eve of marriage and she is abandoned by Waka and her twin sister substituted in her place. Through a group of guardian girls, the abandoned sisters of a rejected suitor who has tried to use their kupua [supernatural] powers to win the chiefess and has then attempted to storm her tapu house by force, she wins a very high tapu chief from
the heavens as a husband, her foes are punished, and she herself goes to dwell in the heavens with her husband. He proves unfaithful, his parents cast him out, and his wife joins her sister and is worshiped today as a goddess. [Beckwith 1970:526]

This pool was still intact in 1885, when a traveling party described it as follows:

Entering the district of Ko‘olauloa, and approaching the coast over a broad stretch of grassy meadow but slightly above the level of the ocean, our party was suddenly brought to a halt beside a pool of clear water, nearly round, and perhaps a hundred feet in diameter. The surface of the pool was ten or twelve feet below the level of the surrounding plain, and its even banks of solid rock dropped almost perpendicularly into water of unknown depth. The volume of the pool is affected neither by rain nor drought, and the native belief is that it is fed by springs at the bottom, and has a subterranean drainage to the ocean, some two or three miles distant.

All of them (the legends) speak of a cavern somewhere beyond the walls of the pool, and to be reached only by diving into the water and finding the narrow passage leading up into it.

An old native plunged into the pool. Swimming to the northern wall, he clung for a moment to a slight projection, and then disappeared. Three or four minutes elapsed when the salutation of aloha greeted us from the opposite wall, and the next moment a pair of black eyes were seen glistening through a small opening into the cavern about four feet above the surface of the water. The swimmer then returned to the pool by the passage through which he had left it.

To the many questions with which he was asked the old man returned but brief answers on his return, and when importuned to explain the method of his entrance to the cavern, that the secret might not be lost, he pointed significantly to the sea, and declared that there would be found the bodies of those who sought to solve the mystery of the passage and failed. [Dagget 1888 in Kalākaua 1990:455–480]

McAllister was guided to Wai‘āpuka Pond during his archaeological survey of O‘ahu in 1930 for the Bishop Museum. Furthermore, its location can be clearly seen on modern topographic maps. McAllister (1933) described its importance to the Hawaiians thusly:

Waiaiapuka is made famous by the legend of Laieikawai. Without guidance it is difficult to find for it is hidden from sight even from the surrounding elevations or from the tops of the highest pines which line the road. The pool is oval in shape, measuring about 30 ft. by 60 ft. with the water about 10 ft. below the level of the surrounding plain. Tides are said to affect the pool. On the Laie side is a small crevice in the rock, which is said to open into the cavern in which Laieikawai was hidden. Natives of the region remember when it was possible to swim through an underwater entrance, and it is said that the chamber could accommodate three or four people. Within the last 15 years silt has filled the pool, and it is no longer possible to enter the hidden chamber. The pool is significant in the minds of the Hawaiians because it was here that Waka hid Laieikawai until she reached maturity. [McAllister 1933:156–157]
The *mo‘olelo* of Lā‘ieikawai was printed in the Hawaiian language newspaper *Ka Hiwahiwa o Paliuli* on 11 April 1863 and later translated by Martha Beckwith (1918). In this *mo‘olelo*, the chief Kahauokapaka told his wife Mālaekahana that if their first-born child was a boy, it would live, and all subsequent children would be raised as their children, but if the first-born was a female, it should be killed, and all females thereafter, until a boy was born. Mālaekahana bore five daughters in succession and each time her husband ordered the baby girl to be killed. During her sixth pregnancy, Mālaekahana consulted the priest Waka, asking how she could save the next child. He told her to suggest to her husband to go out fishing when her labor pains began and to bear the child in secret. She followed the priest’s advice, and when her husband was away, bore not one female child, but twins, and placed them in the care of the priest and his wife, Kapukaihaoa, to be raised. They hid the child Lā‘ieikawai in the pool of Wai‘āpuka, and the second girl, Lā‘ielohelohe in the uplands of Wahiawā:

When Waka and Kapukaihaoa had taken their foster children away, Waka said to Kapukaihaoa, ‘How shall we hide our foster children from Kahauokapaka?’

Said the priest, ‘You had better hide your foster child in the water hole of Waiapuka; a cave is there which no one knows about, and it will be my business to seek a place of protection for my foster child.’

Waka took Laieikawai where Kapukaihaoa had directed, and there she kept Laieikawai hidden until she was come to maturity.

Now, Kapukaihaoa took Laielohelohe to the uplands of Wahiawa, to the place called Kukaniloko.

All the days that Laieikawai was at Waiapuka a rainbow arch was there constantly, in rain or calm, yet no one understood the nature of this rainbow, but such signs as attend a chief were always present wherever the twins were guarded. [Beckwith 1918:64–65]

3.2.2 Manōnihokahi, the One-Toothed Shark

According to Rice (1977:122, 124), the *mo‘olelo* of Manōnihokahi (“shark with one tooth”) takes place in Lā‘ie and Mālaekahana Ahupua‘a. In this story, Manōnihokahi would often pass through a tunnel or water hole in Lā‘ie into the ocean in his shark form to kill lone fishermen. During McAllister’s archaeological survey in 1930, the general location of this tunnel was pointed out to him (Site 279; McAllister 1933:157).

Once back in his mortal form, Manōnihokahi’s deeds were discovered and he was put to death:

Near the water hole in Mālaekahana, between La‘ie and Kahuku, lived a man called Mano-niho-kahi (‘Shark-with-one-tooth’), who was possessed of the power to turn himself into a shark. Mano-niho-kahi appeared as other men except that he always wore a kapa cloth [bark cloth] which concealed the shark’s mouth in his back. Whenever he saw women going to the sea to fish or to get limu (edible seaweed), he would call out, ‘Are you going into the sea to fish?’ Upon hearing that they were, he would hasten in a roundabout way to reach the sea, where he would come upon them and, biting them with his one shark’s tooth, kill them. This happened many times. Many women were killed by Mano-niho-kahi. At last the chief of the region
became alarmed and ordered all the people to gather together on the plain. Standing with his kahuna [priest], the chief commanded all the people to disrobe. All obeyed but Mano-niho-kahi. So his kapa was dragged off and there on his back was seen the shark’s mouth. He was put to death at once and there were no more deaths among the women. [Rice 1977:124]

Pukui (as cited in Sterling and Summers 1978:159) tells of a different shark with one tooth, an *akua* (god) named Kaunihokahi (meaning “One-Toothed-U”), who protected the local community of Lāʻie. He lived in a *lua* (pit) in Lāʻie. To warn people not to go further into the ocean, Kaunihokahi would nip like a *pāpaʻi* (crab) and cut the person with just one tooth, or he would appear in the form of a small fish. Pukui’s account in Sterling and Summers (1978) further contends this shark could have some connection with Kaunihokahi Heiau (Site 286; McAllister 1933:158) in Hauʻula (the ahupuaʻa to the south of Kaipapaʻu, which borders Lāʻie on the south).

### 3.2.3 Laniloa, the Moʻo

This *moʻolelo* concerns the creation of Laniloa Point (as known as Lāʻie Point) and the five islands offshore from Mālaekahana and Lāʻie bays (Armitage and Judd 1944:141; Rice 1977:124). The islands were created out of a *moʻo* (lizard), who stood upright in ancient times (Pukui and Elbert 1986:253). The *moʻo* would kill people who passed through the area. A man named Kana and his brother had rescued their mother from the island of Molokaʻi and taken her back to Hawaiʻi Island. Afterwards, Kana set out on a journey around the islands to kill all the *moʻo*. He eventually reached Lāʻie, where the *moʻo* was killing many people. Kana fought the monster and defeated it. He then took the head of the *moʻo*, cut it into five pieces, and threw them into the ocean (Rice 1977:124). Today, the five pieces represent the small islands of the area: Malualai, Keauakalupapa, Pulemoku, Mokuaaniwa, and Kihewamoku. A deep hole demarcates the spot where Kana severed the head of the *moʻo*.

In Pukui’s version of Laniloa, she notes the hole has since been “filled in” (Pukui et al. 1974:129). However, there is some confusion concerning this hole. Pukui and Korn (1973:60) state that the “hole where Kana severed Lani-loa’s head can easily be seen from the lookout at the end of the promontory.” Pukui and Korn seem to be referring to the hole in the offshore island of Keauakalupapaʻa, also called Kukuihoʻolua. This hole can clearly be seen from the shore (Figure 6). This hole has been confused with a pool known as the “Beauty Hole,” discovered in the 1930s during construction of Kamehameha Highway, when excavation led to the collapse of a sinkhole. The hole was filled in 1969 for safety reasons. In modern narrations of the story, the “Beauty Hole” is erroneously identified as the original home for Laniloa (Handy and Handy 1972:461), as the hole left by his severed head (Sterling and Summers 1978:158), or even as the pool in which Lāʻieikawai was hidden by her guardian (Craig 2004:154).

### 3.2.4 The Mullet of Pearl Harbor and their Journey to Lāʻie

McAllister (1933:155) recorded the remains of a fishing shrine at Makahoa Point at the north end of Mālaekahana Bay. At Makahoa Point was a fishpond called Waipunaea, which according to legend was the place where mullet came that traveled all the way from Pearl Harbor. McAllister (1933:155) noted, “[t]o this day schools of mullet come around the island to this northern point of Mālaekahana. They go no farther, and their apparent disappearance still mystifies the Hawaiians.”
Figure 6. Photo of Keauakaluapa’a’a (also known as Kukuiko’olu), the off-shore island facing Lā’ie Point associated with the mo’olelo of Laniloa, the mo’o, ca. 2009 (CSH 2009)
The mullet traveled from their home in Pearl Harbor and went east (counter-clockwise) around the island, thus passing the shoreline of Lā‘ie.

One version of the migrating mullet (Fornander 1919, *Legend of Maikoha*, 5(2):270–273) concerns a man named Maikoha, who was exiled by his father for breaking several *kapu*. Maikoha settled in Kaupō, Maui and changed into the first *wauke* (paper mulberry; *Broussonetia papyrifera*) plant. His four sisters, Kaihuopala‘ai, Kaihuko‘a, Ihukoko, and Kauluku‘una, came in search of him and found his *piko* (umbilical cord) beneath the *wauke* plant. They left their brother in Kaupō and returned to O‘ahu, landing first in ‘Ewa (near Pearl Harbor) and then traveling along the coast to Wai‘anae, Waialua, and finally to Lā‘ie. At each of the three places, one sister married a local man; a certain type of fish that accompanied them also stayed in that place. At the first and last stops, Pearl Harbor and Lā‘ie, the associated fish were the mullet. At Lā‘ie, the last sister married a man named Laniloa, which is an alternate name for Lā‘ie Point:

. . . hele mai la lakou a hiki ma Oahu.

Ike aku la o Kaihuopalaai i ka maikai o Kapapaapuhi, he kane e noho ana ma Honouliuli, ma Ewa. Moe iho la laaua, a noho iho la o Kaihuopalaai i laila a hiki i keia la. Oia kela loko kai e hoopuni ia nei i ka anae, nona na ia he nui loa, a hiki i keia kakau ana.

A noho o Kaihuopalaai i laila, hele aku la o kona mau hoahanau a hiki ma Waianae, moe o Kauhukoa me Kaena, he kane ia e noho ana i laila. He kanaka maikai loa o Kaena, a he ‘lii no hoi no Waianae. Nolaila, noho o Kauhukoa malaila a hiki i keia la, oia kela koa ma waho o ka lae o kaena. A o na ia i hele pu mai me i, oia ka ulua, ke kahala, ka mahimahi.

A noho ia i Waianae, hele aku la o kona mau hoahanau a hiki ma Waialua, loaa o Kawaiola ia Ihukoko, he kane ia, a noho iho la me ia. O ka ia i hele pu mai me Ihukoko, o ke aholehole.

A noho ia i laila, hele aku la o Kauhukuuna, a hiki i Laie, loaa o Laniloa, he kane ia, a noho iho la laaua. O ka ia i hele mai me Kauhukuuna, he anae, a hiki i keia la.

**Translation:**

Upon their arrival on O‘ahu, Kaihuopalaai saw a goodly man by the name of Kapapaapuhi [meaning “the eel flats”] who was living at Honouliuli, Ewa; she fell in love with him and they were united, so Kaihuopalaai has remained in ‘Ewa to this day. She was changed into that fish pond [Kapapa‘apuhi] in which mullet [‘anae] are kept and fattened, and this fish pond is used for that purpose to this day.

When Kaihuopalaai decided to stay in Ewa, her sisters proceeded on to Waianae, where Kauhuko decided to make her home and she was married to Kaena, a man who was living at this place, a very handsome man and a chief of Waianae. So she remained in Waianae and she is there to this day. She changed into that fishing ground directly out from the Kaena Point, and the fishes that came with her were the ulua [crevalle], the kahala [amberjack], and the *mahimahi* [dolphin fish].

When Kauhuko decided to stay in Waianae, the remaining sisters continued on to Waialua, where Kawaiola met Ihukoko. Kawaiola was a single man and as he fell
in love with Ihukoko the two were united and they became husband and wife. Ihukoko remained here, and the fish that accompanied her from their home was the *aholehole* [flagtail].

When Ihukoko decided to remain in Waialua, the sister that was left, Kahiukuuna, continued on her way until she came to Laie where she met Laniloa, a goodly man, and they lived together as husband and wife. The fish that came with her was the mullet and it too remained there to this day. [Fornander 1919, *Legend of Maikoha*, 5(2):270-273]

The name of Maikoha’s sister, Kaihuopala’ai, which means “the nose of Pala’ai” (Pukui et al. 1974:68) is also the name the Hawaiians used for the West Loch of Pearl Harbor. Beckwith (1918:354) says Kaihuopala’ai changed into the fishpond near Kapapa’apuhi, which means “the eel flats.” Kapapa’apuhi is identified on old maps as a point that juts into the loch; early Hawaiian settlement was focused on this area.

Raphaelson (1925) gives another version of this tale and explains why the mullet stop at Mālaekahana:

. . . This is the story of Malaekahana, the place where the mullet stops. This is the story of the unpractical fisherman who would not heed the wise warning of his practical wife.

But he had spells of genius, that fisherman, in spite of the fact that he was a stubborn, willful man.

‘It is ridiculous,’ his wife had said to him when he had planted great quantities of sweet potatoes. ‘What will you do with them? We cannot eat them; you cannot sell them; they will rot.’

But he was stubborn. He gave no heed. And later his wife had a chance to say, ‘I told you so,’ which she said again and again, until finally, after a day of quarrelling, she made him promise to take the potatoes over to Pearl Harbor, where perhaps they could be sold. She went with him. But there to their dismay, they found that everyone in Pearl Harbor had plenty of sweet potatoes of their own.

Night came, and the fisherman and his wife bickered and quarreled. She nagged and grumbled all the while cooking a mess of the hated potatoes so that they could have something for supper. But he was angry and refused to eat. So she picked up the potatoes [*sic*] and, in a fit of temper, threw them into the sea.

Immediately then great schools of fish came crowding toward the shore. The eyes of the fisherman grew big. But he had no net, no way to catch the fish. He had nothing but sweet potatoes.

At last there came the big idea. The fisherman took his sweet potatoes and started back toward Kahana bay. At each inlet, he had his wife cook some of the potatoes and threw them into the sea. It took a long time to get home, but when at last they reached Kahana bay they were followed by great swarms of hungry mullet, which he caught in this net.
This is the explanation that is given of a strange phenomenon that occurs on the island of Oahu. The mullet appear every year, first in Pearl Harbor, then in each successive inlet, around the island until it finally reaches Malaekahana bay. Beyond this inlet there is mullet, but it is not the kind that swims from bay to bay.

Why did the fish not stop at Kahana bay? It is not told. It may be that they went on a little way in hopes of more sweet potatoes. No one seems to know.

And after Malaekahana? Where does the mullet go from here? That too, no one knows. Unless, as the Hawaiians tell you, there is an underground tunnel through which they swim. [Raphaelson 1925:38]

In a third version (Nakuina 1998a), Ihuopala’ai is the brother of a woman living in Lā‘ie. As the fish were scarce in Lā‘ie, this woman sent her husband to Ihuopala’ai at Pearl Harbor. Ihuopala’ai had the mullet follow her husband on his return trip, which was made along the shore around Makapu’u Point with the mullet following in the water. Makea says that Ihuopoala’ai’s sister was named Mālaekahana:

The home of the anae-holo is at Honouliuli, Pearl Harbor, at a place called Ihuopalaai. They make periodical journeys around to the opposite side of the island, starting from Puuloa and going to windward, passing successively Kumumanu, Kalihi, Kou, Kalia, Waikiki, Kaalawai and so on, around to the Koolau side, ending at Laie, and then returned by the same course to their starting point. This fish is not caught at Waianae, Kaena, Waialua, Waimea or Kahuku because they do not run that way, though these places are well supplied with other kinds. The reason given for this is as follows:

Ihuopalaai had a Ku-ula, and this fish-god supplied anae. Ihuopala’ai’s sister took a husband and went and lived with him at Laie, Koolauloa. In course of time a day came when there were no fish to be had. In her distress and desire for some she be-thought herself of her brother, so she sent her husband to Honouliuli to ask Ihuopalaai for a supply, saying: ‘Go to Ihuopalaai, my brother, and ask him for fish. If he offers you dried fish refuse it by all means, do not take it, because it is such a long distance that you would not be able to carry enough to last us for any length of time.’

