UNIVERSITY OF THE NATIONS, KONA, INC.
2020 MASTER PLAN UPDATE

DRAFT ENVIRONMENTAL IMPACT STATEMENT
Volume II: Appendices

APPLICANT:

University of the Nations, Kona, Inc.
75-5851 Kuakini Highway
Kailua-Kona, HI 96740

PREPARED BY:

111 S. King Street, Suite 170
Honolulu, Hawai‘i 96813

FEBRUARY 2024

UNIVERSITY OF THE NATIONS, KONA, INC.
2020 MASTER PLAN UPDATE

Kailua-Kona, Island of Hawai‘i, Hawai‘i

TMK (3) 7-5-010:085 and (3) 7-5-017:006

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This environmental document was prepared pursuant to Hawai‘i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Hawai‘i Administration Rules, Chapter 11-200.1, Environmental Impact Statement Rules.

FEBRUARY 2024

Appendix A

Findings of Fact, Conclusions of Law, and Decision and Order for a State Land Use District Boundary Amendment Docket No. A02-737, August 2003

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of	)	DOCKET NO. A02-737
	)	
U of N BENCORP	)	FINDINGS OF FACT, CONCLUSIONS
	)	OF LAW, AND DECISION AND
To Amend the Agricultural Land Use	)	ORDER FOR A STATE LAND USE
District to the Urban Land Use District	)	DISTRICT BOUNDARY
for approximately 62 acres, Tax Map Key	)	AMENDMENT; EXHIBIT A
Nos.: (3) 7-5-10:85 and 7-5-17:06 situate	)	
at Waiaha 1st, North Kona, Island, County	)	
and State of Hawaii.	)	
	)	

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

AUG 8 2003 by
Date Executive Officer

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER
FOR A STATE LAND USE DISTRICT BOUNDARY AMENDMENT

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of	)	DOCKET NO. A02-737
	)	
U of N BENCORP	)	FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER FOR A STATE LAND USE DISTRICT BOUNDARY AMENDMENT; EXHIBIT A
	)	
To Amend the Agricultural Land Use District to the Urban Land Use District for approximately 62 acres, Tax Map Key Nos.: (3) 7-5-10:85 and 7-5-17:06 situate at Waiaha 1st, North Kona, Island, County and State of Hawaii.	)	
_____	)	

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER
FOR A STATE LAND USE DISTRICT BOUNDARY AMENDMENT

U of N Bencorp, a Hawaii non-profit corporation ("Petitioner" or "Bencorp") submitted a State Land Use Boundary Amendment Application on November 21, 2003 ("Petition"), and an Amended State Land use Boundary Amendment Application on December 5, 2003 ("Amended Petition"), pursuant to Sections 205-3.1(c) and 205-4, Hawaii Revised Statutes ("HRS"), and Chapter 15-15, Hawaii Administrative Rules ("HAR"), to amend the State Land Use District boundary by reclassifying approximately 62 acres of land situate at Waiaha 1st, Kailua-Kona, District of North Kona, County and State of Hawaii, and designated by Tax Map Key Nos.:(3) 7-5-10:85 and 7-5-17:06 ("Property" or "Petition Area"), from the Agricultural Land Use District to the Urban Land Use District to allow for the development of the Hualalai Village condominiums, a multi-function Cultural Center, and a five-acre Educational Facility ("Project").

The Land Use Commission ("Commission"), having considered the entire record on this matter, hereby makes the following Findings of Fact, Conclusions of Law and Decision and Order.

FINDINGS OF FACT

PROCEDURAL MATTERS

1. On November 21, 2002, Petitioner filed the Petition proposing the development of the Project.

2. On December 5, 2002, Commission staff transmitted its comments upon review of the Petition, which deemed the Petition incomplete.

3. On December 5, 2002, Petitioner filed the Amended Petition.

4. On December 6, 2002, the Commission received a facsimile transmission from Petitioner of a letter of intent to intervene from Mr. Lunakanawai Hauanio.

5. On December 20, 2002, Petitioner provided comments and clarification pursuant to the Commission staff's review of the Amended Petition.

6. On December 30, 2002, Commission staff deemed the Amended Petition as a proper filing pursuant to Section15-15-50, HAR.

7. On January 5, 2003, the Notice of Hearing was published in the Star Bulletin, and West Hawaii Today. The deadline for timely petition to intervene was January 21, 2003.

8. On January 21, 2003, Petitioner filed its witness list and exhibit list identifying Exhibits 1 to 14.

9. On January 21, 2003, the County of Hawaii Planning Department ("County") filed its witness list and its Statement of Position in Support of the Petition, and the State of Hawaii Office of Planning ("OP") filed its Statement of Position in Support of the Project.

10. On February 20, 2003, OP filed its witness list and exhibit list, and Exhibits 1 and 2.

11. On February 21, 2003, the Commission conducted a field trip to the Petition Area.

12. On February 21, 2003, a prehearing conference was held in Kona. Petitioner filed Exhibit 5, the archaeological inventory survey and Exhibit 15, addendum to its Final Traffic Impact Analysis Report.

13. On February 26, 2003, the County filed its exhibit list and Exhibits 1 to 3; OP filed its first amended witness list.

14. On February 27, 2003, Petitioner filed its second amended witness list and second amended exhibit list, and Exhibits 15 to 25.

15. On March 5 and 6, 2003, the Commission conducted a hearing on the Amended Petition in Kona.

16. On March 5, 2003, the Commission received public witness testimony from Mary Kamahele Boyd, Lunakanawai Hauanio, and Mikahala Roy. The Commission did not receive Mr. Hauanio's written petition to intervene pursuant to Section 15-15-52, HAR, and his verbal request for intervention pursuant to Land Use Commission Rule 15-15-34, HAR, was denied by the Commission on March 5, 2003.

17. On May 16, 2003, Petitioner filed its fourth amended witness list and third and fourth amended exhibit lists, and Exhibits 26 to 35.

18. On May 19, 2003, the County filed its first amended witness list and first amended exhibit list, and Exhibits 4 and 5.

19. On May 22, 2003, the Commission continued the hearings for the subject docket in Kona.

20. On May 22, 2003, the Commission received public witness testimony from Richard T. Bell, Kathryn Ward-Smith, Curtis Tyler, Dr. William H. Wilson, and Holo Hoopai.

21. On May 22, 2003, Petitioner filed its Exhibit 36.

22. On May 22, 2003, OP filed its second amended witness list and second amended exhibit list, and Exhibit 4.

23. On May 23, 2003, Petitioner filed its Exhibits 37 and 38.

24. On May 23, 2003, OP filed its Exhibit 5.

25. On June 9, 2003, the County filed its second amended witness list and Exhibits 6 and 7.

DESCRIPTION OF THE PROPERTY

26. The Property is located on the west coast of the Island of Hawaii, approximately one mile southeast of the town center of Kailua-Kona, on the lower western slopes of Mount Hualalai at an elevation ranging from approximately 100 to 325 feet.

27. The Property is bordered by Kuakini Highway on the west, Queen Ka`ahumanu (Queen K) Highway and Hualalai Road on the east, the University of the Nations-Kona ("University") campus on the north and the Kona Hillcrest subdivision on the south.

28. The Property is generally gently sloped, with steeper slopes (approaching 25 percent) on the upper mauka side just below Hualalai Road.

29. The Property comprises approximately 62 acres, and two tax map parcels: TMKs (3) 7-5-10:85 and 7-5-17:6**.**

Soils and Geology

30. The Property comprises two soil groups. The Soil Conservation Service's *Soil Survey of the Island of Hawaii, State of Hawaii*, locates a narrow band of Honuaulu extremely stony silty clay loam ("HVD") along the mauka border of the property. The Honuaulu series consists of well-drained silty clay loams that formed in volcanic ash. The HVD soil subtype is generally found with stones covering 3-15% of the area and with slopes of 12-20%.

Its typical use is for growing of coffee or macadamia nuts (at higher elevations than the Property), or pasturage.

31. The vast majority of the Property is Punalu`u extremely rocky peat ("rPYD") with slopes of 6-20%. The Punalu`u Series consists of well-drained, thin organic soils over pahoehoe lava bedrock. Soils of this type are used for pasturage. The peat is rapidly permeable; the underlying lava is very slowly permeable, with runoff slow and erosion hazard slight.

32. The ground surface is very broken with heaps of sharp broken lava rock appearing more like a`a than the smooth pahoehoe. These fragments have been piled, apparently by hand, to facilitate cattle grazing. The potential for agricultural productivity is low.

Agricultural/ALISH/Land Study Bureau Classification

33. The agricultural potential for the Property is generally poor because of the shallow, rocky soil type. None of the Property is classified as within "agricultural lands of importance to the State of Hawaii" (ALISH). The ALISH classification system contains four categories: prime, unique, other important agricultural lands, and unrated. The Property is classified as unrated. The nearest rated ALISH parcel is roughly three-quarters of a mile south.

34. The Land Study Bureau map classification for the Property is "E", or very poorly suited for agricultural productivity.