When her husband arrived at Honouliuli he went to Ihuopalaai and asked him for fish. His brother-in-law gave him several large bundles of dried fish, one of which he could not very well lift, let alone carry a distance. This offer was refused and reply given according to instruction. Ihuopalaai sat thinking for some time and then told him to return home, saying: ‘You take the road on the Kona side of the island; do not sit, nor sleep on the way till you reach your own house.’

The man started as directed and Ihuopalaai asked Ku-ula to send fish for his sister, and while journeying homeward as directed a school of fish was following in the sea, within the breakers. He did not obey fully the words of Ihuopalaai for he became so tired that he sat down on the way, but noticed whenever he did so that the fish rested too. The people seeing the school of fish went and caught them. Of
course not knowing that this was his supply he did not realize that the people were taking his fish.

Reaching home he met his wife and told her he had brought no fish but had seen many all the way, and pointed out to her the school of anae-holo which was then resting abreast of their house. She told him it was their supply, sent by Ihuopalaai, his brother-in-law. They fished and got all they desired, whereupon the remainder returned by the same way till they reached Honouliuli where Ihuopalaai was living, and ever afterwards this variety of fish has come and gone the same way every year to this day, commencing sometime in October and ending in March or April. [Nakuina 1998a:270–272]

Beckwith (1970:100) states that Kaihuku‘una becomes the wife of chief Laniloa at Lā‘ie and then “changes into a famous fishing ground for mullet.” Titcomb (1972:65) relates a similar version in which there were two keepers of the mullet at Pearl Harbor who could talk to the fish—a man named Kaulu and a woman named Apoka’a. They had four children: two humans—a daughter named Awawalei (a Hawaiian name for Pearl Harbor) and a son named Laniloa and two supernatural children, an ‘ama’ama (middle stage of the mullet; Mugil cephalus) and a puhi (eel). Laniloa later went to Lā‘ie to live. This is where he heard that the descendants of the ‘ama’ama multiplied, filling up the waters of Pearl Harbor. Laniloa lamented there were no ‘ama’ama in Lā‘ie and traveled to ‘Ewa to ask his supernatural sister, the ‘ama’ama, for some of this fish. The sister traveled back to Lā‘ie with her brother in her human form. The large school of fish stayed underwater and unseen for most of the trip and then came to the surface. Finally, they reached Lā‘ie; the route taken by the brother and sister is the same one the mullet take in their migration up to today.

Pukui (1960:48–51) tells a similar story in which Lā‘ie is lauded as a land of taro, sugarcane, bananas, sweet potatoes, shellfish, and seaweed, and as a bay “silver with mullet.” According to Nakuina (1998b:249), ‘Ai’ai, a god of fishermen, established a fish stone called Kaihuku‘una at Lā‘iemalo’o; this was the only such shrine he established between Waimea and Kou (old name for Honolulu) on O‘ahu. McAllister found the remains of this shrine (Site 285; McAllister 1933:158) during the early 1930s and recorded the location on Laniloa Beach, east of Kēhuku‘una Point. The mullet were the fish offered at this shrine.

### 3.3 Early Post-Contact History

The first historical reference to windward O‘ahu was in 1779, when the HMS Resolution passed along the north side of O‘ahu. Lieutenant James King wrote, “[i]t [O‘ahu] is by far the finest island of the whole group. Nothing can exceed the verdure of the hills, the variety of wood and lawn, and the rich cultivated valleys, which the whole face of the country displayed” (McAllister 1933:153).

On 28 February 1779, in the journal of the Resolution now captained by Charles Clerk due to the untimely death of Captain James Cook at Kealakekua Bay on 14 February, we find a description of the northwest coast of O‘ahu:

Run round the Noern [Northern] Extreme of the Isle which terminates in a low point rather projecting [Kahuku Point]; off it lay a ledge of rocks extending a full Mile into the Sea, many of them above the surface of the Water: the Country in this neighborhood is exceedingly fine and fertile: here is a large Village, in the midst of
it is run up a high pyramid doubtlessly part of a Morai [heiau]. I stood into a Bay just to the Westward of this point the Eastern Shore of which was far the most beautifull [sic] Country we have as yet seen among these Islands, here was a fine expanse of Low Land bounteously cloath’d with Verdure, on which were situated many large Villages and extensive plantations; at the Water side it terminated in a fine sloping, sandy Beach . . . [Beaglehole 1967:572]

In 1794, British Captain George Vancouver (1798) noted the following:

. . . In every other respect our examination confirmed the remarks of Captain King: excepting, that in point of cultivation or fertility, the country did not appear in so flourishing a state, nor to be so numerousy inhabited, as he represented it to have been at that time, occasioned most probably by the constant hostilities that had existed since that period. [Vancouver 1798:71]

It is presumed from these early descriptions that in the 13 years that separated Captain King’s voyage from Captain Vancouver’s, the cultural landscape of the north shore of O‘ahu had undergone significant changes. The probable cause for the decrease in cultivation was the decline in population, due not only to “the constant hostilities” of the inhabitants but also to the spread of venereal and other diseases introduced by Cook’s expedition in 1778 and other visiting ships in the years that followed.

In 1826, the missionary Levi Chamberlain (1926:15) made the first of two trips around the island of O‘ahu to inspect English language schools and communities. On this section of the coast, travelling clockwise around the island, he stopped at Kahu‘u, traveled to Lā‘ie Wai village to inspect a school, stopped at a house in Lā‘ie Malo‘o to rest, and then did not stop again until he got to Hau‘ula, where he inspected a school with 108 scholars. According to his account, Chamberlain and his assistants

. . . arrived at Laiewai [Lā‘ie Wai] where we found a school assembled of 60 scholars, belonging to this place and the adjoining land of Laiemoro [Lā‘ie Malo‘o]. Here we stopped 3 hours & 20 min. and had time to get dry as we had been wet in a shower. – We took dinner at this place and set out at 10 minutes after two. Stopped at one of the last houses in Laiemoro and filled up a sheet of paper with copies for the writing scholars of the school we had last examined. [Chamberlain 1926:15]

Yent and Estioko-Griffin (1980:16) believe this figure of 60 students in the area is indicative of a large population for the Lā‘ie and Mālaekahana coastline. Chamberlain would stop wherever the population was large enough to support a school, indicating Lā‘ie village was the population center for this section of northwest O‘ahu. In 1828, Chamberlain made his second trip around O‘ahu, travelling counter-clockwise, and found two schools in Hau‘ula, two schools in the Lā‘ie–Mālaekahana area, and one schoolhouse at Kahu‘u:

Tuesday Feb. 5th. After breakfast I examined two schools, belonging to Laie & Malaekahana, and was pleased with the appearance of the scholars. At a quarter before 11 A.M. we set out for Kahu‘u, and after traveling about two hours over a level sandy country, arrived at the school house, where we found 83 scholars assembled, waiting to be examined. [Chamberlain 1956:35]
From this account, it would seem the population of the area was increasing, as there were more schools along the coast in 1828 than in 1826; however, this may instead represent the trend in the early historic period for Hawaiians to move to house lots in villages, rather than live in homesteads scattered along the coast and in the uplands. A mission census from 1831/1832 recorded 452 people in Lā‘ie, seemingly the most populous ahupua’a in Ko‘olauloa District (Schmitt 1973:19). By 1835, the reported population had dropped to 375, a 17% population drop over four years and likely a result of introduced diseases and out-migration. In 1838, E.O. Hall wrote of the Ko‘olauloa District, “[m]uch taro land lies waste, because the diminished population of the district does not require its cultivation” (McAllister 1933:153).

Handy (1940:89-91) provides a great deal of information on Lā‘ie. He says there were terraces along Kaho‘oleināpe’a Stream still in use during his 1930s survey. There were old terrace areas noted along the lower and middle reaches of Kahawaiini Stream, terraces about 2.5 miles up Wailele Stream, and terraces 2 miles inland along Kōloa Stream. All of the flat land along the coast was used for wet taro cultivation, including a 60-acre area in back of the Lā‘ie Temple, surrounding the confluence of the tributaries of Kahawaiini Stream. The area was called Kapuna (“the spring”), since the taro fields were watered from a spring. Handy (1940:75) also notes “[s]weet potatoes were grown on the northwest coast from Kaena to Laie.”

3.4 The Māhele

The Organic Acts of 1845 and 1846 initiated the process of the Māhele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the Crown and the ali‘i (chiefs) received their land titles. The common people received their kuleana (individual parcels) in 1850. These records for Land Commission Awards (LCA) offer the first specific documentation of life in Lā‘ie up to the mid-nineteenth century.

Stewardship of Lā‘ie passed from Kamehameha I to his half-brother Kalaimamahū, then to his daughter Kekāuluohi and on to her son William C. Lunalilo. In the Māhele of 1848, Lunalilo retained most of Lā‘ie, comprising 6,194 acres. Kuleana awards for individual parcels within the ahupua’a were subsequently granted in 1850. These LCAs were presented to tenants—Native Hawaiians, naturalized foreigners, non-Hawaiians born in the Islands, or long-term resident foreigners—who could prove occupancy on the parcels before 1845. LCA documents further clarify our understanding of the ‘āina (land) from the perspective of the Hawaiian planter and fisherman in traditional times, as land claims included traditional uses of the land.

Approximately 65 kuleana were awarded to native tenants in Lā‘ie. Over half the claims included house lots and associated habitation features. Most of the claims included lo‘i (irrigated terraces), and many had kula (area for dryland crops or pasture) lands. Also within the claims were scattered ʻāpana (lots) in the mountains, fisheries, fishponds, muliwai (river, river mouth), and even a place for drying kapa (cloth made from bark) in Hau‘ula Ahupua’a. Historic influences can be seen in claims listing horse pastures and pā (a fenced piece of land).

However, other parcels awarded within Lā‘ie Ahupua’a indicate much of the lowlands in the mid-1800s were being utilized for subsistence gardening, including many lo‘i irrigated by ‘auwai (ditch) systems. The lo‘i were interspersed with the kula lands fringing the foothills, with taro being the dominant crop. Other crops described in Land Commission documents included melon and watermelon, coffee, gourd, ‘awa (kava; Piper methysticum), and weuweu (grasses).
Table 1. LCAs awarded in the vicinity of the project area(s); asterisk [*] indicates parcel is adjacent to the project area(s)

<table>
<thead>
<tr>
<th>LCA Number</th>
<th>Claimant</th>
<th>Ahupua'a</th>
<th>Land Use</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>3731:4*</td>
<td>Ihupuu</td>
<td>Lā‘ie Wai</td>
<td>‘Āina kula (plain, field, open country, pasture)</td>
<td>Bordered by Koula’s land on one side and Konohiki’s land on three sides</td>
</tr>
<tr>
<td>3773:5, 6*</td>
<td>Amaka</td>
<td>Lā‘ie Wai</td>
<td>‘Āpana [lot] 5: ‘Āina kula (plain, field, open country, pasture)</td>
<td>Bordered by Konohiki’s land</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Āpana 6: ‘Āina kula (plain, field, open country, pasture)</td>
<td>Bordered by Konohiki’s land</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Āpana 5: Pāhale (house lot)</td>
<td>Bounded by Konohiki’s land on three sides and land of Pahumoa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Āpana 6: Kula ‘āina</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Āpana 7: Kula ‘āina</td>
<td></td>
</tr>
<tr>
<td>4283:2*</td>
<td>Koula</td>
<td>Lā‘ie Wai</td>
<td>Kula ‘āina</td>
<td>Bordered by Ihupu‘u’s land on one side and the Konohiki’s land on three sides</td>
</tr>
<tr>
<td>4333:2–3</td>
<td>Kahookua</td>
<td>Lā‘ie Malo‘o</td>
<td>‘Āpana 2: Kula ‘āina</td>
<td>Bordered by Konohiki’s land on four sides</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Āpana 3: Pāhale (house lot)</td>
<td>Bordered by Konohiki’s land</td>
</tr>
<tr>
<td>10928:2</td>
<td>Ulukou</td>
<td>Lā‘ie Wai</td>
<td>Kula ‘āina</td>
<td>Bordered by Konohiki’s land on four sides</td>
</tr>
</tbody>
</table>
Figure 7. 2013 Google Earth image with LCA overlay depicting parcels located in the vicinity of the project area(s)
were no LCAs awarded within the current project area(s), although several were awarded immediately adjacent to the north project area. LCAs awarded in the vicinity of the current project area(s) are listed in Table 1 and depicted on Figure 7 with original testimony presented in Appendix A. These comprise primarily *kula* lands but with house lots and an area of ponded field taro cultivation indicated.

### 3.5 Ranching in Northwestern O‘ahu

The subsequent history of land changes in the *ahupua‘a* of northwestern O‘ahu, including Lā‘ie and neighboring Mālaekahana, have been extensively researched by Yent and Estioko-Griffin (1980:18-21); their research is a major source for the following discussion.

Charles Gordon Hopkins was an Englishman who had made his way to Hawai‘i to work in various posts of the Hawaiian government, including acting as the secretary for Queen Emma and as the agent for the rental and sale of Crown Lands. He was a friend to Kauikeaouli (Kamehameha III) and the young Alexander Liholiho (later Kamehameha IV) (Korn 1958:212). In 1850–1851, Hopkins purchased the entire *ahupua‘a* of Kahuku and other lands on the north shore of O‘ahu totaling 8,000 acres. By 1863, Hopkins owned extensive lands in Lā‘ie Wai, Mālaekahana, and Kahuku on which he established a cattle and sheep ranch known as the Kahuku Ranch (Korn 1958:211–212).

The ranching venture had dire consequences for the native inhabitants, as it resulted in extensive damage to the environment; it was a major factor in the area’s depopulation.

The natives became concerned for their lush and legend-filled homeland. Kahuku and the hala trees in whose shade it had slept through the centuries, was being threatened by a new kind of white stranger. The herds and flocks ran over the small homesteads scattered here and there through the land, stripping it of verdure. The Hawaiians asked in vain for protection of their trees and vegetable patches. They wrote to the missionary, Emerson, who urged them to build fences and appealed to authorities on their behalf asking that government pounds be set up to enforce newly established trespass laws. At the same time the hala forests began to disappear, the Hawaiian population also began to disappear. Once well-populated, Kahuku became a lonely sheep and cattle ranch, famous for its prize English breeds and its imported water fowl. [Wilcox 1975:16]

J.G. McAllister (1933:153) wrote of an informant, “[s]he [Mrs. John Kaleo] remembers the time when trees, now found only on the mountains, covered the Kahuku plain, now a rather desolate, windswept area.” One can surmise that Mrs. Kaleo could remember the Kahuku plain before and during the depletion of its vegetation due to over-grazing by the sheep and cattle of Kahuku Ranch. The relationship between cattle and the natural environment of Hawai‘i has been described as follows:

> Since the coming of the whites there have been many causes . . . that have been at work bringing about a change in the natural conditions. Chief among the disturbing elements, however, have been the cattle. As early as 1815 they were recognized as a serious menace to the native forests. Roaming at will through the forests they and other animals, as goats and pigs, have done untold damage, and brought about conditions that have been most serious in many places. [Bryan 1915:226-227]
In 1866, an Irish cattleman named Robert Moffitt purchased the Kahuku Ranch from Hopkins. His pastures, used for cattle, sheep, and imported waterfowl, extended along 12 miles of the coast from the sea to the mountains. The foreign livestock quickly decimated the native hala (Pandanus tectorius) forests and overran the gardens of the native tenants.

In 1867, Hopkins conveyed a half interest of the ahupua’a of Mālaekahana to Judge Herman A. Widemann, and in 1872 he conveyed his remaining interest, 298.5 acres in Lā‘ie Wai and other lands in Keana and Kahuku to Widemann. By 1874, Judge Widemann had gained control and ownership of the entire Kahuku Ranch, which by then included the ahupua’a of Kaunala, Pahipahi‘ālua, ‘Ōpana 1 and 2, Kawela, Hanakaoe, ‘Ō‘io 1 and 2, Ulupehupehu, Punalu‘u, Kahuku, Mālaekahana, Keana, and a part of Lā‘ie totaling about 15,000 acres (Kuykendall 1967:138). Hopkins’s sales to H.A. Widemann also included branded cattle and horses on these lands.