Climate

35. The climate of the Island of Hawaii is characterized by remarkable differences in rainfall over short distances, mild temperatures, persistent northeasterly trade winds, and distinct climatic regimes in locales sheltered from the prevailing winds. The Property is on the leeward side of the Big Island, at a low elevation, and thus receives relatively little precipitation.

36. Yearly rainfall at the nearest weather station (Holualoa Beach) averages around 28 inches, and is spread relatively evenly throughout the year. At this station August, the month of greatest average precipitation, averages 3.33 inches and December, the month with

least rainfall, 1.6 inches. The property is on the 750-mm isohyet, equal to approximately 29.5 inches per year.

37. Temperatures are similarly fairly constant, with the daily highs averaging between 80 and 85 degrees (with the highest temperatures from August to October), and the lowest temperatures ranging from 64 to 70 degrees Fahrenheit, with the coolest temperatures in January and February.

38. The local daily solar heating and nightly cooling results in ocean breezes flowing up the slopes in the daytime and cooling mountain breezes blowing toward the ocean in the evening. The site plan orients the condominium units so as to catch these breezes and utilize passive cooling techniques.

PROPOSAL FOR RECLASSIFICATION

39. The Project comprises three separate developments: Hualalai Village, the Cultural Center, and the Educational Facility. Hualalai Village, a 400-unit condominium complex to be developed in four stages, with Phase I (103 units) already zoned and currently under construction, and therefore is not a part of the Petition and Petition Area. Phases II, III and IV of the Hualalai Village project comprise the remaining 297 units which are included in the Petition. The Cultural Center will comprise of a designed landscaped park that focuses upon the historical relationship of the native Hawaiian culture with Christianity and the establishment of Hawaii's multicultural mix.

40. The Educational Facility, which will be a part of the adjacent University, utilizes approximately 5.0 acres of the 62 acre site, with the Hualalai Village and Cultural Center utilizing the balance of the site almost equally.

The Hualalai Village

41. Hualalai Village, a 400-unit condominium complex, will be developed in four stages, with Phase I (103 units) previously zoned and currently under construction, and is not a part of the Petition.

42. The remaining three phases of the Hualalai Village development consist of approximately 297 high-quality condominium units in approximately 21 two- and three-story structures distributed over approximately 31 acres. There will be a recreation center with exercise facilities and a pool for residents and guests. The structures will be of steel and stucco construction to avoid deterioration due to time, weather and insects, will have no party walls, non-creak floors, and a variety of available interior layouts and appointments. The buildings will be oriented to take advantage both of makai views to the ocean and Kailua Bay and mauka-makai breezes, which shift in direction morning and evening. The condominiums range in size from one to four bedrooms and in price from $167,500 to $502,500.

43. The philosophy of the development is to "build to the land," avoiding major cuts and fills, design to facilitate pedestrian access, and build to a lower density (RM-4) than the site would allow, to provide a better quality of life for residents over the long term. The landscaping and design through the development will encourage residents to leave their cars at home and walk to and from Kailua Village, as well as to the adjacent University campus.

44. Development will proceed in phases and sub-phases, with each phase significantly pre-sold before construction begins. In early May, 2002 ground was broken on phase 1A with 75 percent of the planned units pre-sold.

45. Two different market segments will be served by the project: University of the Nations-Kona affiliates, including donors and friends, faculty and staff, and some students; and the general public. These sectors will likely be financially segmented, with friends and donors of the University and the target general public being relatively more able to purchase, and faculty, staff and students relatively less able to purchase. Mechanisms will be sought to aid less affluent University affiliates to own in Hualalai Village. Efforts will be made to make a number of these units available for use or purchase by University staff. It is anticipated that

condominiums in Hualalai Village will be purchased in significant part by friends and affiliates of the adjacent University, a Christian college.

46. Mechanisms will also be sought to enable Hualalai Village to accommodate the housing needs of some of the University student body. This may be accomplished through the purchase by donors and friends of some number of units, which could then be managed as a limited pool of rental housing for students.

47. Within the normal market segment, market data and research indicated strong demand for the project, especially for mid-priced condominiums in the $125,000-225,000 range, occupied by owners with few or no children and an annual median family income of $56,000-$82,000. It is anticipated that the special relationship between Hualalai Village and supporters of the University of the Nations-Kona will provide a substantial source of support for sales of the condominiums.

48. Hualalai Village will benefit Kailua-Kona by helping satisfy the demand for high-quality condominium residences and by helping to meet the needs of friends and staff of the University for nearby housing.