In 1874, Kahuku Ranch was renamed Kahuku and Malaekahana Ranch and was sold to Julius L. Richardson (Thayer 1934:138), who in turn sold the 15,000-acre ranch to James Campbell in 1876 (Wilcox 1975:37). The sale of Kahuku and Malaekahana Ranch included the livestock, which then numbered 3,000 cattle, 90 horses, and 1,700 sheep. This purchase was described in an 1876 newspaper account as follows:

It includes 25,000 acres in fee simple, and large tracts of mountain land under long leases, with $34,000 worth of live stock, including 3,000 head of cattle, with the choice band of merino sheep and horses now on it. It is unquestionably the best stock ranch of these islands, and it has been brought to a high state of perfection under the management of the late proprietors, who divided the plain into ten or twelve large paddocks, walled with heavy stone walls. It stretches from Laie to Waimea, a distance of thirteen miles, and those who have ever visited it must have admired its lovely green pastures of manienie grass so fattening to stock. It is the intention of Mr. Campbell to increase his band of sheep to 30,000 of the choicest breed. The price paid is a handsome one, securing to its present proprietor the most desirable ranch of the Islands, and to Mr. Richardson a comfortable fortune, the result in part of his industry and good management, and in part of the Reciprocity Treaty, the first fruit from which he has been so fortunate as to reap. [Hawaiian Gazette, 4 October 1876:3:2]

The manienie grass referred to is probably Bermuda grass (Cynodon dactylon), a valuable pasture grass said to have been introduced into the Hawaiian Islands by Dr. Gerritt P. Judd around 1835 (Neal 1965:67–68).

James Campbell had arrived in Hawai‘i in 1849 and joined a sugarcane enterprise. He made the Pioneer Mill Company on Maui a prosperous sugar enterprise, sold his interests, and then moved to O‘ahu. He purchased several large tracts of land at Honouliuli west of Pearl Harbor, in addition to the acreage at Kahuku, which he operated as livestock ranches (Kuykendall 1967:67). In 1880, George Bowser described Campbell’s Kahuku Ranch as follows:

Kahuku Ranch. Main Road, Kahuku: Proprietor, James Campbell, Esq., of Honouliuli: Manager, W.R. Buchanan: postoffice address, Kahuku, 38 miles from Honolulu, at the northern point of Oahu: 23,608 acres occupied as a cattle ranch:
extends 14 miles along the coast, in close proximity to the sea. A valuable fishery is attached to this property. [Bowser 1880:409]

In 1889, Campbell leased the Kahuku Ranch to B.F. Dillingham, who commissioned a study of the water supply at Kahuku. The water supply study noted the following:

The Kahuku Rancho. This well-known rancho occupies the extreme northerly point of the island, extending from the crest of the mountains to the sea, and from Waimea river on the west to Laie on the east. It is thirty-eight miles distant from Honolulu, either by the Waialua or the Pali road. Its position on the windward side, with high mountains rearing up rapidly from the level of the belt of valley land along the coast, gives it abundant moisture and clothes it in perpetual verdure.

Cattle roaming over its hills and valleys are all fat and sleek, and water is bursting out in places all along the coast, generally near the foot of the hills, or about midway between the foot-hills and the ocean. [Schuyler and Allardt 1889:3]

Eventually Kahuku Sugar Plantation became the major industry focus of Kahuku and adjacent ahupuaʻa; Kahuku Ranch continued operations until the mid-twentieth century.

3.6 History of the Kahuku Sugar Company

On 19 November 1889, James Campbell leased much of his Kahuku Ranch lands in Lāʻie Wai, Mālaekahana, and Kahuku, as well as his Honouliuli lands, to B.F. (Benjamin Franklin) Dillingham (Kuykendall 1967:69). This lease, from 1 January 1890 to 31 December 1935, was a part of Dillingham’s development plan involving the sugar industry and a railroad on Oʻahu (Kuykendall 1967:68). Dillingham’s proposed plan of 1886, called the “Great Land Colonization Scheme,” involved the development at Kahuku and Honouliuli of sugarcane plantations that would be irrigated by artesian well water (Dillingham 1886:73–80).

In 1890, Dillingham subleased some of these lands to the Oahu Railway and Land Company (chartered in 1888), whose president was James B. Castle. Dillingham received the franchise to build his “Oahu Steam Railway” in 1888, and in 1890 the first rails were laid between Honolulu and ‘Aiea. The railway was extended to Waiʻanae in 1895. On 10 December 1889, Dillingham subleased 2,800 acres of the Kahuku tract to James B. Castle, who founded the Kahuku Plantation Company (Kuykendall 1967:69). James Campbell, Benjamin F. Dillingham, and James B. Castle, together with Lorrin A. Thurston as a principal, were the key players in the development of the Kahuku Plantation Company. The first agents were M.S. Grinbaum & Company.

In the first nine years of the plantation, transportation to Honolulu from Kahuku was provided by coastal vessels, which picked up the sugar at Kahuku Landing and delivered it to Honolulu (Figure 8). In 1899, the Oahu Railway finally completed its track to the terminal at Kahuku, and the sugar could be transported directly to Honolulu by train around the west side of the island (Hungerford 1963:10). In 1890, 5 miles of 36-inch gauge railway, with some portable portions, were laid to haul cane from the fields to the mill.

In the business arrangements between members of the Castle family and Alexander and Baldwin, the plantation agency was changed in 1900 to Alexander & Baldwin Ltd. (A&B), with Castle, who was still president of Kahuku Plantation Company, as treasurer. This partnership
LRFI for the BYUH Land Use Reclassification Project, Lā'ie, Ko'olauloa, O'ahu

TMKs: [1] 5-5-006:005, 032, and 035
brought about expansions in the rail system, and by 1903 the rails extended all the way through the Lā‘ie Plantation, which had a contract with the Kahuku Mill to handle their cane.

In 1916, the Kahuku Plantation leased some of its land for pineapple cultivation to one large grower (C. Okayama) and other individual growers on small pieces of land. The growers were obligated to sell their crop to the Hawaiian Pineapple Company, Libby, McNeill & Libby of Honolulu, and the California Packing Corporation, which later became the Del Monte Corporation. The Kahuku Plantation remained relatively small, with less than 4,000 acres under cultivation until the early 1900s, when it expanded to the southeast as far as Hau‘ula. The Kahuku Plantation Company expanded by buying or incorporating other sugar plantation lands. In 1924, it bought the fields of the Koolau Agricultural Company as far south as Kahana Bay. In 1931, the Laie Plantation Corporation was dissolved, and their sugar lands totaling 2,700 acres were purchased and added to the Kahuku Plantation (Dorrance and Morgan 2000:46-47).

Under the caption of “Laie Purchase,” the 1931 Kahuku Plantation Manager’s report for the year comments as follows:

Your company acquired the lease of Zion Securities agricultural lands and the transfer of leases previously held by them through Laie Plantation for a period of 25 years, dating from July 1, 1931. Koolau Railway Company Ltd. was also bought from the Zion Securities Corporation. This railroad will be disincorporated as soon as possible and become purely a plantation railroad. [Kahuku Plantation, Manager’s Report for 1931 in Condé and Best 1973:298]

The end for the cane hauling railroad at the Kahuku Plantation came in 1972, when the following notice appeared in the Honolulu Advertiser:

The company had been losing money on the plantation for the last few years. In 1968, A & B announced the closing of the plantation and the mill. The last crop was harvested in 1968, the last cane was ground at the mill on November 25, 1971, and the final paperwork was completed on February 1972, when the mill was locked to prevent vandalism. [Wilcox 1975:37]

3.7 History of the Latter-day Saints in Lā‘ie

In 1850, Brigham Young sent the first eight Mormon missionaries to the Hawaiian Islands. They arrived on 12 December in Honolulu and then split up, traveling in groups of two or three to the other islands. Their original mission to convert the mainly foreign-born (haole) population proved to be difficult. The missionaries were discouraged and discussed returning home, but they instead decided to stay to learn the Hawaiian language, and to preach to the Native Hawaiians (Britsch 1989:1–14). The number of Hawaiian converts quickly grew, and in 1853 they decided to buy land on Lāna‘i to start a colony where all the brethren could live and work.

The Lāna‘i colony was not a success for a wide variety of reasons, and the mission decided to found a new gathering place. In 1864, two Latter-day Saints Mission presidents, Francis A. Hammond and George Nebecker, traveled to Hawai‘i to purchase land for a new Mormon settlement. Land was fairly cheap at this time in Hawai‘i, as the end of the Civil War in the U.S. had led to a depression in the sugar market leading to sugar planters’ eagerness to sell land (Britsch 1989:64). In 1865, Hammond purchased a 6,000-acre plantation called “Lā‘ie” from Thomas T.
Dougherty. By 1865, the church owned 6,000 acres, likely encompassing all the land in Lāʻie Maloʻo and a portion of the land in Lāʻie Wai (minus the 298 acres owned by the Kahuku Ranch and Kahuku Sugar Company).

On this land were 600 head of cattle, 500 sheep, 250 goats, 20 horses, a large frame house, five native houses, and 5 acres of cotton (Britsch 1989:73). The first order of business for the new owners was to establish a cash crop that would sustain the settlement. Although corn and cotton were grown for the first two years, it soon became evident that sugar would be the salvation of the growing community. A mill was purchased and set up in Lāʻie in 1868, as shown on an 1884 map of Lāʻie Bay (see Figure 12). The problem of insufficient water in some years was solved in the early 1880s, when a flume was built to bring water down from the Koʻolau Mountains. A new, more efficient mill was built in 1879.

By 1866, about 200 Hawaiians, mostly members of the church, were living at the Lāʻie mission settlement (Britsch 1989:79). Growth of the community was slow through the 1870s, due to most Hawaiians wishing to stay near their own homes. In 1874, only about 377 members lived near the mission (Britsch 1989:87). However, church membership as a whole did increase during this time. In 1865, the island-wide membership of the Hawaiian mission was recorded as 500; by 1906, it was 7,212 strong (Britsch 1989:88). In the early years, Hawaiians workers still lived in scattered grass huts, but by the 1890s, the mission families lived in neat cottages or communal mission houses such as the Lanihuli Mission House. In 1870, Elder H.H. Cluff (1870) wrote the following:

Our little colony now consists of seven families from Zion, one Scotchman and about 300 natives, who occupy the land known as Laie, which embraces 6,000 acres . . . . Stock to the amount of 1,000 head could find good pasturage, while the mountains and gulches or canons furnish an immense quantity of timber. Many kinds of fruit grow in the gulches and the honey bees, when we are able to find them, furnish sweet. One hundred and fifty acres of three or four hundred acres of arable land, by the indefatigable zeal and exertion of brother Nebeder, assisted by the brethren who have labored with him, have been brought into a successful state of cultivation and produce renumerative [sic] crops of sugar cane. A good mill, by the same untiring exertion, has been erected, besides considerable fencing, which has raised the value to the place from fourteen thousand to about fifty thousand. [Cluff 1870:281]

In addition to sugarcane, other crops continued to be grown. Taro was cultivated in the coastal marshlands, and alfalfa was grown for livestock feed. As the farms and dairies prospered, the settlement of Lāʻie and Lāʻie Maloʻo grew. A tourist guide for 1895 describes the colony as follows:

LAIE,—thirty-two miles from Honolulu, is a colony and the headquarters of the Mormons on these Islands. The settlement possesses a small sugar plantation, (with a somewhat primitive mill) a cattle ranch, a number of taro patches, and land for sweet potatoes and other products. A number of white Mormons, under a head man from Salt Lake City, occupy the mission premises, which are situated on a hill overlooking the whole settlement. . . . There is a considerable and quite a prosperous [sic] native settlement, all Mormons. The converts have land given them, rent free, and are assisted in building their houses. . . .
The Mormons first came to the Islands in 1850. They have a large number of converts in all parts of the group, estimated at one-tenth in 1890. The Temple at Laie, will accommodate considerably over 1,000 people. A valley behind the mission-house contains several artesian wells and is cultivated in rice by Chinese. An artesian well also supplies the plantation with water. [Whitney 1895:46–47]

The “primitive” mill presented a problem of expansion to the Lā‘ie sugar plantation managers. In 1892, this was resolved by forming an association with the newly formed Kahuku Plantation Company. Matthew Noall, the plantation manager at that time, recalled the following:

Just north of Laie, on a piece of land called Kahuku, a corporation was starting a new sugar plantation and a mill. I thought it wisdom to negotiate with the corporation owners to mill the sugar from our cane on a fifty-fifty basis. I successfully closed the deal, in which it was agreed that the Kahuku Corporation should cut and haul our cane to their mill, and deliver our sugar to the Port of Laie, where it would go by steamer to Honolulu. Instead of the old fashioned method of hauling by ox team and a two-wheeled cart which we had employed at the plantation, the Kahuku People laid a portable track and used a steam engine for power.

When I arrived at Laie for the second mission there were about thirty acres of cane ready to be harvested, and there were a thousand cords of wood ready for fuel. I sold the crop to the Kahuku people to start their own crops, and the wood to run their mill. These negotiations opened the way toward the continuation of our plantation work. And thus at one stroke the revenue problem at Laie was at least partly solved, Though we could save by discontinuing the mill, we needed the work of growing the crops, for this labor was the main avenue of support for the natives at Laie. [Gardner and Gardner n.d:65–66]

Up to the 1890s, the work force at the Lā‘ie plantation was mainly Hawaiians, due to the practice of leasing the land to the Hawaiian converts and allowing them to use some of their land to cultivate traditional crops, such as taro. Eventually, the northern O‘ahu sugar plantations needed additional help to harvest their sugarcane fields. The first immigrants were Chinese, who branched out to become rice farmers, shop owners, and managers. A few Japanese workers were in the Islands in 1865, but the main Japanese immigration took place around 1885. Eventually they supplanted the Chinese on not only the sugar plantations, but as renters on the rice lands as well (Haraguchi 1987:xiv). In 1898, the workforce of Lā‘ie consisted of 80% Hawaiian, 3% Chinese, and 14% Japanese. By 1910, the workforce was made up of only 33% Hawaiians and 57% Asian, mainly Japanese (Compton 2005:189–190). By 1930, the work force was 11% Hawaiian, 77% Filipino, and 1% Japanese (Compton 2005:270). Each ethnic group generally lived in segregated camps, but the entire population mixed together at schools and in community activities.

Joseph F. Smith, a missionary whose first mission to Hawai‘i was in 1854, visited Lā‘ie in 1915 and remarked on the great changes made by the missionaries since his first visit:

Besides the almost omnipresent automobile, a railroad nearly circumscribes this Island, with vast networks or rails permeating the sugar-cane fields. The old grass-thatched huts have given place to comfortable and pleasant homes and grounds
beautified with evergreens and flowers. Modern furniture, comforts, and conveniences of homes have supplanted the gourds, calabashes and pandanus-leaf mats, on which the natives slept, and the native kapa, which furnished their clothing and the covering of their beds. To a great extent the ancient and dim light of the kukui-nut and the oil lamp has given place to the brilliant illumination of modern electric lights. [Jenson n.d. in Compton 2005:231]

In 1926, the Laie Plantation purchased the Koolau Agricultural Company. This not only doubled the sugarcane acreage but also led to a great expansion in the population. Most of this population expansion came from new sugar plantation workers. A few of the new families were Hawaiian Mormon converts, who had moved to the mainland and set up ethnic enclaves in such places as Alaska, California, and Utah. With a temple close to their native home, they returned to Hawai‘i, moving to Lā‘ie or other parts of O‘ahu (Compton 2005:243–244). The profitability of the small sugar plantations began to decline in the 1920s, and in 1931, the church leased most of its sugarcane lands to the Kahuku Sugar Company, which planted sugarcane there until Kahuku Sugar Company itself shut down in the late 1960s (Compton 2005:273).

The first Latter-day Saints Chapel made of stone, ‘Īhemolele, was built in 1883, but an accidental fire destroyed the original building in 1940 (Figure 9). By the early years of the twentieth century, it was evident that a new, larger church was necessary, and plans were made to build a temple on the Lā‘ie land (Figure 10). On the site of the first chapel, the Latter-day Saints Temple Hale La’a was dedicated in 1919 (Britsch 1998:97, 136).

The history of the BYUH Campus began in 1921, when Latter-day Saints Elder David O. McKay attended a flag-raising devotional service at Lā‘ie Grade School. It was at this ceremony that McKay had the inspiration for an institution of higher learning that would serve an international student body. This concept was realized in 1955, with the school’s groundbreaking in February and its opening in September as the Church College of Hawai‘i. On 26 January 1973, the college’s name was changed to its current title of Brigham Young University-Hawai‘i Campus (BYUH).

The creation of the Polynesian Center in 1963 had not only a financial impact on the Lā‘ie community, but on their cultural make-up as well. As described in a 1968 news article (Char and Char 1988:117), “[i]mmigrants from the South Pacific moved into Laie to go to school, work at the center and . . . attend services at the Mormon Temple.” The Polynesian Cultural Center continues to serve as a major place of employment for the local residents and BYUH students and is a tourist mecca on O‘ahu.