49. The landscape plan for the remaining phases of Hualalai Villages will maintain the style and pattern followed in Phase I. Similar plant species will be utilized to provide a continuity of visual pattern and texture. The selection of plant material will have a stronger emphasis on native species: endemic, indigenous and Polynesian introduced, either coastal species or species that are found in the dry mesic forest of the original Hawaiian landscape.

The Cultural Center

50. The Cultural Center, a first-class visitor destination, is intended to present the authentic story of the native Hawaiian culture and its historical relationship with the introduction of Christianity, its impact upon the monarchy and the people of Hawaii and the region of Kona, with references to traditional cultures from Pacific regions that have combined to produce Hawaii's unique multicultural mosaic. The present plan is that these stories will be told through on-going daytime performances in outdoor performance area(s) and enclosed

performance auditorium; and other features include an outdoor water feature; an educational living museum complex, a restaurant and shops. These presentations will last approximately 20 minutes and the entire Cultural Center can be experienced in approximately two and one-half hours. A water feature will provide water-based activities and a sense of place in Hawaii.

51. The Cultural Center will provide education and entertainment related to different elements of native Hawaiian culture and history both outdoors and in an indoor main performance auditorium, all in a beautifully landscaped park setting. It is anticipated that the facilities of the Cultural Center, including the auditorium, will also be made available for community use, such as concerts.

52. The Cultural Center will benefit Kailua-Kona by providing a needed venue and visitor attraction in the Kona region, that respects, educates, and tells the story of Hawaii's cultures, thus building respect for, and awareness of cultural diversity as well as similarity across cultures. The Cultural Center will appeal to families and across generations.

53. The Cultural Center will enhance the exposure of University students to native Hawaiian and Pacific cultures. Net revenues generated by both the Village project and the Cultural Center project will stay in Hawaii, as they flow through Bencorp to benefit the University of the Nations-Kona.

54. The preliminary site plan devotes approximately 26.5 acres to the Cultural Center including parking that can accommodate 15 tour buses and up to 840 cars.

55. Economically, the Cultural Center will enhance the Kailua-Kona community as a significant new visitor attraction. The Cultural Center will add measurably to the region's economic stability and economic growth by bringing a constant flow of income to the region. Because any net profit will pass through Bencorp directly to University of the Nations-Kona, this income will stay in the region (as opposed to leaving to support a mainland home office or operations elsewhere), circulate through the local economy in goods and services purchased, and have a substantial local multiplier effect. By helping to facilitate the continued growth of the University, this income will fuel the arrival of a growing student population from the U.S. mainland and elsewhere that will continue to contribute to the local and regional

economy at a concomitantly growing rate. The construction of the Cultural Center will result in local employment and the purchase of local and regional goods and services.

56. The ongoing operations of the Cultural Center will provide a continuing demand for local goods and services, and a supply of new and steady jobs, the income from which will also circulate through the region on a continuing basis. In the absence of any comparable attraction currently existing in the Kona region or on the Big Island, the Cultural Center will add a wholly new dimension to the attractiveness and economy of the region while not competing with any similar existing enterprise.

57. Based upon the feasibility assumption prepared by Steven Au and Roy Tokujo, 500 to 1100 visitors per day are projected to experience the Cultural Center. Cruise line passengers will be shuttled via buses from the pier to the Cultural Center and will represent approximately 75% of the daily visitor count to the Cultural Center. In addition, 50 tour patrons will arrive by van transport, and 50 kamaaina and 200 independent travelers will arrive by private automobiles.

58. Socially, the primary programmatic goals of the Cultural Center are to introduce and educate visitors and local families to the authentic story of the native Hawaiian culture and its historical relationship with the introduction of Christianity, its impact upon the monarchy, the people of Hawaii and the region of Kona. Inherent in this authentic telling is how Christianity changed the Hawaiian culture, which promotes respect for differences among cultures and the value of community. The Cultural Center will do this through a set of experiences that are fun, intellectually and creatively stimulating, and appealing to families and across generations, all in the context of a beautifully landscaped park that takes full advantage of the setting and view planes.

59. It is anticipated that facilities will also be open to the community, and provide a new and high quality performance venue for Kailua-Kona. The main performance area is situated on site as far as possible from any existing or planned residential areas and will be completely enclosed to ameliorate noise concerns Community activities and concerts may be held in this main performance space and community groups could also make use of the space,

which will contribute to the community well being and integrate the Cultural Center into Kailua-Kona's community life.

60. Educationally, the Cultural Center will offer local residents and particularly local schoolchildren the opportunity to deepen their understanding of their own culture by seeing it in its traditional form and by experiencing the range of traditional cultures that produced Hawaii's present cultural amalgam. Student educational events will be scheduled on "non-ship arrival" days and during the normal hours of opening.