### 3.8 Historic Maps

A series of historic maps illustrates the dramatic changes that occurred within the project area(s) as western commercial interests supplanted the traditional Native Hawaiian way of life. An 1881 map by Covington shows no real development within Lā‘ie Malo‘o Ahupua‘a (Figure 11). However, Lā‘ie Wai Ahupua‘a depicts Kahuku Ranch, the Mormon Mission, and a plantation. The “Plantation Mill” appears to be just mauka of the current north project area. Lā‘ie Point is marked as “Dangerous Entrance,” possibly indicating it as an unsafe place to anchor off-shore. The ahupua‘a of Kaipapa‘u and Hau‘ula have a marker indicating the area is safe to anchor off-shore. A roadway is located near the shoreline.
Figure 9. Photo of the Laie Chapel built in 1883 (Hawai‘i State Archives)
Figure 10. Photo of the Mormon Temple in Lā‘ie ca. 1930 (Hawai‘i State Archives)

LRFI for the BYUH Land Use Reclassification Project, Lā‘ie, Ko‘olaaua, O‘ahu

TMKs: [1] 5-5-006:005, 032, and 035
Figure 11. 1881 Covington map of O‘ahu depicting project area(s)
An 1884 map by Jackson indicates the location of the Mormon settlement and church, as well as a sugar mill (Figure 12). Both sections of the current project area are depicted in sugarcane cultivation. As on the 1881 Covington map, a road travels parallel to the shoreline. It appears there is an elevation, a possible hill, just north of Wailele Stream.

A 1919 U.S. Army War Department fire control map of Kahuku and Kahana quadrangles indicates some major changes for the area (Figure 13). Roadways and more private residences are evident in Lāʻie Wai Ahupuaʻa. There is evidence of a hill north of Wailele Stream. A rail line runs parallel mauka of the roadway and crosses through the current south project area. Buildings are present within the north project area, possibly representing a plantation camp/village; several unimproved roads cross through there as well.

A 1928 Lāʻie Coast aerial photograph (UH SOEST) depicts farmland north of Wailele Stream (Figure 14), while a hill with an access road lies north of Wailele Stream. Between Wailele Stream and Kōloa Stream are several homes. South of Kōloa Stream, several house lots are along the banks.

A U.S. Army War Department terrain map of Lāʻie (1935), Kaipapau (1935), and Kahana (1936) quadrangles is similar to previous maps in indicating more private residences in Lāʻie Wai Ahupuaʻa makai of the Mormon Temple (Figure 15). The rail line also travels mauka of the Mormon Temple toward Kaaoao Gulch. A road has been built on Lāʻie Point. Ditches, pumps, reservoirs, and wells are present in Lāʻie Wai and Lāʻie Maloʻo Ahupuaʻa. Homes can be found along the banks of Kōloa Stream. The rail line runs north to south through the south project area. The roadway parallel to the shoreline is now labeled as Kamehameha Highway.

A 1943 U.S. Army War Department terrain map of Kahuku quadrangles is also similar to the previous maps (Figure 16). The only difference is the presence of more private residences and side streets in Kaipapaʻu Ahupuaʻa.

A 1949 Lāʻie Coast aerial photograph (UH SOEST) indicates the project area vicinity is being heavily cultivated (Figure 17). The hill north of Wailele Stream appears to have an access road, a possible home, and water tank on the plateau. The area makai of Wailele and Kōloa streams appears to be more developed; mauka of the developed area is a smaller hill with heavy vegetation. House lots dot the coastline, although the buildings once present in the north project area appear to be gone by this time.

A 1954 USGS topographic map of the Kahuku quadrangle indicates the rail line is still in use within the south project area (Figure 18).

A 1965 USGS topographic map of Kahuku quadrangle shows the construction of the Church College of Hawaiʻi and the Polynesian Cultural Center in Lāʻie Wai Ahupuaʻa (Figure 19). Private residences, the Mormon Temple, and streets are also present in Lāʻie Wai Ahupuaʻa. The hill north of Wailele Stream is labeled “Gravel Pit.”

A 1971 Lāʻie Coast aerial photograph (UH SOEST) shows the construction of BYUH adjacent to the project area(s) (Figure 20). More private residences dot the coastline of Lāʻie Maloʻo Ahupuaʻa. The hill north of Wailele Stream appears to be partially leveled and primarily composed of sand.
Figure 12. 1884 Jackson map of Lā‘ie Bay depicting the project area(s) within sugarcane fields
Figure 13. U.S. Army War Department fire control map, Kahuku (1919) and Kahana (1936) Quadrangles with project area(s); note rail line traveling through the south project area.
Figure 14. 1928 Lā‘ie Coast Aerial Photograph (UH SOEST) depicting the project area(s)
Figure 15. U.S. Army War Department terrain map, Laie (1935), Kaipapau (1935), and Kahana (1936) quadrangles depicting project area(s)
Figure 16. U.S. Army War Department terrain map, Kahuku (1943) quadrangle with project area(s); note rail line and access roads within and in the vicinity of the project area(s)
Figure 17. 1949 Lā‘ie Coast Aerial Photograph (UH SOEST) with project area(s)
Figure 18. 1954 Kahuku USGS topographic quadrangle with project area(s); note the rail line and multiple access roads within the project area(s) and throughout Lā‘ie Wai Ahupua‘a

Legend
- Project Area
- BYUH Campus

Scale

Base Map: USGS Topographic Map, Kahuku (1954) Quadrangle
Data Sources: CSH

Cultural Surveys Hawai‘i Inc.

LRFI for the BYUH Land Use Reclassification Project, Lā‘ie, Koʻolauloa, O‘ahu
TMKs: [1] 5-5-006:005, 032, and 035
Figure 19. 1965 Kahuku USGS Topographic Quadrangle with project area(s); note the Church College of Hawaii adjacent to the project area(s)
Figure 20. 1971 Lā‘ie Coast Aerial Photograph (UH SOEST) with project area(s); note the hill north of Wailele Stream is now partially leveled and appears to be composed of sand.
A 1977 USGS Orthophotoquad aerial photograph of Kahuku quadrangle shows the BYUH campus has been constructed (Figure 21). More buildings are evident between the BYUH campus and the shoreline. The shoreline is also dense with private residences.
Figure 21. USGS Orthophotoquad Aerial Photograph, Kahuku (1977) Quadrangle with project area(s)
3.9 Previous Archaeological Research

Twentieth century archaeological findings from reconnaissance, inventory surveys, and inadvertent finds are the main source of our knowledge about the archaeological record in Lā‘ie Ahupua‘a. Archaeological work in the last 20 years in this area has not been extensive. Previous archaeological reports are summarized in Table 2, and their locations are depicted on Figure 22. Previously identified historic properties in the vicinity are summarized in Table 3, and their locations are depicted on Figure 23.

3.9.1 McAllister (1933)

In 1930, J. Gilbert McAllister (1933) undertook the first comprehensive archaeological survey of O‘ahu. McAllister did not identify any historic properties in the current project area(s). One was identified in Lā‘ie Malo‘o, and 11 were identified in Lā‘ie Wai. These are described below.

3.9.1.1 McAllister Site 273, House Site of Manuwahi

McAllister describes Site 273 as the “[f]oundation of the house (kahuahale) of Manuwahi, keeper of the god of Malaekahana” and provides the following description:

Only a few large rocks remain by the site of the railroad track, but the site has great importance in the eyes of the natives because of the prominence of the kahuna Manuwahi. About this area is said to have been a rather large Hawaiian settlement, which formerly was level land, but which owing to the removal of flora has formed into dunes. The site was pointed out by a descendant of Manuwahi, Kahiona Apuakehau, a very old Hawaiian living in Laie. The Hawaiians are still proud that the district of Malaekahana was never conquered by Kamehameha I. This is not recorded in Hawaiian history so far as I know. It may have been considered too insignificant a matter, or, as Dr. C. M. Cooke, Jr., suggests, an earlier moi of Oahu may have been unable to wrest Malaekahana from Manuwahi, and he may at present be confused with Kamehameha. The legend collected by Rice tells the story of Kamehameha's sending out Kahalaiu, who was unable to subdue Manuwahi because this powerful kahuna was aided in battle by the gods. After the battle, Kahalaiu joined forces with Manuwahi and is still spoken of by the older natives as the chief who revolted against Kamehameha. Many skeletons were unearthed in plowing the cane fields of this region and in digging the foundations for the beach houses, indicative, some think, of many battles in the region.

After cattle destroyed the vegetation along the shore, the sand formed dunes, greatly changing the topography. In removing sand recently a perpendicular face exposed a small oven (imu) on the former surface level and near it, on the old surface, a small coral file. [McAllister 1933:155–156]

3.9.1.2 McAllister Site 274, Kalanai Ko‘a

McAllister describes Site 274 as “Kalanai Ko‘a” and provides the following description:
### Table 2. Previous archaeological studies within and in the vicinity of the project area(s)

<table>
<thead>
<tr>
<th>Author</th>
<th>Nature of Study</th>
<th>Location of Study</th>
<th>Results (SIHP # 50-80-02)</th>
</tr>
</thead>
<tbody>
<tr>
<td>McAllister 1933</td>
<td>Archaeology of O‘ahu</td>
<td>Island-wide</td>
<td>Site 285, Kaihukuuna Ko‘a</td>
</tr>
<tr>
<td>Connolly 1980</td>
<td>Subsurface reconnaissance survey</td>
<td>Lā‘ie Beach Park</td>
<td>Thirteen test pits and auguring; deemed temporary habitation site</td>
</tr>
<tr>
<td>Yent and Estioko-Griffin 1980</td>
<td>Archaeological investigation</td>
<td>Mālaekahana</td>
<td>Fishing shrine (SIHP # -2801) identified at Kalanai Point; subsurface deposits with fishhook forms, shellfish midden, postholes, rock-lined fire pits, and thick charcoal deposits; dated to AD 1600-1780</td>
</tr>
<tr>
<td>Ahlo and Hommon 1981</td>
<td>Archaeological inventory survey</td>
<td>Kahawainui Stream, Lā‘ie Wai</td>
<td>No significant finds; extensive land disturbance; mentions remnant of Shinto tori and cemetery</td>
</tr>
<tr>
<td>Barrera 1984</td>
<td>Field inspection</td>
<td>Board of Water Supply well located on ridge between Kaaaoao and Ihiihi gulches</td>
<td>No significant finds</td>
</tr>
<tr>
<td>Neller 1984a</td>
<td>Comments on Kahawainui Stream Flood Control Study</td>
<td>Lā‘ie Wai Stream, Lā‘ie Wai</td>
<td>Comments to Ahlo and Hommon (1981) documenting remains of Japanese cemetery and Shinto shrine, plantation camp, a railroad bed, sacred stone of Hauwahine, house ruins</td>
</tr>
<tr>
<td>Neller 1984b</td>
<td>Comments on Kahawainui Stream Flood Control Study including results of archaeological reconnaissance along Lā‘ie Wai Stream</td>
<td>Lā‘ie Wai Stream, Lā‘ie Wai</td>
<td>Supplemental investigations to Ahlo and Hommon (1981) documenting remains of Japanese cemetery and Shinto shrine, plantation camp, a railroad bed, sacred stone of Hauwahine, house ruins</td>
</tr>
<tr>
<td>Bath 1985</td>
<td>Archaeological testing (excavations, auger coring) and mapping</td>
<td>Kahawainui Stream, Lā‘ie Wai</td>
<td>Discusses five surface features: two graveyards, one alignment, one solution cave and one mound; also two “prehistoric” layers</td>
</tr>
<tr>
<td>Author</td>
<td>Nature of Study</td>
<td>Location of Study</td>
<td>Results (SIHP # 50-80-02)</td>
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<tr>
<td>Hammatt 1989</td>
<td>Archaeological reconnaissance</td>
<td>South of Lā‘ie Beach Park</td>
<td>Five auger holes and three shovel test pits; cave found on <em>makai</em> side of property containing scattered fragments of human bone dating to prehistoric or early historic era; historic litter including bottles, metal, and an immature goat skeleton present</td>
</tr>
<tr>
<td>Jensen 1989</td>
<td>Mitigation plan</td>
<td>Kawela Bay</td>
<td>Mitigation involving SIHP # 50-80-01-2899, Kawela Bay Archaeological Area, and SIHP # 50-80-01-2912, Punahoolapa Marsh</td>
</tr>
<tr>
<td>Kennedy 1990</td>
<td>Archaeological subsurface testing</td>
<td>Kahuku Village</td>
<td>Early to mid-twentieth century dump with typical household refuse, shallow irrigation channels related to recent gardening activities in vicinity, fragments of bones in topsoil determined to be small, feral animals</td>
</tr>
<tr>
<td>Hammatt 1991</td>
<td>Archaeological inventory survey</td>
<td>Lā‘ie Wastewater Treatment Plant</td>
<td>No significant finds</td>
</tr>
<tr>
<td>Dunn and Rosendahl 1992</td>
<td>Archaeological inventory survey</td>
<td>Mālaekahana and Lā‘ie Ahupua’a</td>
<td>Survey included the current project area(s); 121 features found in both <em>ahupua‘a</em>; the nearest to the current project area(s) are SIHP #s -4455 (historic foundation) and -4456 (modified outcrop)</td>
</tr>
<tr>
<td>Kennedy and Denham 1992</td>
<td>Data recovery results for excavations</td>
<td>Kakela Beach Park</td>
<td>Midden deposit (SIHP # -4308) intensively excavated; a variety of artifacts and midden recovered in multiple layers; no other cultural layers or burials found</td>
</tr>
<tr>
<td>Kennedy, Denham, and Moore 1992</td>
<td>Archaeological inventory survey and subsurface testing</td>
<td>Kokololio Beach Park</td>
<td>Three burials (SIHP #s -4476, -4477, -4478), 12 possibly historic fire pits (-4479, -4480, -4481, -4482), and cultural materials recovered during AIS; radiocarbon dating indicated habitation between AD 1422 and 1896</td>
</tr>
<tr>
<td>Author</td>
<td>Nature of Study</td>
<td>Location of Study</td>
<td>Results</td>
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<tr>
<td>Kennedy, Moore, Reintsema 1992</td>
<td>Archaeological data recovery</td>
<td>Kokololio Beach Park</td>
<td>Midden, faunal remains, and artifacts recovered during data recovery</td>
</tr>
<tr>
<td>Kennedy 1993</td>
<td>Archaeological monitoring</td>
<td>Kokololio (Kakela) Beach Park</td>
<td>No significant finds</td>
</tr>
<tr>
<td>Moore and Kennedy 1994</td>
<td>Archaeological monitoring</td>
<td>Kokololio Beach Park</td>
<td>Seven new burials (SIHP #s -4830 through -4836)</td>
</tr>
<tr>
<td>Collins 1995</td>
<td>Field visit</td>
<td>Lā‘ie Wastewater Reclamation Facility</td>
<td>Human bones collected in three locales near Nioi Heiau</td>
</tr>
<tr>
<td>Halpern and Rosendahl 1995</td>
<td>Archaeological inventory survey</td>
<td>Lands of Mālaekahana and Lā‘ie</td>
<td>Addendum for Lā‘ie Master Plan project (see Dunn and Rosendahl 1992); additional documentation and revised recommendations for several historic properties identified during the AIS</td>
</tr>
<tr>
<td>Sarvak et al. 1996</td>
<td>Archaeological monitoring</td>
<td>Kokololio Beach Park</td>
<td>Inadvertent human burial find (SIHP # -5369) and several artifacts including a sling stone, two ‘ulu maika, seven pieces of worked stone, one piece of bone cut with a metal implement</td>
</tr>
<tr>
<td>Masterson et al. 1997</td>
<td>Archaeological monitoring</td>
<td>Kapaka to Lā‘ie Ahupua’a</td>
<td>63 features recorded, including 19 human burials; four burials left in situ, while remaining 15 curated at SHPD awaiting reinterment (SIHP #s 50-80-06-4792 through -4798, -5457, and -5458)</td>
</tr>
<tr>
<td>Buffum and Dega 2001</td>
<td>Archaeological inventory survey</td>
<td>South of Polynesian Cultural Center</td>
<td>Seven historic properties including two rock shelters (SIHP #s -5866 and -5867), six overhangs (SIHP # -5868), a historic ‘auwai (SIHP # -5869), a remnant historic bridge foundation (SIHP # -5870), a historic ditch (SIHP # -5871), and a retaining wall (SIHP # -4474, Feature D)</td>
</tr>
<tr>
<td>Author</td>
<td>Nature of Study</td>
<td>Location of Study</td>
<td>Results (SIHP # 50-80-02)</td>
</tr>
<tr>
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</tr>
<tr>
<td>Perzinski and Hammatt 2002</td>
<td>Archaeological inventory survey recorded as an archaeological assessment</td>
<td>Kokololio Bridge</td>
<td>Previous burials and documented cultural layers found in vicinity of Kokololio Stream; no surface traditional Hawaiian sites or features observed; archaeological monitoring recommended</td>
</tr>
<tr>
<td>Monahan 2005</td>
<td>Surface survey with limited subsurface testing</td>
<td>Lāʻie Inn</td>
<td>A historic <em>imu</em></td>
</tr>
<tr>
<td>McElroy 2006</td>
<td>Archaeological inventory survey</td>
<td>TMK: [1] 5-5-002:003 on coast north of Lāʻie Beach Park</td>
<td>No in situ finds; fragmentary human tibia recovered</td>
</tr>
<tr>
<td>Cordy et al. 2008</td>
<td>Archaeological monitoring</td>
<td>Kokololio Bridge</td>
<td>No significant finds</td>
</tr>
<tr>
<td>McElroy 2008</td>
<td>Archaeological monitoring</td>
<td>TMK: [1] 5-5-002:003</td>
<td>Human remains previously discovered at property; cultural layer including a fire pit feature (SIHP # -7030); marine shell, sea urchin, crab, land snail, animal bone, volcanic glass, and charcoal also collected; two isolated bone fragments discovered, including a rib and mandible fragment; <em>ʻiwi</em> reinterred on property</td>
</tr>
</tbody>
</table>
Figure 22. Portion of the 1992 Hauula and 1998 Kahuku USGS topographic quadrangles showing the project area(s) and previous archaeological work in the vicinity.
Table 3. Previously identified historic properties in the vicinity of the project area(s)

<table>
<thead>
<tr>
<th>SIHP # (50-80-02)</th>
<th>Formal Type/ Name</th>
<th>Comment</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>273</td>
<td>House Site (kahuahale)</td>
<td>House site of Manuwahi</td>
<td>McAllister 1933:155–156</td>
</tr>
<tr>
<td>274</td>
<td>Fishing shrine</td>
<td>Named Kalanai Ko’a</td>
<td>McAllister 1933:156</td>
</tr>
<tr>
<td>275</td>
<td>Legendary pond</td>
<td>Named Wai‘āpuka</td>
<td>McAllister 1933:157</td>
</tr>
<tr>
<td>276</td>
<td>Deep crevice</td>
<td>Named Waikuukuu</td>
<td>McAllister 1933:157</td>
</tr>
<tr>
<td>277</td>
<td>Fishpond</td>
<td>Known as Paeo Fishpond</td>
<td>McAllister 1933:157</td>
</tr>
<tr>
<td>278</td>
<td>Legendary place</td>
<td>Named Hanapepe</td>
<td>McAllister 1933:157</td>
</tr>
<tr>
<td>279</td>
<td>Legendary place</td>
<td>Named Manonihokahi (tunnel)</td>
<td>McAllister 1933:157</td>
</tr>
<tr>
<td>280</td>
<td>Pu‘uhonua</td>
<td>Lā‘i’e Ahupua’a</td>
<td>McAllister 1933:157</td>
</tr>
<tr>
<td>281</td>
<td>Heiau</td>
<td>Nioi Heiau</td>
<td>McAllister 1933:157–158</td>
</tr>
<tr>
<td>282</td>
<td>Taro land</td>
<td>Hau‘ula side of the Mormon Temple, formerly a famous taro land known for extremely large fish</td>
<td>McAllister 1933:158</td>
</tr>
<tr>
<td>283</td>
<td>Heiau</td>
<td>Named “Moohekili Heiau”</td>
<td>McAllister 1933:158</td>
</tr>
<tr>
<td>284</td>
<td>Legendary place</td>
<td>Laniloa Point</td>
<td>McAllister 1933:158</td>
</tr>
<tr>
<td>285</td>
<td>Fishing shrine</td>
<td>Kaihukuuna Koa</td>
<td>McAllister 1933:158</td>
</tr>
<tr>
<td>-02801</td>
<td>Fishing shrine</td>
<td>Identified at Kalanai Point; subsurface deposits with fishhook forms, shellfish midden, postholes, rock-lined fire pits, and thick charcoal deposits; dated to AD 1600-1780</td>
<td>Yent and Estioko-Griffin 1980</td>
</tr>
<tr>
<td>-03744</td>
<td>Human burial</td>
<td>Historic property included at least two individuals</td>
<td>Kennedy, Denham, and Moore 1992:1</td>
</tr>
<tr>
<td>-04049</td>
<td>Subsurface cultural deposit</td>
<td>The 15 associated features included post molds, fire pits, and undistinguished pits</td>
<td>Connolly 1980:51</td>
</tr>
<tr>
<td>-04050</td>
<td>Wall</td>
<td>Constructed primarily of coralline slabs and may have functioned as a boundary marker</td>
<td>Connolly 1980:41</td>
</tr>
<tr>
<td>-04088</td>
<td>Platform/mound</td>
<td>Undetermined date; slightly dome-shaped and has been “paved” with small basalt cobbles and pebbles</td>
<td>Jensen 1989:36</td>
</tr>
<tr>
<td>-04089</td>
<td>Cave</td>
<td>Pre-Contact; relatively large, 5 m in width and 2.5 m in height.</td>
<td>Jensen 1989:36</td>
</tr>
<tr>
<td>SIHP # (50-80-02)</td>
<td>Formal Type/Name</td>
<td>Comment</td>
<td>Author</td>
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</tr>
<tr>
<td>-04090</td>
<td>Overhang shelters</td>
<td>Pre-Contact; one basalt core and one basalt flake suggest the possibility additional cultural materials remain buried below the surface</td>
<td>Jensen 1989:38</td>
</tr>
<tr>
<td>-04091</td>
<td>Overhang shelter</td>
<td>Pre-Contact; two basalt flakes, a contemporary glass jar fragment, and a shallow deposit of cultural midden</td>
<td>Jensen 1989:38–39</td>
</tr>
<tr>
<td>-04092</td>
<td>Cave</td>
<td>Pre-Contact; few <em>kukui</em> nut shell fragments scattered about</td>
<td>Jensen 1989:39</td>
</tr>
<tr>
<td>-04093</td>
<td>Irrigation ditch and tunnel</td>
<td>Post-Contact, ca. 1900</td>
<td>Dunn and Rosendahl 1992:A-1</td>
</tr>
<tr>
<td>-04308</td>
<td>Subsurface cultural deposit</td>
<td>Both pre- and post-Contact; midden deposit</td>
<td>Kennedy 1993:2</td>
</tr>
<tr>
<td>-04309</td>
<td>Burial</td>
<td>Minimal data</td>
<td>Kennedy 1993:2</td>
</tr>
<tr>
<td>-04454</td>
<td>Agricultural complex</td>
<td>Post-Contact; 32 agricultural features</td>
<td>Dunn and Rosendahl 1992:A-1</td>
</tr>
<tr>
<td>-04455</td>
<td>Historic structural foundation</td>
<td>A historic building foundation consisting of one room</td>
<td>Dunn and Rosendahl 1992:A-5</td>
</tr>
<tr>
<td>-04456</td>
<td>Modified outcrop</td>
<td>Recent bulldozer push</td>
<td>Dunn, and Rosendahl 1992:A-5</td>
</tr>
<tr>
<td>-04457</td>
<td>Irrigation ditch</td>
<td>Most likely an historic ditch, probably used to slow runoff as it contours the slope</td>
<td>Dunn, and Rosendahl 1992:A-6</td>
</tr>
<tr>
<td>-04458</td>
<td>Agricultural/habitation complex</td>
<td>19 features comprising seven overhangs, three modified crevices, two caves, one cupboard, one retaining wall, four walls, and a paved area; features are within and around a large outcrop of limestone bedrock, consisting of many large crevices, overhangs, and a few caves; two features include skeletal remains of one human burial</td>
<td>Dunn and Rosendahl 1992:A-6 through A-23</td>
</tr>
<tr>
<td>-04459</td>
<td>Irrigation ditch</td>
<td>Historic irrigation: preformed sections of concrete forming the walls and base of the channel</td>
<td>Dunn and Rosendahl 1992:A-23</td>
</tr>
<tr>
<td>SIHP # (50-80-02)</td>
<td>Formal Type/Name</td>
<td>Comment</td>
<td>Author</td>
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<tr>
<td>-04460</td>
<td>Habitation complex (possible <em>heiau</em>)</td>
<td>Pre-Contact; the slope and ridge top terraced with limestone cobbles, incorporating bedrock, and paved with limestone cobbles and waterworn basalt; at least five terraces noted; includes remains of three human burials</td>
<td>Dunn and Rosendahl 1992: A-23</td>
</tr>
<tr>
<td>-04461</td>
<td>Retaining wall</td>
<td>Pre-Contact</td>
<td>Dunn and Rosendahl 1992:A-23</td>
</tr>
<tr>
<td>-04462</td>
<td>Agricultural complex</td>
<td>Pre-Contact</td>
<td>Dunn and Rosendahl 1992:A-23</td>
</tr>
<tr>
<td>-04463</td>
<td>Agricultural complex</td>
<td>Pre- to post-Contact; consists of a wall (Feature A), two ditches (Features. D, G), a soil berm (Feature E), and four retaining walls (Features B, C, F, and H)</td>
<td>Dunn and Rosendahl 1992:A-31 through A-34</td>
</tr>
<tr>
<td>-04464</td>
<td>Habitation complex</td>
<td>Pre-Contact habitation terrace (Feature A) and a mortar and pestle boulder (Feature B)</td>
<td>Dunn and Rosendahl 1992:A-34</td>
</tr>
<tr>
<td>-04465</td>
<td>Historic house site and cemetery</td>
<td>Pre- to early post-Contact; 19 features with a primary function of burial for an estimated 19 individuals</td>
<td>Dunn and Rosendahl 1992:A-36</td>
</tr>
<tr>
<td>-04466</td>
<td>Agricultural complex</td>
<td>Pre-Contact</td>
<td>Dunn and Rosendahl 1992</td>
</tr>
<tr>
<td>-04467</td>
<td>Subsurface cultural deposit</td>
<td>A very dark brown sandy loam with fire-cracked rock and possible ash or fine charcoal content; total extent of deposit unknown</td>
<td>Dunn and Rosendahl 1992:A-39</td>
</tr>
<tr>
<td>-04468</td>
<td>Cemetery</td>
<td>At least five different types of headstones/grave markers in cemetery</td>
<td>Dunn and Rosendahl 1992A-40 to -41</td>
</tr>
<tr>
<td>-04469</td>
<td>Upright stone marker</td>
<td>Upright piece of granite, worked on all four sides and arched on top; a cross carved in the top surface, and at base of northwest and southeast sides two carved circular depressions; appears to be a property marker</td>
<td>Dunn and Rosendahl 1992:A-40</td>
</tr>
<tr>
<td>-04470</td>
<td>Irrigation ditch</td>
<td>Post-Contact ditch segments and tunnels</td>
<td>Dunn and Rosendahl 1992:A-42 and -43</td>
</tr>
<tr>
<td>-04471</td>
<td>Agricultural complex</td>
<td>Pre-Contact: a mound (Feature A) and a paved area (Feature B),</td>
<td>Dunn and Rosendahl 1992:A-42</td>
</tr>
<tr>
<td>SIHP # (50-80-02)</td>
<td>Formal Type/Name</td>
<td>Comment</td>
<td>Author</td>
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</tr>
<tr>
<td>-04472</td>
<td>Overhang shelter</td>
<td>A large, single-chambered cave with two entrances; NE entrance measures approx. 14 m long by 10 m wide; almost vertical drop into cave; included remains of one human individual</td>
<td>Dunn, and Rosendahl 1992:A-44</td>
</tr>
<tr>
<td>-04473</td>
<td>Agricultural complex</td>
<td>Four features consisting of a retaining wall (Feature A), an enclosure (Feature B), and two walls (Features C and D)</td>
<td>Dunn and Rosendahl 1992:A-44 to A-45</td>
</tr>
<tr>
<td>-04474</td>
<td>Retaining Walls</td>
<td>A series of retaining walls built of basalt cobbles and boulders</td>
<td>Dunn, and Rosendahl 1992A-46</td>
</tr>
<tr>
<td>-04474 D</td>
<td>Retaining wall</td>
<td>Historic retaining wall constructed of quarried limestone and basalt cobbles, stacked 4–5 courses high and 6.7 m long</td>
<td>Buffum and Dega 2001:57</td>
</tr>
<tr>
<td>-04475</td>
<td>Retaining wall</td>
<td>Traditional Hawaiian L-shaped retaining wall</td>
<td>Dunn, and Rosendahl 1992A-46</td>
</tr>
<tr>
<td>-04476</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Kennedy et al. 1992</td>
</tr>
<tr>
<td>-04477</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Kennedy et al. 1992</td>
</tr>
<tr>
<td>-04478</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Kennedy et al. 1992</td>
</tr>
<tr>
<td>-04479</td>
<td>Subsurface cultural deposit</td>
<td>Pre-Contact</td>
<td>Kennedy et al. 1992</td>
</tr>
<tr>
<td>-04480</td>
<td>Subsurface cultural deposit</td>
<td>Pre-Contact</td>
<td>Kennedy et al. 1992</td>
</tr>
<tr>
<td>-04481</td>
<td>Subsurface cultural deposit</td>
<td>Pre-Contact</td>
<td>Kennedy et al. 1992</td>
</tr>
<tr>
<td>-04482</td>
<td>Subsurface cultural deposit</td>
<td>Pre-Contact</td>
<td>Kennedy et al. 1992</td>
</tr>
<tr>
<td>-04705</td>
<td>Overhang shelter</td>
<td>Bone fragments from two human burials represented; historic litter observed within cave from entrance to fissure, but no historic materials observed within portion of cave containing burials</td>
<td>Hammatt 1989</td>
</tr>
<tr>
<td>-04797</td>
<td>Subsurface cultural deposit</td>
<td>Pre- to post-Contact</td>
<td>Masterson et al. 1997</td>
</tr>
<tr>
<td>SIHP # (50-80-02)</td>
<td>Formal Type/ Name</td>
<td>Comment</td>
<td>Author</td>
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</tr>
<tr>
<td>-04798</td>
<td>Subsurface cultural deposit</td>
<td>Heavily disturbed, buried cultural deposit with remains of two human burials situated under Kamehameha Hwy between Kokololio Stream and Akakii Stream</td>
<td>Masterson et al. 1997:43-44</td>
</tr>
<tr>
<td>-04830</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Moore and Kennedy 1994</td>
</tr>
<tr>
<td>-04831</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Moore and Kennedy 1994</td>
</tr>
<tr>
<td>-04832</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Moore and Kennedy 1994</td>
</tr>
<tr>
<td>-04833</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Moore and Kennedy 1994</td>
</tr>
<tr>
<td>-04834</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Moore and Kennedy 1994</td>
</tr>
<tr>
<td>-04835</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Moore and Kennedy 1994</td>
</tr>
<tr>
<td>-04836</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Moore and Kennedy 1994</td>
</tr>
<tr>
<td>-05369</td>
<td>Burial</td>
<td>Remains of one individual</td>
<td>Sarvak et al. 1996</td>
</tr>
<tr>
<td>-05457</td>
<td>Subsurface cultural deposit</td>
<td>Buried cultural deposit situated under Kamehameha Hwy along Pounders Beach Park</td>
<td>Masterson et al. 1997:44–45</td>
</tr>
<tr>
<td>-05458</td>
<td>Subsurface cultural deposit</td>
<td>Buried cultural deposit with remains of two human burials situated under Kamehameha Hwy north of Koloa Stream</td>
<td>Masterson et al. 1997:45–46</td>
</tr>
<tr>
<td>-05866</td>
<td>Overhang shelter</td>
<td>Rock shelter identified along eastern facing of a limestone cliff; shelter measured 2.5 m high and included remains of one human burial</td>
<td>Buffum and Dega 2001:19–27</td>
</tr>
<tr>
<td>-05867</td>
<td>Overhang shelter</td>
<td>Rock shelter measuring approx. 2.9 m in width, extending 2.6 m inward, and 0.9 m in height; seven limestone cobbles formed a C-shaped alignment in southwestern portion of rock shelter; fragmented human remains from one individual recovered</td>
<td>Buffum and Dega 2001:27–37</td>
</tr>
<tr>
<td>SIHP # (50-80-02)</td>
<td>Formal Type/ Name</td>
<td>Comment</td>
<td>Author</td>
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</tr>
<tr>
<td>-05868</td>
<td>Overhang shelter complex</td>
<td>Interior dimensions ranged from 1.2 m to 2.0 m from rear of the overhang to dripline; human remains from one individual noted</td>
<td>Buffum and Dega 2001:37–52</td>
</tr>
<tr>
<td>-05868 Fea. 3</td>
<td>Burial</td>
<td>Scattered human remains</td>
<td>Buffum and Dega 2001</td>
</tr>
<tr>
<td>-05869</td>
<td>Irrigation ditch</td>
<td>Historically constructed/ modified 'auwai</td>
<td>Buffum and Dega 2001:52</td>
</tr>
<tr>
<td>-05870</td>
<td>Historic bridge foundation</td>
<td>Historic bridge foundation measuring approx. 7.0 m in width, 15.0 m in length, and 3.0 m in height, constructed with waterworn cobbles and held together by cement</td>
<td>Buffum and Dega 2001:53–54</td>
</tr>
<tr>
<td>-05871</td>
<td>Irrigation ditch</td>
<td>Historic ditch measuring ca. 0.48 km in length</td>
<td>Buffum and Dega 2001:54–56</td>
</tr>
<tr>
<td>-06851</td>
<td>Burial</td>
<td>Human rib and mandible fragment</td>
<td>McElroy 2008:i</td>
</tr>
<tr>
<td>-07030</td>
<td>Subsurface cultural deposit</td>
<td>Cultural layer including one fire pit feature; marine shell, sea urchin, crab, land snail, animal bone, volcanic glass, and charcoal recovered from layer and feature</td>
<td>McElroy 2008:22</td>
</tr>
<tr>
<td>No SIHP #</td>
<td>Lā‘ie Cemetery</td>
<td>Noted to include at least 16 graves</td>
<td>Neller 1984:10, 12–14</td>
</tr>
<tr>
<td>No SIHP #</td>
<td>Plantation camp and cemetery</td>
<td>House site and concrete crypts</td>
<td>Neller 1984:8–10</td>
</tr>
<tr>
<td>No SIHP #</td>
<td>Shinto shrine ruins</td>
<td>Includes remains of a Shinto temple, a Japanese plantation camp, and unmarked Japanese graves</td>
<td>Neller 1984:10–12</td>
</tr>
</tbody>
</table>
Figure 23. Aerial photograph showing project alternatives with project area, LCAs, burials, historic properties, and former railroad tracks (Google Earth 2013)
Site known to Hawaiians as a fishing shrine (ko’a), on the land known as Kalanai, which is now included in the division of Laie but formerly belonged to Malaekahana.