61. The landscape plan for the Cultural Center will focus on education. Remnants of the previous agricultural features that can be preserved will be preserved. Plantings related to Hawaiian agriculture will be planted, and will model the dry mesic forest of olden times. This will be a focus within the Cultural Center project area including the passive park and open space areas.

62. A two to three acre passive park will be developed between the Hualalai Village and the Cultural Center. The park is sited adjacent to the existing Hillcrest Community Park, creating expanded and improved recreational facilities. Walking paths and recreational landscaping will be provided. Native species and Polynesian introductions suited to the area will be emphasized in the park landscaping

Educational Facility

63. The approximately 5.0-acre Educational Facility will be an extension of the University and will be developed as part of their programming and construction schedule. The exact site plan and configuration has not yet been determined. This site is an exchange area for land previously transferred from the University to Hualalai Village to facilitate the development schedule.

DEVELOPMENT TIMETABLE

64. The Hualalai Village residential development is slated to run over a period of five years and will be completed during the Year 2007. Commencement of the Cultural

Center is targeted to begin during the Year 2007 and the Educational Facility is being planned for commencement in 2005/2006.

PETITIONER'S FINANCIAL CAPABILITIES TO UNDERTAKE THE PROPOSED DEVELOPMENT

65. Petitioner was established in 1988 as a non-profit tax exempt 501(c)(2) benefit corporation for the purpose of providing financial and material support to the University, a Hawaii 501(c) (3) non-profit corporation

66. The special purpose niche financing secured by Petitioner requires that the entire Petition Area be reclassified in order to maintain the required minimum 70% debt to equity ratio required by the lenders.

67. Petitioner and the parent organization for the Cultural Center would provide necessary financial statements to assist in the procurement of financing. Initial capital monies can be raised by donations, private investors, and/or conventional financing.

68. Primarily through niche and conventional financing, and contributions from University affiliates, including donors and friends, faculty and staff, and some students, approximately $20.5 million has been received for the development of Hualalai Village.

STATE AND COUNTY PLANS AND PROGRAMS

69. The State Land Use Commission currently classifies the Property in the Agricultural district.

70. The Property is surrounded on three sides by lands in the Urban District classification. Abutting the Property on the north, the University is in the Urban District classification and zoned RM-4. Bordering the project area to the south is the Kona Hillcrest subdivision, classified in the Urban District and zoned RS-7.5; there is also a narrow parcel owned by Petitioner that is in the Urban District and split-zoned RD-3.75 and R-7.5. Across Kuakini Highway lies a 6.8-acre parcel classified Urban and zoned RM-2; adjacent to that is a 7.8-acre parcel still classified in the Agricultural District and zoned AG-5. To the east across Queen Ka`ahumanu Highway lie parcels zoned commercial and RD-3.75; nearby, the planned Pualani Subdivision is classified in Urban District and zoned RS 7.5.

71. The County of Hawaii General Plan, in its Land Use Pattern Allocation Guide (LUPAG) Maps, designates the Property as Medium Density Urban. This designation includes "village and neighborhood commercial and residential and related functions (3-story commercial; residential -- up to 35 units per acre)."

72. The Property is not within the Special Management Area established by the County of Hawaii pursuant to Chapter 205A, Hawaii Revised Statutes.

73. The Property is currently zoned A-1a. The Petitioner will be concurrently seeking a change of zone to RM-4, or possibly Residential – Commercial Mixed Use or Village Commercial to facilitate development of the Project.

74. The Kona Regional Plan was adopted by the Planning Commission of the County of Hawaii as Resolution No. 184 in April 1984, and designates the Property as Medium Density Urban RES 6 (6 units per acre). The Project is consistent with this designation.

75. The Office of State Planning developed the West Hawaii Regional Plan ("Plan") in November 1989. The Plan identifies the Property as falling within the Keahole-Keauhou Resort Destination Node. The Project is consistent with the policies of clustering resort development within designated resort destination nodes, developing employment opportunities within those nodes, and encouraging the County to use its zoning powers to support the development of those nodes.

76. The Kailua-Kona Master Plan was adopted in 1994 to help advise the Hawaii County Planning Director and guide urban design in the Kailua Village area, which includes the project area. The Kailua-Kona Master Plan lists the Property as low-density residential in its entirety. The Project is consistent with the objectives of the Kailua-Kona Master Plan.

77. The Project is located within the boundaries of the Kailua Village Special District. The plans for Hualalai Village, Phase I, were reviewed and approved by the Kailua Village Design Commission.

78. The Keahole to Kailua Development Plan (K to K Plan) was adopted by resolution by the Hawaii County Council in April 1991. The K to K Plan serves as an implementing tool for the County General Plan and as a flexible guide for the future growth and development of an area of approximately 17,000 acres in the North Kona District extending from the Kau ahupuaa to the north, Mamalahoa Highway to the east, Palani Road and Kailua Village to the south, and the shoreline to the west. The existing roadway system has sufficient capacity to accommodate the growth in ambient traffic and the traffic that would be generated by the Cultural Center and the Hualalai Village. The critical turning movements at the unsignalized intersections on Kuakini Highway and Queen Ka`ahumanu Highway Extension are forecast to operate at acceptable levels of service with all three proposed projects in place with no mitigating measures required.

NEED FOR PROPOSED DEVELOPMENT

Hualalai Village

79. A feasibility study was performed to determine the strength of market demand for the proposed condominium project. The research examined historical data, interviews with local real estate agents, unit qualitative analysis, and internal needs assessments. Two market segments were considered: (a) affiliates of the University, including donors, friends, faculty, staff, and students; and (b) the general public and faith-based audiences. The study found a strong demand for the project.

80. *Demand from University affiliates*: Bencorp was formed in 1988 as a 501(c)(2) non-profit benefit corporation serving the development of the University. The University is a mission-based educational institution, founded in Kona in the late 1970's and is now actively involved in equipping men and women in more than 100 nations through field-driven course work within its seven colleges and focused centers.

81. Over the last two decades, through both the educational and physical development of the campus, tens of thousands of lives have been impacted, and have in turn identified with and invested in the mission and vision of the University. These include parents who have sent their children, thousands of volunteers who have labored in the building and staffing of the facilities, and a growing constituency of donors. There has been a significant and

growing demand among friends, alumni, donors, staff and volunteers for housing opportunities near the Kona campus. These requests are not solely investment oriented, but also represent the intention and commitment of part or full-time engagement with the University, and thus there is an ongoing demand for appropriate housing that addresses the needs of these affiliates while fulfilling the primary mission of serving the University. Moreover, the University is projected to continue to grow, thus continuing the related growth in demand for residences and accommodations convenient to the campus.

82. The marketing strategy relies initially on contacts developed over the years between the University and its affiliates; widens to include a circle of faith-based organizations and contacts; and reaches the general public through traditional marketing methods. The goal is to have each sub-phase of construction substantially pre-sold before ground is broken for that sub-phase. The first phase of construction, Phase 1A, broke ground in May 2002, and comprised 103 units. The first sub-phase was approximately 75% pre-sold, indicating the existence of a tremendous demand for the housing being offered by Hualalai Village.

83. The Hualalai Village market study indicated: a strong demand for mid-priced condominium units, ranging in price from $125,000 to $225,000; a strong market for owner-occupied housing. Projected demand for mid-priced housing will remain strong for at least 3-5 years, starting in 2000. Values will rise on average 3% per year over this time.

84. The typical condominium buyer will have a median family income of $56,000-$82,000 per year; be between 56-65 years of age; be in or nearing retirement; and have few or no children at home. There was a demand of 331 through 506 new condominium units annually in North Kona from 2000-2005.

85. *Relationship of the Hualalai Village project to the local housing market*: The project area is within the Holualoa Census Designated Place ("CDP") of the Island of Hawaii, just south of the Kailua CDP. A comparison of the median family incomes of the Big Island as a whole, and the typical condominium purchaser shows that at the low end, the Hualalai Village condominiums could be purchased by families with median incomes of 108-120% of the median incomes for the Holualoa neighborhood, Kailua Village, and Hawaii County as a whole,

respectively (if price were the only consideration). While these condominiums may not be within the easy financial reach of families below the median income level, at the low end of the price range and based on price alone these condominiums may be within the reach of a larger-than-expected portion of area families (over half the families in Holualoa, and over 40% of families in Kailua and the Big Island as a whole). The low homeowner vacancy rate of 1.1% in Holualoa and 1.5% in Kailua suggests a demand for more owner-occupied housing.

86. There appeared to be a healthy rental market with a substantial number of rental units available in the area, especially in Kailua. In 2000, nearly 48% of the occupied housing units in Kailua were rentals, and the rental vacancy rate was 11.9%, exceeding the 4.9% in Holualoa, where 38% of the occupied units were rentals, and still substantially higher than the Big Island as a whole, where 35% of the occupied housing was rented and the vacancy rate was 7.6%. One effect of the availability of rental housing is an increased ability of lower income families to find affordable rental housing. In Kailua, 71% of specified renter-occupied units rented in the range of $300-$1000 per month.