The fish brought to this shrine were the kala and enene. Several flat rocks have been placed on end; one is placed flat. Innumerable remains of fish were found about the stones and on the west side of the rocks.

Skeletal remains were found on the northwest side at an average depth of 2 feet. The body was partially flexed. The upper portion of the body was lying on its back, with the head thrown back so that the mandible was uppermost. The legs had been flexed. The entire length of the burial, from head to knee, was 4 feet. The maximum length of the right femur was 17 inches. The head was lying toward the south, and the lower portion was toward the sea. [McAllister 1933:156]

3.9.1.3 McAllister Site 275, Waiʻāpuka

McAllister describes Site 275 as “Waiapuka, as a pool on the Kahuku site of Laie in Malaekahana, inland from the road in the midst of a cane field” and provides the following description:

Waiapuka is made famous by the legend of Laieikawai (9). Without guidance it is difficult to find, for it is hidden from sight even from the surrounding elevations or from the tops of the highest pines which line the road. The pool is oval in shape, measuring about 30 feet by 60 feet with the water about 10 feet below the level of the surrounding plain. Tides are said to affect the pool. On the Laie side is a small crevice in the rock, which is said to open into the cavern in which Laieikawai was hidden. Natives of the region remember when it was possible to swim through an underwater entrance, and it is said that the chamber could accommodate three or four people. Within the last 25 years silt has filled the pool, and it is no longer possible to enter the hidden chamber. The pool is significant in the minds of the Hawaiians because it was here that Waka hid Laieikawai until she reached maturity. [McAllister 1933:157]

3.9.1.4 McAllister Site 276, Waikuʻukuʻu

McAllister describes Site 276 as “Waikuukuu, Kahuku side of the old Paeo fishpond, about 100 feet up on the low ridge” and provides the following description:

A narrow but deep crevice in the ground with water at the bottom. This is affected by the tides and the depth of the water in Waiapuka may be judged by the height of the water in this opening. The place is now being used for dumping garbage. [McAllister 1933:157]

3.9.1.5 McAllister Site 277, Paeo Fishpond

McAllister describes Site 277 as “Paeo fishpond, mountain side of the bridge on the Kahuku side of Laie” and provides the following description:

This was a large horseshoe-shaped pond that was famous for the size of its fish. It is now dry and overgrown with weeds. On the Kahuku bank is a chalice-shaped
stone about 3 feet high, where Hauwahine, the goddess *(moo)* of the pond, is said to have been frequently seen combing her long black hair. This was a very sacred stone and could not be approached, nor would the old Hawaiians use the pond when a blanket of leaves and other refuse *(aamoo)* covered the water, for it was believed that then Hauwahine was present. When the water was clear, Hauwahine had departed to Kailua. [McAllister 1933:157]

3.9.1.6 McAllister Site 278, Hanapēpē

McAllister describes Site 278 as: “Hanapepe, elevation near the first bridge on the Kahuku side of Laie” and provides the following description: “A portion of this elevation was once a very sacred place where the akua stone, Kamehaikana, was worshiped. This is said to have been a female fish god, and the first fish were brought as an offering” (McAllister 1933:157).

3.9.1.7 McAllister Site 279, Manonihokahi tunnel

McAllister describes Site 278 as a “[t]unnel through which Manonihokahi once passed in going to the sea, until a few years ago in evidence in the settlement of Laie” and provides the following description:

To all appearances Manonihokahi was an ordinary man, living near the mouth of the tunnel, but in reality he was a *kupua* (wizard). He questioned the people who were passing, and when he discovered where they would be fishing alone he would slip through the tunnel in his shark form and kilt them. This continued until the natives became suspicious and his true nature was discovered. Later he was killed and up to the time when the hole was filled a few years ago, the people living in the vicinity could judge the height of the tides by the water in the hole. [McAllister 1933:157]

3.9.1.8 McAllister Site 280, Lā’ie Ahupua’a

McAllister describes Site 280 as the “[l]and of Laie which several of the Hawaiians of Laie told me had formerly been a puuhonua (place of refuge)” and provides the following description: “This statement is partially verified by Pogue, who says: ‘At Laie on Oahu was an old city of refuge. They called the boundary on the Kahana side “Pa-paa-koko” or “Fence that held the blood”’” (McAllister 1933:157).

3.9.1.9 McAllister Site 281, Nioi Heiau

McAllister describes Site 281 as “Nioi heiau, on a small ridge on the mountain side of the Mormon temple, Laie” and provides the following description:

Disturbed coral platforms are all that remain to mark the place where the heiau once stood. The site is heavily covered with Lantana and it is impossible to define the limits of the platforms. There are no walls which may be followed. Native tradition holds that the only wall which surrounded the platforms was removed by the plantation authorities. It is built on the Kahuku side of a coral outcrop; the coral from the ridge has been used for construction. The heiau is said to have been one at which human sacrifices were offered. The results of clearing would probably not justify the expense of such an undertaking. On the Kahana side of the ridge are
several rock shelters which were probably used as the abodes of the kahunas.  
[McAllister 1933:157–158]

3.9.1.10 McAllister Site 282, Taro land

McAllister describes Site 282 as “[t]aro land, Hauula side of the Mormon temple” and provides the following description:

A flat lowland, now drained and planted in cane, formerly a famous taro land. The old Hawaiian name for the region is now lost and it is known as Kanaana, an adaptation of Canaan, the Land of Promise of the Israelites. In with the taro were extremely large fish. One of the old Hawaiians remembers that one day in her childhood, while her parents were gathering taro, as she swam and played in the water she was knocked senseless by a fish. About this taro land the old Hawaiian settlement was located and on the mountain side of the site are the only foundations of a heiau (Site 281) in Laie. [McAllister 1933:158]

3.9.1.11 McAllister Site 283, Mo‘ohekili Heiau

McAllister describes Site 283 as “Moohkili heiau, the site of which is pointed out in the taro patches on the sea side of the Mormon temple” and provides the following description: “The slight elevation of ground, the occasional sound of the drums, and the name, are all the traces that remain, according to the oldest Hawaiians of the district” (McAllister 1933:158).

3.9.1.12 McAllister Site 284, Laniloa Point

McAllister describes Site 284 as “Laniloa Point” and provides the following description:

A narrow strip of land extending into the ocean from Laie, often mentioned in Hawaiian tradition. At one time this point was a lizard spirit (mo‘o) standing upright and threatening all passers with death. It was Kana who destroyed the monster, cutting the head into five pieces and throwing them into the sea, where they form the five small islands just off Malaekahana. The cape was greeted in the chant of Hiakaka when she was on her way to procure Lohiau for Pele.

The small water hole next to the road, which is said never to have been fathomed, is of modern origin. During the quarrying of rock this underground cavern was accidentally opened. It is said that no amount of rock thrown into the pool would fill it. [McAllister 1933:158]

3.9.1.13 McAllister Site 285, Kaihuku‘una Ko‘a

McAllister describes Site 285 as “Kaihukuuna, on the Hauula side of Laniloa Point” and states that a “few stones on the beach are all that remain of the fishing shrine (ko‘a) at which mullet were once offered to the fish god” (McAllister 1933:158).

3.9.2 Later Archaeological Studies

3.9.2.1 Connolly 1980

In 1980, Archaeological Research Associates conducted an intensive subsurface archaeological reconnaissance survey at Lā‘ie Beach Park (Connolly 1980). Thirteen test pits were excavated throughout Lā‘ie Beach Park, and 15 features were recorded. Three of the features were interpreted
as possible post molds, although they could also be root stains. The remaining 12 features consisted of fire pits and other undetermined pits, suggesting temporary habitation use. Fifty-six prehistoric artifacts were found; these included volcanic glass fragments, basalt flakes, adze flakes, a possible sling stone, perforated shells, coral abraders, a basalt file, a micro-adze, a fishhook tab, whetstone fragments, a basalt hammerstone, and a grinding stone. These artifacts indicated temporary habitation as well. Midden found in the test pits included small amounts of fish and mammal, most likely pig.

3.9.2.2 Yent and Estioko-Griffin 1980

In 1980, Martha Yent and Agnes Estioko-Griffin conducted archaeological investigations at Mālaekahana State Recreation Area, Phase I as part of park development. Archaeological work consisted of mapping, testing, excavation, and analysis of the historic properties observed in the Phase I section of the park, which were designated as SIHP # 50-80-02-2801. SIHP # -2801 is defined by Kamehameha Highway on the west, the Pacific Ocean on the east, and Kahawainui Stream on the south. Archaeological features observed consisted of a single surface structure, a fishing shrine at Kalanai Point (previously identified by McAllister as Site 274; see discussion above) and a sequence of subsurface deposits containing fishhook forms, shellfish midden, postholes, rock-lined fire pits, and thick charcoal deposits indicative of extensive cooking activities and the use of *imu* (cooking ovens). Excavations revealed three major cultural occupations dating to the late pre-Contact period (ca. AD 1600-1780). Two human skeletons were also found; one was adjacent to Site 274 and seemed to be contemporaneous with the structure. McAllister (1933:156) had found a skeleton during his examination of the feature in the early 1930s. All three occupations are characterized by an abundance of shellfish midden, suggesting subsistence patterns utilizing the inshore reef of Mālaekahana and Lā‘ie bays (Yent and Estioko-Griffin 1980).

3.9.2.3 Ahlo and Hommon 1981

In 1981, an archaeological reconnaissance survey was conducted for a flood control study of Kahawainui Stream (Ahlo and Hommon 1981). The study was intended to determine the feasibility of Kahawainui Stream and the extent to which the federal government might participate. The study area was split into three groups: Areas A, B, and C. Area A was *makai* of Kamehameha Highway. Area B began *mauka* of Kamehameha Highway and extended to the Cackle Fresh Egg Farm in Lā‘ie Wai Ahupua‘a. Area C began from the Cackle Fresh Egg Farm and extended *mauka*, with a portion traveling south toward the sand quarry behind BYUH. No significant finds were located during the survey. Extensive land disturbance was evident and most likely obliterated any evidence of archaeological historic properties. Graves found in Area B are most likely 100 years old. A *tori* (shrine) was also discovered in Area B.

3.9.2.4 Barrera 1984

From December 1983 to January 1984, archaeological reconnaissance surveys were performed at several locations of existing and proposed Board of Water Supply well sites on the windward coast of O‘ahu. The purpose of the survey was to locate and identify historic properties that might be impacted by construction activities associated with development of the wells. No significant finds were discovered during the survey of the well sites (Barrera 1984).
3.9.2.5 Neller 1984a, b

In 1984, Earl “Buddy” Neller of SHPD commented on the Kahawainui Stream Flood Control Study from the perspective of historic preservation and cultural resource management (Neller 1984a). Neller discussed historic properties that would be jeopardized, the importance of better documentation and research, and the importance of inclusion of historic properties regardless of their condition. Neller produced a second report to follow up based on his concerns (Neller 1984b). However, he now includes the results of an archaeological reconnaissance survey that he performed.

3.9.2.6 Bath 1985

In 1985, archaeological testing and mapping was conducted at Kahawainui Stream in Lā‘ie Wai Ahupua‘a. Investigations included review of historical documents, the excavation of six test units, boring of 12 auger tests, and mapping. Five surface features, including two graveyards, one alignment, one solution cave, one mound, and two pre-Contact layers were discovered (Bath 1985).

3.9.2.7 Hammatt 1989

In 1989, CSH conducted an archaeological reconnaissance of a 2.8-acre parcel in Lā‘ie (Hammatt 1989). Five auger holes were excavated to bedrock to characterize the deposits and the potential for buried cultural layers. No cultural materials or archaeological deposits were encountered in the auger trenches, except fragments of modern trash in the upper layers. In addition, three shovel test pits were also excavated on the mauka portion of the property. No cultural layers or archaeological features were observed. On the makai side of the property, a cave was located. The opening to the cave is approximately 8 ft wide and 3 ft high. The cave floor is composed of roof-fall boulders. The cave extends to a length of approximately 50 ft from the main entrance opening into a chamber 3.5 ft in width. The chamber contained scattered fragments of a human bone and a few water-rounded manuports. Due to the number of fragments within the cave, an estimated two burials of pre-Contact or early post-Contact origin were present. Historic litter including bottles, metal, and the skeleton of an immature goat was also observed in the cave.

3.9.2.8 Jensen 1989

In 1989, an archaeological mitigation plan was developed to address development conditions related to archaeological and historical concerns. The historic properties of concern were SIHP # 50-80-01-2899, Kawela Bay; and SIHP # 50-80-01-2912, Punaho‘olapa Marsh (Jensen 1989). Under the plan, an archaeological monitor would be present during all ground disturbing activities. If any archaeological remains were found during excavation, data would be collected immediately.

3.9.2.9 Kennedy 1990

In 1990, Archaeological Consultants of Hawai‘i, Inc. conducted an archaeological reconnaissance and subsurface testing in Kahuku Village (Kennedy 1990). No human remains or cultural layers were identified. An early to mid-twentieth century dump containing typical household refuse was located within shallow irrigation channels related to recent gardening activity in the vicinity. Fragmentary bones collected were found in the upper regions of topsoil and were determined to be the remains of small, feral animals.
3.9.2.10 Hammatt 1991

In 1991, CSH conducted an archaeological survey of the Lāʻie Sewer Plant (Hammatt 1991). No historic properties were found, and none had been previously recorded in the vicinity.

3.9.2.11 Kennedy et al. 1992a

In 1992, Archaeological Consultants of Hawaiʻi, Inc. conducted an inventory survey and subsurface testing for the proposed Kokololio Beach Park (Kennedy et al. 1992a). During this survey, three human burials were discovered (SIHP #s 50-80-02-4476, -4477, and -4478). In addition, 12 possibly historic fire pits (SIHP #s -4479, -4480, -4481, and -4482) and a variety of cultural materials were discovered. Two cultural deposits were radiocarbon dated with a result of AD 1422-1896. The same year, Archaeological Consultants of Hawaiʻi, Inc. conducted data recovery investigations at Kokololio Beach Park (Kennedy et al. 1992b). Six test units were manually excavated in specified areas, and samples were obtained for radiocarbon analysis from several fire pits. Midden, faunal remains, and artifacts were also recovered during excavations. The results of these excavations indicate temporary occupation in this area as early as the thirteenth century and continuing until the present.

3.9.2.12 Dunn and Rosendahl 1992

A 1992 inventory survey (Dunn and Rosendahl 1992) identified over 121 features in the lands of Mālaekahana and Lāʻie. The survey area included the present project area(s), but no historic properties or features were recorded there. The nearest historic properties to the current project area(s) were a historic concrete habitation foundation (SIHP # -4455) and a modified outcrop (SIHP # -4456), probably the result of a bulldozer push.

3.9.3 Kennedy and Denham 1992; Kennedy 1993; Moore and Kennedy 1994

In 1992, Archaeological Consultants of Hawaiʻi, Inc. conducted data recovery at Kokololio Beach Park (Kennedy and Denham 1992). A midden deposit (SIHP # -4308) was intensively excavated. A variety of artifacts and midden were recovered from a subsurface deposit with multiple layers. The multiple layers were interpreted as evidence of early use (thirteenth century) to present use. Results of further subsurface testing were negative, with no cultural materials or human remains.

The following year, Archaeological Consultants of Hawaiʻi, Inc. conducted archaeological monitoring at Kokololio Beach Park during construction activities to ensure the protection of historic properties encountered during the archaeological survey conducted the prior year (Kennedy 1993). During monitoring, no significant cultural deposits were encountered.

The following year, archaeological monitoring was conducted at Kokololio Beach Park (Moore and Kennedy 1994). Seven previously unidentified burials were inadvertently discovered during construction activities associated with park improvements (SIHP #s -4830 through -4836).

3.9.3.1 Collins 1995

In 1995, SHPD conducted a field visit in the vicinity of Nioi Heiau in an attempt to locate the limestone pavings associated with the heiau (Collins 1995). The area around Nioi Heiau was recently bulldozed, and no structures were located. However, they did find human bone fragments on the surface at four locales in the vicinity of the heiau. At Locale #1, 11 non-bone items including...
coral fragments, a crab claw, and a land snail were collected. Mammal bone and probable human bone was also collected. Identifiable human bone included two fragments of a metacarpal shaft, vertebral spinous process, and femoral and tibial shafts. Locale #2 consisted of two non-bone items, crumbling pieces of mammal bone, and crumbling probable human bone. Identifiable human bone at Locale #2 consisted of six fragments of mandible, five mandibular molars, one mandibular premolar, one mandibular incisor, parts of vertebrae, portions of the right radius and ulna, and a distal shaft portion of an ulna side. Locale #3 consisted of one non-mammal bone. Locale #4 consisted of one non-bone item and crumbling probable human bone. Identifiable human bone found at Locale #4 included portions of the cranial-vault, vertebral articular facet, right hipbone portions, head and neck portion of the right femur, and a portion of the right femoral shaft.

3.9.3.2 Sarvak et al. 1996

In 1996, Archaeological Consultants of the Pacific, Inc. conducted archaeological monitoring at Kokololio Beach Park (Sarvak et al. 1996). During monitoring activities, an inadvertent human burial was identified and assigned SIHP # -5369. Several artifacts were also recovered; these included a sling stone, two ‘ulu maika (game stone), and seven pieces of worked stone. One piece of bone cut with a metal implement was also recovered.

3.9.3.3 Masterson et al. 1997

In 1997, CSH conducted archaeological monitoring for the Kapaka to Lā‘ie water line (Masterson et al. 1997). Archaeological monitoring of a new 14-inch water main throughout Ko‘olauloa District first began in 1992. The water line would travel through the ahupua’a of Kapaka, Mākao, Hau‘ula, Kaipapa‘u, and Lā‘ie. During water line trench excavations, 63 features were recorded. Of the 63 features, 19 were human burials and 44 were archaeologically significant localities. The localities were grouped into nine SIHP #s: 50-80-06-4792 through -4798, 50-80-06-5457, and -5458. Four of the burials were left in situ, while the remaining 15 were curated at SHPD awaiting reinterment.

3.9.3.4 Buffum and Dega 2001

Buffum and Dega (2001) conducted an AIS of 74 acres of land in Lā‘ie just south of the Polynesian Cultural Center. Seven historic properties were recorded; these included “two rock shelters (Sites -5866 and -5867), a series of six overhangs along a limestone cliff facing (Site 5868), an historic ‘auwai (Site 5869), a remnant historic bridge foundation (Site 5870), a historic ditch (Site 5871), and one retaining wall (Site 4474, Fe. D)” (Buffum and Dega 2001).

3.9.3.5 Perzinski and Hammatt 2002

CSH (Perzinski and Hammatt 2002) conducted an archaeological assessment (archaeological inventory survey with negative results) for the proposed replacement of Kokololio Bridge. Previous archaeology indicated cultural layers with associated human burials. During the assessment, a probable modern wall (less than 50 years old) and a drainage canal parallel to Kamehameha Highway were noted. However, no surface traditional Hawaiian features were observed during the assessment.
3.9.3.6 Monahan 2005

In 2005, Chris Monahan conducted a surface survey and limited subsurface testing on a 10.5-acre parcel for the Lā‘ie Inn Redevelopment. The only recorded feature was a historic *imu*.

3.9.3.7 McElroy 2006

In 2006, Garcia and Associates (GANDA) conducted an archaeological inventory survey of TMK: [1] 5-5-002:003 in Lā‘ie Malo‘o Ahupua‘a (McElroy 2006). The previous year, fragmented human remains were found on the property and collected by the Honolulu Police Department; these were later turned over to the SHPD. No surface features were observed during the survey. Ground penetrating radar (GPR) detected a compact layer fill, a root mass, and a large natural stone. A fragmented human tibia was found in the fill mixed with modern debris and was clearly not part of a primary or in situ burial. Because human remains had been previously found on the property, archaeological monitoring was recommended for any ground disturbing activities that would take place during construction.

3.9.3.8 Cordy et al. 2008

In 2008, CSH conducted archaeological monitoring for the Kokololio Bridge project (Cordy et al. 2008). Based on previous research, prior field inspection, and consultation with knowledgeable *kama‘āina* (native born) of the area, there was a moderate to high probability of encountering traditional Hawaiian burials and/or cultural layers in subsurface deposits. However, no significant historic properties were encountered during monitoring.

3.9.3.9 McElroy 2008

In 2008, Garcia and Associates conducted archaeological monitoring (McElroy 2008) at a private property at TMK: [1] 5-5-002:003 where human remains had been previously discovered (see McElroy 2006). Excavations included 36 small trenches for house footings, four longer trenches for a house foundation, seven utility trenches, and a small pit for the reinterment of human remains. A cultural layer including a fire pit feature (SIHP # -7030) was found in the eastern portion of the property. Marine shell, sea urchin, crab, land snail, animal bone, volcanic glass, and charcoal were also collected. Two fragments of human remains were recovered during monitoring; these consisted of a rib and a mandible fragment. Both fragments were isolated finds, unassociated with an intact burial. All the remains were reinterred in a reburial pit on the property. The *ʻiwi* (bones) were wrapped in *kapa* (bark cloth) and placed in *lauhala* (*Pandanus* leaves) baskets. The baskets were then placed at the base of the pit and covered with sand. A quarter and two nails were placed on the baskets to facilitate detection with a metal detector. Pieces of coral were also placed below the ground surface.

3.10 Background Summary

In summary, there have been a number of significant archaeological finds within Lā‘ie Ahupua‘a, although none within the current project area(s). An inventory survey by Dunn and Rosendahl (1992), which included the current project area(s), identified over 100 archaeological features in the lands of Mālaekahana and Lā‘ie. The nearest historic properties to the current project area(s) were a historic concrete habitation foundation (SIHP # -4455) and a modified outcrop (SIHP # -4456), probably the result of a bulldozer push.
Based on a review of historical documents, the project area(s) may have been in taro or sweet potato cultivation during the pre-Contact period. No LCAs were awarded within the current project area(s), although several were awarded immediately adjacent to the north project area; these comprise *kula* lands and house lots. From the mid-1800s to the mid-1900s, the project area(s) was in sugarcane cultivation. Based on a review of historic maps, several structures likely representing a plantation camp or village were present in the north project area during the early twentieth century. A plantation rail line crossed through the south project area during the same period. Although evidence of traditional Hawaiian activity in the project area(s) was most likely removed or destroyed as a result of subsequent land alterations, it is possible historic infrastructure or other plantation era features are present within the project area(s).
Section 4  Field Inspection Results

Fieldwork was conducted on 24 May 2017 by CSH archaeologists Gina Farley, M.A., and David Shideler, M.A., under the general supervision of principal investigator, Hallett Hammatt, Ph.D. Fieldwork included pedestrian inspection of the project area and GPS data collection. A 100%-coverage pedestrian inspection was undertaken for the purpose of historic property identification and documentation. The pedestrian survey was accomplished through systematic sweeps spaced 5 m apart (Figure 24).

4.1.1 Pedestrian Survey Results

The project area comprises two discrete locations at the BYUH campus, referred to in this report as the “north” and “south” project areas. The north project area is in Lā‘ie Wai Ahupua‘a, while the south project area is in Lā‘ie Malo‘o Ahupua‘a. The results of the survey for each project area are described below.

4.1.1.1 North Project Area

The pedestrian survey began at the northern boundary of the north project area and proceeded south/southeast. The north project area is generally bound by a paved campus road and adjacent paved sidewalk on the west and a paved or gravel parking lot on the east. In the center are grass/dirt lawnscape areas. At the north end of the project area, this central lawnscape portion contained a fenced base yard for construction activities currently ongoing at the south end of the north project area (Figure 25). Exotic grasses, Spanish needle (*Bidens pilosa*), castorbean (*Ricinus communis*), and ornamental “Autograph” trees (*Clusia major*) were observed in this area. South/southeast of the base yard, in the central portion of the north project area, was an overgrown, weedy patch with *kiawe* (*Prosopis pallida*) and *koa haole* (*Leucaena leucocephala*) trees (Figure 26). Construction debris and rubbish were observed on the adjacent lawn/dirt area. Approximately 20 m south/southeast of the weedy patch was a lithified sand dune measuring approximately 3 m in height and 10 m in diameter (Figure 28). The top and sides of the dune were carefully inspected by the archaeologists, but no cultural materials or features were observed. Near the south end of the north project area, approximately 30 m southeast of the sand dune, a new one-story campus building is currently under construction (Figure 28). At the time of the field inspection, the area adjacent to the building was being graded/compacted. This is the construction mentioned above, with which the base yard at the north end of the project area is associated. Chinese Violet (*Asystasia gangetica*) was observed along the eastern boundary of this portion of the project area, which was demarcated by a chain link fence.

No historic properties were observed in the north project area. A historic glass bottle was observed on the ground surface just west of the project area; however, it was not documented or collected, as it was outside the project area. The ground surface within the north project area was paved with cement or asphalt, covered with gravel or dirt, or landscaped with grass. Other than the lithified sand dune, the entire area appeared to be graded and/or bulldozed. As mentioned above, one modern building was within the north project area, as was infrastructure associated with modern utilities (e.g., telephone/electrical poles). The locations of former buildings likely associated with an early twentieth century plantation camp/village (see Figure 15 and Figure 16)
Figure 24. Track log of one of two archaeologists’ pedestrian survey tracks in the project area(s)
Figure 25. Photograph taken from the northeast corner of the north project area showing a parking lot (foreground), construction base yard (middle), and campus road (background), view to southwest

Figure 26. Photograph of the central portion of the north project area showing a weedy patch (middle) with adjacent construction debris and rubbish (foreground); note the campus buildings in the background are not within the project area, view to northeast
Figure 27. Photograph of a lithified sand dune in the north project area, view to north

Figure 28. Photograph from the south end of the north project area showing construction of a new one-story campus building and grading of the adjacent area, view to northwest
were investigated, but no evidence of the buildings, nor of any prior land use during traditional or historic times, was noted.

4.1.1.2 South Project Area

The pedestrian survey of the south project area began at the west end and proceeded east. The south project area was bound on the south side by an access road. At the far west end was a wooded area containing large “Octopus” trees (*Schefflera actinophylla*) and coconut palms (*Cocos nucifera*) (Figure 29). Just east of this were dozens of rows of planted papaya trees (*Carica papaya*) (Figure 30). Shells from the invasive *Achatina fulica*, a giant African land snail that feeds on papaya and other vegetation, were observed on the ground in this area. Just east of the papaya fields was a small plant nursery, where small quantities of sugarcane and other plants are being cultivated, and bees are being raised for honey. This was adjacent to a gravel loading area, where delivery trucks can enter through a gate on the access road along the southern boundary of the south project area. Finally, the far eastern end of the south project area consisted of a portion of a baseball diamond and associated metal bleachers, as well as part of the surrounding grass field (Figure 31).

No historic properties were observed in the south project area. The land surface in the south project area consisted of a landscaped athletic field, a paved asphalt road and associated gravel lot, and a large area devoted to papaya cultivation. As with the north project area, the entire south project area appeared to be bulldozed and/or graded. The location of the plantation rail line (see Figure 13, Figure 15, Figure 16, Figure 18) that crossed through the project area roughly north-south was investigated (Figure 32), but no evidence of the former rail line, nor of any prior land use during traditional or historic times, was noted.
Figure 29. Photograph of the wooded area at the east end of the south project area, view to west

Figure 30. Photograph of papaya trees planted in the south project area, view to east
Figure 31. Photograph from the east end of the south project area showing the baseball diamond and surrounding field, view to west

Figure 32. Photograph of the location of the former plantation railroad that crossed through the south project area, view to southeast
Section 5  Summary and Recommendations

5.1 Summary

In general, the project area(s) appears to be graded/bulldozed, and no historic properties were observed during the field inspection. Background research indicated any evidence of traditional Hawaiian activity in the area that once existed was likely destroyed during the plantation era (ca. mid-1800s to mid-1900s), when both the south and north project areas were in sugarcane cultivation; as expected, no evidence of traditional Hawaiian activity was observed during the field inspection. Historic maps indicate that during the earlier twentieth century, several structures likely representing a plantation camp/village existed within the north project area, while a plantation rail line crossed roughly north-south through the south project area. Once again, evidence of this former land use appears to have been removed/destroyed by subsequent land alterations, as no evidence of historic plantation activity was observed during the field inspection. Furthermore, the extensive land alterations makes it unlikely any subsurface evidence of traditional or historic land use remains extant within the project area(s).

5.2 Recommendations

Background research and field inspection indicate evidence of prior land use within the project area(s) has been removed or destroyed by subsequent land alterations. No surface historic properties were observed during the field inspection, and it is unlikely any subsurface archaeological features or deposits remain extant. Therefore, the proposed project will likely have no effect on historic properties, since it is unlikely any historic properties are present. However, early consultation with the SHPD is recommended to determine what, if any, historic preservation requirements are indicated.
Section 6 References Cited

Ahlo, Hamilton M. and Robert Hommon

Armitage, George T. and Henry P. Judd

Beaglehole, J.C. (editor)

Beckwith, Martha

Barrera, William M., Jr.

Bath, Joyce

Bowser, George

Britsch, R. Lanier

Bryan, William A.

Buffum, Amy L. and Michael F. Dega

BYU Archives
Chamberlain, Levi
1826 *Trip Around Oahu by Levin Chamberlain in 1826.* Hawaiian Mission Children’s Society Library, Honolulu.

Char, Tin-Yuke and Wai Jane Char

Clark, John R.K.
2002 *Hawai‘i Place Names, Shores, Beaches, and Surf Sites.* University of Hawai‘i Press, Honolulu.

Cluff, Elder H.H.

Collins, Sara

Compton, Cynthia D. Wooley

Condé, Jesse C. and Gerald M. Best

Connolly, Robert D.
1980 *Intensive Subsurface Archaeological Reconnaissance Survey of the Lā‘ie Beach Park Site (TMK 1-4-14:01, 26; 1-4-16:03), Honolulu, Island of O‘ahu.* Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai‘i.

Cordy, Dominque, Christopher M. Monahan, and Hallett H. Hammatt

Covington, Richard
1881 Hawaiian Government Survey Map. Registered Map 1381. Land Survey Division, Department of Accounting and General Services, Honolulu.

Craig, Robert D.
2004 *Handbook of Polynesian Mythology.* ABC Clio, Santa Barbara, California.

Dagget, R.M.
Dillingham, Benjamin F.

Dorrance, William H. and Francis S. Morgan

Dunn, Amy and Paul H. Rosendahl
1992 *Interim Report: Background, Summary of Findings, and General Significance Assessments and Recommended General Treatments. Archaeological Inventory Survey, Lā‘ie Master Plan Project, Lands of Malaekahana and Lā‘ie, Ko‘olauloa District, Island of Oahu, (TMK 1-5-5-005:, 1-5-5-006:, 1-5-5-007)*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai‘i.

Faris, John Thomson

Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens

Fornander, Abraham

Gardner, Helen R. and Alice Gardner (compilers)

Google Earth

Halpern, Michael and Paul H. Rosendahl

Hammatt, Hallett H.


Handy, E.S. Craighill

---

LRFI for the BYUH Land Use Reclassification Project, Lā‘ie, Ko‘olauloa, O‘ahu

TMKs: [1] 5-5-006:005, 032, and 035
Handy, E.S. Craighill and Elizabeth Green Handy

Haraguchi, Karol

Hawai‘i State Archives
1883 Photograph of Laie Chapel. Hawai‘i State Archives, Honolulu.
1930 Photograph of Mormon Temple in Lā‘ie. Hawai‘i State Archives, Honolulu.

Hawai‘i TMK Service

Hawaiian Gazette
1876 Article. Hawaiian Gazette, 4 October:3:2.

Hungerford, John B.

Jackson, George E.G.
1884 Map of Lā‘ie Bay. Registered Map 1347. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Jensen, Peter M.

Juvik, Sonia P. and James O. Juvik (editors)

Kalākaua, David

Kame‘eleihiwa, Lilikalā

Kennedy, Joseph
Kennedy, Joseph and Tim Denham  

Kennedy, Joseph, Tim Denham, and James Moore  

Kennedy, Joseph, James Moore, and Laura Reintsema  

Korn, Alfons L.  
1958 *The Victorian Visitors.* University of Hawaii Press, Honolulu.

Kuykendall, R.S.  