87. Efforts will be made to help University affiliates unable to purchase in Hualalai Village to take advantage of the availability of condominiums as rental housing, through the formation of a pool of dedicated units purchased and donated for that purpose or perhaps through the aggregation of units only seasonally occupied. Other creative ideas will also be considered that are in keeping with the preservation of the integrity of the high quality and careful design of the development as a whole, which will serve the area, the University and the residents well for the long term.

88. In general, the Hualalai Village development will offer high-quality condominiums that are moderately priced and planned to reinforce the Kona way of life by avoiding over-density, building to the land, and encouraging pedestrian dominance. The project will help satisfy the demand for condominiums in the Kona area, owner occupied housing, and the special need for housing serving the friends, donors, and University affiliates.

Cultural Center

89. The Kona coast has relatively few visitor destinations besides its traditional beaches, newer deluxe hotels, and world-class billfishing. The Cultural Center will

provide a new destination that reinforces respect for traditional culture and cultural diversity as it attracts visitors to the Kona region. Because the Cultural Center will provide an experience appropriate for all age groups, individuals and families, it can be expected to have a broad appeal to visitors from both sides of the Pacific, and add to Kona's growing appeal as a visitor destination.

90. The Kona region has experienced strong growth over the last decade, and is in need of a venue for concerts and other performances beyond the facilities that now exist. Petitioner is committed to strong interaction with and support for community activities, and believe the Cultural Center can help meet the demand for new arts and performance facilities.

91. The Project will provide both short-term employment in the areas of development, construction, financing, architectural, engineering, insurance, accounting, legal and other related employment relative to the development, and long-term employment in operation of the Cultural Center. Both full- and part-time job opportunities created would include, but not be limited to: administration and staff support, accounting, finance, customer services, security and safety, property management, personnel, production and promotion, clerical, entertainment, eateries, gift shops, landscape maintenance, janitorial services, marketing and advertising. The Cultural Center includes certain restaurants(s), gift stores, food eateries, entertainment, luaus, catering and ticket sales for admission to the Cultural Center, with revenues estimated to range from $13 million - $20 million per annum increasing the County's tax incremental benefit.

92. The University hosts international students from 30 – 50 nations at any one time. This institution makes a significant contribution to cultural diversity as well as training in cross-cultural relationships. Hualalai Village will be closely linked to the University and may provide much needed additional housing opportunities for the staff. Staff and students associated with the University community also make a substantial contribution to the Kona economy. The Project will enhance further growth of the University, and consequently, add opportunities for residents to improve their quality of life through further educational opportunities. Moreover, the development and operational success of the Project's Cultural Center will enhance Kona's position as a tourist attraction.

93. Petitioner has represented and committed to the Commission that in order to enhance the programs proposed at the Cultural Center, Petitioner has committed to fund a gift of scholarships covering the costs of tuition and books for full-time students ("Scholarships") of the Hawaiian language under the following terms and conditions:

a. Starting in the Fall 2003 semester of the College of Hawaiian Language at the University of Hawaii - Hilo ("College of Hawaiian Language"), Petitioner shall select and fund Scholarships for two (2) full-time students selected by Petitioner enrolled in the College of Hawaiian Language at the University of Hawaii – Hilo ("UH-H") through the graduation of each student to obtain a fourth year teaching certificate in the Hawaiian language. Following graduation, the Petitioner shall pay the salary for the two graduates to teach the Hawaiian language at a non-profit educational program specializing in Hawaiian language and cultural instruction, which salary payment shall terminate at the earlier of the commencement of the Cultural Center operations, or January 1, 2008.

b. Upon the opening for operations of the Cultural Center, and for a maximum of five (5) years from the opening of the Cultural Center, the Petitioner shall establish and administer a Hawaiian language scholarship fund by setting aside 1% of each admission ticket sold for the Cultural Center. The proceeds of the Hawaiian language scholarship fund shall fund the costs of scholarships for students of all ages attending Hawaiian language programs, ranging in scope from an immersion school, to a non-profit educational program specializing in Hawaiian language and cultural instruction, to the College of Hawaiian Language. If, for whatever reason, the Cultural Center is not open for operations by January 1, 2008, the Petitioner has committed to return to the Commission for further discussions on this issue.