Maly, Kepā and Paul H Rosendahl  
1995 *Cultural Assessment Study Lā‘ie Wastewater Reclamation Facility (Lwrf) Project. Cultural Significance of “Nioi Heiau” and Other Sites Within its Immediately Adjoining Lands Vol. I. Ethnographic Study for Amended Supplemental EIS (TMK 1-5-5-005:, 1-5-5-006).* Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai‘i.

Masterson, Ian, Melody Heidel, Leilani Pyle, David Shideler, and Hallett H. Hammatt  
1997 *Archaeological Monitoring Report for the Kapaka to Lā‘ie Waterline TMK 1-5-3-012, 1-5-3-013, 1-5-3-014, 1-5-3-016, 1-5-4-001, 1-5-4-003, 1-5-4-004, 1-5-4-009, 1-5-4-010, 1-5-4-011, 1-5-4-012, 1-5-4-018, 1-5-5-001, 1-5-5-002.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

McAllister, J. Gilbert  

McElroy, Windy  

Monahan, Christopher M.

Moore, James R. and Joseph Kennedy

Nakuina, M.

Neal, Marie C.

Neller, Earl
1984a Comments on the Kahawaiini Stream Flood Control Study from the Perspective of Historic Preservation and Cultural Resources Management. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai‘i.
1984b Comments on the Kahawaiini Stream Flood Control Study's Archaeological Reconnaissance Survey, Including the Results of an Archaeological Reconnaissance Survey along Lā‘iewai Stream, Lā‘ie, O‘ahu (TMK 1-5-5-005:, 1-5-5-009). Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai‘i.

Paki, Pilahi

Perzinski, David and Hallett H. Hammatt

Pukui, Mary Kawena

Pukui, Mary Kawena and Samuel H. Elbert

Pukui, Mary Kawena, Samuel H. Elbert, and Esther T. Mookini
Pukui, Mary K. and Alfons L. Korn

Raphaelson, Rayna

Rice, William Hyde

Sarvak, Pat, James R. Moore, and Joseph Kennedy

Schmitt, Robert C.

Schuyler, Jas. D. and G. F. Allardt

Sterling, Elspeth P. and Catherine C. Summers (editors)

Thayer, Wade Warren
1934 Report of Examiner: In the Matter of the Application of A.N. Campbell, et al. Trustees of the Estate of James Campbell, Deceased, for Registration of Title to Land in Koolauloa, Oahu. Land Court #1095. In Hawai‘i (Terr.) Land Court, Land Court Application Number 1095. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Titcomb, Margaret

UH SOEST


**U.S. Army War Department**

1919 U.S. Army War Department fire control map, Kahuku quadrangle. USGS Information Services, Denver, Colorado.

1935 U.S. Army War Department terrain map, Laie and Kaipapau quadrangles. USGS Information Services, Denver, Colorado.

1936 U.S. Army War Department fire control map, Kahana quadrangle. USGS Information Services, Denver, Colorado.

1936 U.S. Army War Department terrain map, Kahana quadrangle. USGS Information Services, Denver, Colorado.

1943 U.S. Army War Department terrain map, Kahuku quadrangle. USGS Information Services, Denver, Colorado.

**USDA (U.S. Department of Agriculture)**


**USGS (U.S. Geological Survey)**

1954 Kahuku USGS 7.5-minute topographic quadrangle. USGS Information Services, Denver, Colorado.

1965 Kahuku USGS 7.5-minute topographic quadrangle. USGS Information Services, Denver, Colorado.


1992 Hauula USGS 7.5-minute topographic quadrangle. USGS Information Services, Denver, Colorado.

1998 Kahuku USGS 7.5-minute topographic quadrangle. USGS Information Services, Denver, Colorado.

**Vancouver, George**


**Wilcox, Barbara S.**


**Whitney, Henry Martyn**


**Waihona ‘Āina**


**Yent, Martha and Agnes E. Estioko-Griffin**

1980 *Archaeological Investigations at Malaekahana (50-80-02-2801), Windward Oahu*. Department of Land and Natural Resources, Division of State Parks, Recreation and Historic Sites, Honolulu.
Appendix A  LCA Documentation

LCA 3731 to Ihupuu (ʻĀpana 4)
LCA 3773 to Amaka (ʻĀpana 5, 6)
LCA 4270 to Keao (ʻĀpana 1, 5–7)
LCA 4283 to Koula (ʻĀpana 2)
LCA 4333 to Kahoukua (ʻĀpana 2, 3)
LCA 10928 to Ulukou (‘Āpana 2)

LRFI for the BYUH Land Use Reclassification Project, Lā'ie, Ko‘olauloa, O‘ahu

TMKs: [1] 5-5-006:005, 032, and 035
F.9 DPP EA Determination Letter
May 18, 2017

Kathy Sokugawa, Acting Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Plan Review Use for Planned 14.9-Acre Campus Expansion
Brigham Young University – Hawai‘i
Lā‘ie, Ko‘olau Loa, O‘ahu
Tax Map Key (1)

Dear Ms. Sokugawa:

On behalf of Brigham Young University – Hawai‘i (BYU-H) and Hawaii Reserves Inc. (HRI), we want to thank you and your staff for taking time to meet on April 25, 2017 to discuss plans for renovating and expanding the BYU-H campus. In follow-up to our meeting, we are writing to request a determination from the Department of Planning and Permitting (DPP) on whether a Hawai‘i Revised Statutes (HRS), Chapter 343 Environmental Assessment (EA) is required for the BYU-H planned 14.9-acre campus expansion. The expansion area is located within the BYU-H 1996 Plan Review Use (PRU) boundary and State Land Use (SLU) Agricultural District. HRI has retained R. M. Towill Corporation to help prepare a SLU District Boundary Amendment application to change the 14.9-acre expansion area from the Agricultural to Urban District, and a new PRU application to address the planned expansion and to update information about existing campus facilities covered by modifications over the years to the 1996 PRU.

The campus expansion will support BYU-H’s planned growth in its academic mission and student enrollment and help maintain the University’s long-term viability within the community. The purpose of the campus expansion is to:

- Increase the University’s academic offerings to more students.
- Accommodate planned increase in I-Work students (International Work Opportunity Returnability Kuleana program), which is a core mission of BYU-H.
- Increase the percentage of enrolled students living on campus from approximately 65% to 90-95%.
- Ensure the students are living in housing conducive to academic achievement.
- Provide a small measure of relief for housing demand in Lā‘ie by relocating off-campus students onto campus.

The expansion area is illustrated on the enclosed State Land Use exhibit. Five new single-student dormitory buildings are planned within an approximately 10-acre portion of the expansion area on the south side of campus, with three dormitory buildings to be completed within 5 years and two additional dormitory buildings to be completed within 10 years. The general design principle guiding the single student housing project is to maintain the low-density, low-rise open-space character of the BYU-H campus by minimizing the building footprint and providing multiple floors. Each building will be a double-loaded four-story structure with capacity for approximately 300 students. Three new dormitories will accommodate an increase of 900 on-campus students, including 500 new students and 400 students currently living off-campus. The expansion will accommodate the planned increase in total enrollment from 2,700 to 3,200 students over the next five years. The planned increase in enrollment is consistent with the Ko‘olau Loa Sustainable Communities Plan (SCP) policies for BYU-H.

On the west side of campus, the approximately 4.9-acre expansion area will bring the existing utility building and road, and planned parking lots and detention pond into conformance with HRS Chapter 205 and the City and County of Honolulu (CCH) Land Use Ordinance.

The 14.9-acre expansion area is located within the BYU-H PRU boundary established by the 1996 PRU (Resolution 96-321). Resolution 96-321 approves the PRU to “expand, renovate and support academic and living facilities for students, faculty and staff of the Brigham Young University”. The expansion area is located within the SLU Agricultural District. In conformance with HRS Section 205-4.5, the proposed student housing is not an allowed use within the SLU Agricultural District, therefore an amendment is required to expand the SLU Urban District boundary to include the project area. The expansion area is located within the CCH Ag-1 (Agricultural-Restricted) zoning district. Universities are an allowable use within all CCH zoning districts, subject to PRU approval, therefore a zone change is not required for the planned expansion.

The planned expansion does not involve actions identified in HRS Section 343-5 that trigger requirements for the preparation of an EA. The project is not located within the CCH Special Management Area. Within the Ag-1 zoning district, the planned expansion improvements, including the student dormitory buildings, existing utility building, parking lots, internal roads, driveways, walkways, and hardscape will cover approximately 7.5 acres of area, which is less than the project size trigger of 10 acres for a significant zone change within the Ko‘olau Loa SCP area that would require the preparation of an EA. The planned 14.9-acre expansion is in conformance with Ko‘olau Loa SCP land use policies and is within an area designated in the SCP for institutional development. The project would not result in a major social, environmental or policy impact or major cumulative impacts due to a series of applications in the same area.
Based on this information, we respectfully request your written determination regarding requirements for the preparation of an EA for the planned campus expansion. Should you have any questions or require additional information, please contact me at (808) 842-1133, or by email at JimN@rmtoowell.com.

Very Truly Yours,

[Signature]
Jim Niermann, AICP, LEED AP
Planning Project Coordinator

JAN:
K:\phlo\2017-08 BYU-U Expansion\DOCS\CORRESPONDENCE\2017-05-18_TO_DOF BYU-U PRU EA DETERMINATION (1).docx

Enclosure

cc: Mr. Eric Beaver, Hawai‘i Reserves, Inc.
Mr. Eric Conrad, Brigham Young University, Hawaii
July 13, 2017

Mr. Jim Niermann, AICP, LEED AP
Planning Project Coordinator
R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819-3494

Dear Mr. Niermann:

In response to your letter dated May 18, 2017, requesting a written determination as to whether the planned Brigham Young University – Hawaii (BYU-H) campus expansion requires the preparation of an Environmental Assessment (EA), the Department of Planning and Permitting (DPP) has determined that the preparation of an EA is not required.

However, as part of your State Land Use District Boundary Amendment (SLUDBA) application, the DPP will require submittal of a flood study for the Wailele Stream that abuts the site of the proposed five new dormitory buildings.

We also require a listing of all uses within or partially within the State Land Use Agricultural District as outlined on the State Land Use exhibit attached with your May 18, 2017 letter, along with a description of their relationship to the BYU-H campus. For example, there is a LP storage tank(s) and a trucking company in the Agricultural District. Your response to this request should describe whether the existing uses are nonconforming, permitted, or unauthorized with respect to the State Land Use Law, Chapter 205, Hawaii Revised Statutes.

For your convenience, the DPP Planning Division Master Application Form to petition for a SLUDBA and a DPP Land Use Permits Division Master Application Form for a new Plan Review Use (PRU) permit, are enclosed. Once this process is close to completion, i.e., a favorable recommendation by the Planning Commission, you may submit the application for a new PRU along with a new campus master plan. This will allow for expedited entitlements within the timeframe requirements of each approval process.
Should you have any questions concerning the SLUDBA procedures, please contact Franz Krantz, at 768-8046. Questions regarding the PRU process, please contact Katia Balassiano, at 768-8011.

Very truly yours,

Kathy K. Sokugawa
Acting Director

Enclosures – Planning Division Master Application Form and Instructions
Land Use Permits Division Master Application Form and PRU Instructions
F.10  BYU-H Zone A Base Flood Elevation Determination
Flood Study

BRIGHAM YOUNG UNIVERSITY HAWAII
ZONE A
BASE FLOOD ELEVATION DETERMINATION
Laie, Oahu, Hawaii

December 8, 2016
ZONE A FLOOD DETERMINATION

AREA OF STUDY: BRIGHAM YOUNG UNIVERSITY HAWAII

LOCATION: Laie, Oahu, Hawaii

TAX MAP KEY: (1) 5-5-06: 05

OWNER: Brigham Young University Hawaii
55-220 Kulanui Street
Laie, Hawaii 96762

ENGINEERING CONSULTANT: R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819
Phone: (808) 842-1133

DATE: December 7, 2016

This work was prepared by me or under my supervision.

Signature

Exp. Date 4/30/18
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| Figure 2 | 100-Year Flood Boundary Map |
| Figure 3 | Hydraulic Analysis – Base Flood Elevation Determination in Zone A |

# APPENDICIES

| Appendix A | Hydraulic Analysis to Determine Peak Flow – Wailele Stream Lateral Weir Analysis at Left Overbank |
| Appendix B | Flood Analysis for BYU Hawaii – Zone A |
1. **BACKGROUND AND PURPOSE**

The area of study is the Brigham Young University-Hawaii (BYU Hawaii) campus, TMK: (1) 5-5-06:05, in Laie on the island of Oahu (see Figure 1). Portions of the campus fall within the Federal Emergency Management Agency (FEMA) Flood Zone A. According to the FEMA flood hazard zone definition, Zone A represents shallow flooding, it is approximate only, no detailed hydraulic analysis was performed, and no base flood elevations were determined. For the existing or proposed structures within Zone A, building permit review by the City and County of Honolulu will be subject to determination of the regulatory flood elevations.

The purpose of this study is to determine the base flood elevations within the BYU Hawaii campus within the FEMA Zone A.

2. **SITE CONDITIONS**

2.1. **Site Characteristics**

The existing conditions within the study area (student housing and the campus’ academic oval) consist of both impervious and pervious ground cover. The pavement and large roof areas are balanced by large amount of landscaping. This includes ten student housing buildings, several academic buildings, maintenance facilities, asphalt parking lots, tennis courts, roadways, and concrete walkways. Pervious areas include small and large landscaped areas within the building courtyards and walkways. The terrain is mostly flat and generally slopes to the north and east at slopes ranging between 1% to 2%.

2.2. **Runoff Patterns**

The existing runoff with the campus generally sheets flows to the north and east. Runoff tends to collect in isolated depressions scattered throughout the site. During large storm events, runoff finds its way north to the Laie Town, either via the academic oval and front fields or via the service road mauka of the Polynesian Cultural Center.

2.3. **Wailele Stream Overflows**

The flood Zone A is shown on Figure 2, the November 5, 2014 Flood Insurance Rate Map. Because the Wailele Stream channel banks that have been artificially built up long ago, FEMA designated the Zone A due to their new policy on levees (PM34 and PM43) assuming runoff would spill over into the BYU Hawaii campus from the stream channel just south of the existing campus.

Zone AE (Left Overbank) results from the Hydrologic Engineering Center’s River Analysis System (HEC-RAS) modeling according to FEMA’s original levee policy, but with 100-percent of the Wailele tributary peak flow assigned to overtop the left bank.

The Wailele Flood Risk Management Reduction Project is currently being undertaken by the U.S. Army Corps of Engineers to stop overflows from Wailele Stream from reaching the BYU Hawaii Campus and Laie Town. Proposed improvements being studied include an overflow channel at Wailele Stream eastward to a new culvert crossing at Kamehameha Highway. Once a plan is implemented, it is anticipated the base flood elevations within
Laie Town and the BYU Hawaii Campus will be significantly reduced and the AE and A flood zones could be eliminated. Identification of the Tentatively Selected Plan (TSP) concluded November 2015. As of November 2016, an analysis of a locally preferred plan alternative is being conducted to look at modifying the TSP to accommodate additional runoff from the south portion of the BYU Hawaii campus and its mauka tributary areas.

3. FLOOD ANALYSIS

The peak flow quantity for the hydraulic analysis was calculated by the lateral flow (weir) analysis of Wailele Stream at left overbank (see Appendix A), similar to the FEMA analysis and the Final Drainage Report for the Brigham Young University Hawaii Single Student Housing, Multi-Use Building and Married Student Housing (2012/FD-2), revision dated August 5, 2014, by R. M. Towill Corporation.

4. RESULTS AND CONCLUSION

The results show the base flood elevations ranging from approximately 10.4-feet to 15.1-feet within the Zone A (see Figure 3 and Appendix B).

5. REFERENCES


APPENDIX A

HYDRAULIC ANALYSIS TO DETERMINE PEAK FLOW
WAILELE STREAM LATERAL WEIR ANALYSIS AT LEFT OVERBANK
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APPENDIX B

FLOOD ANALYSIS FOR BYU HAWAI'I
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HYDRAULIC ANALYSIS - BASE FLOOD ELEVATION DETERMINATION IN ZONE A

1" = 120'

120'  80'  0  120'  240'

ACADEMIC OVAL

FLOOD ZONE AH

WATER SURFACE ELEVATION = 10.42'

ALOHA CENTER

BALLROOM

CAFETERIA

WATER SURFACE ELEVATION = 14.12'

WATER SURFACE ELEVATION = 16.48'

FLOOD ZONE A

WATER SURFACE ELEVATION = 18.00'

ACADEMIC OVAL

MOCKAY BUILDING

WATER SURFACE ELEVATION = 14.12'

WATER SURFACE ELEVATION = 15.17'

WATER SURFACE ELEVATION = 16.48'

WATER SURFACE ELEVATION = 18.00'

ACADEMIC OVAL

FLOOD ZONE AH

CAMPUS ACTIVITIES CENTER

GYM

POLYNESIAN CULTURAL CENTER

HITI-RAS CROSS SECTION