SOCIO-ECONOMIC IMPACTS

Population

94. In 1980, there were 13,748 people living in the North Kona region, the area including Kailua-Kona. By 2000 the population had more than doubled, to 28,543. The increase over the last 10 years, from 1990-2000, was 28.1%. The population of the Kailua CDP increased just 8% from 1990-2000, to 9,870; but the Holualoa CDP, the one closest to the

Property, increased by 59.3% over that time, to 6,107. Together this local population equals 15,977.

95. In 2000, Hawaii County per-capita income was $18,791; in Kailua-Kona it was $20,353; while in Holualoa it was $25,222, 22% higher than Kailua and 39% higher than Hawaii County. The above statistical picture is of a Kailua-Kona a bit better off than the island as a whole but generally similar in socioeconomic profile except for a higher proportion of workers in the resort sector that grew up with the area over the last 10-20 years; with fewer professionals but more workers in the "arts, entertainment, recreation, accommodation and food services." Holualoa appears more upscale and newer than Kona. Overall, the census data bears out the impression that Kailua is the hub of North Kona around which an influx of newer in-migration is gathering.

96. Assuming an average household size of 2.5, at full build-out Hualalai Village's 400 units would have potentially 1,000 occupants. If half of those were new to the Big Island, 500 new residents would be added. This represents an increase of less than two percent in the population of North Kona and an increase of around three percent in the population of Kailua-Kona and Holualoa combined. However this occupant number may be decreased due to the high incidence of second home buyers in Kona.

Housing

97. A decadal increase in housing units generally mirrored the increase in population between 1990 and 2000. As of 2000, there were 13,330 housing units in the North Kona district, up 68% from 1990. Kailua had 4,322 units, up 20% from 1990; Holualoa had 3,330, up 63% from 1990. The distribution of housing stock between owner-occupied and rental housing was profoundly divergent from the island-wide average.

98. In Hawaii County, 65% of housing units were owner-occupied, and 35% of the housing units were rentals; the rental vacancy rate was 8%. Holualoa had generally similar numbers. But in Kailua, owner-occupied and rental housing was nearly evenly divided, and according to the 2000 US Census the rental vacancy rate was a healthy (for renters) 12%. This suggests that renters currently have access to a significant number of choices, and further

suggests that rents currently are not subject to the upward pressures generated by a tight rental market.

99. The addition of 400 new units will raise the number of North Kona housing units by 3%, from 13,330 to 13,730. It will increase the total number in Kailua and Holualoa by 5%, from 7,652 to 8,052.

100. The operations of the Cultural Center are expected to offer approximately 400 - 500 jobs. It is expected that volunteers and students from the University will fill some of the positions at the Cultural Center, with the remainder of the positions being filled from the local community. While some employees and performers at the Cultural Center will come from other areas, the Cultural Center is not anticipated to create enough of an employment opportunity to independently attract migrants to Kona.

101. The construction of Hualalai Village and the Cultural Center will provide temporary employment for current area residents. The rental vacancy rate of 12% should ensure that any construction workers attracted to Kailua-Kona could find housing for the duration of their employment, or longer.

102. Condition J under Ordinance No. 02-101, requires Petitioner to comply with the applicable affordable housing requirements pursuant to Chapter 11, Hawaii County Code which may include but not limited to the following options:

- provision of in-lieu fees;
- provision of off-site housing units;
- provision of developable lands;
- provision of infrastructure/services; and
- other means approved by the County housing agency.

Petitioner has committed to the Commission to comply with the Hawaii County affordable housing requirements.

Economy

103. Portions of the Project will provide both short-term employment in the areas of development, construction, financing, architectural, engineering, insurance, accounting, legal and other related employment relative to the development and long-term employment in operation of the Cultural Center. Both full- and part-time job opportunities created would include, but not be limited to: administration and staff support, accounting, finance, customer services, security and safety, property management, personnel, production and promotion, clerical, entertainment, eateries, gift shops, landscape maintenance, janitorial services, marketing and advertising. The Cultural Center includes certain restaurants(s), gift stores, food eateries, entertainment, luaus, catering and ticket sales for admission to the Cultural Center, which brings estimated revenues to range from $13 million - $20 million per annum increasing the County's incremental tax benefit.

104. The University hosts international students from 30 – 50 nations at any one time. This institution makes a significant contribution to cultural diversity as well as training in cross-cultural relationships. Hualalai Village will be closely linked to theUniversity and may provide much needed additional housing opportunities for the staff. Staff and students associated with the University community also make a substantial contribution to the Kona economy. This project will enhance further growth of the University, and consequently, add opportunities for residents to improve their quality of life through further educational opportunities. Moreover, the development and operational success of the Cultural Center will enhance and further highlight Kona's postion as a tourist attraction.

IMPACTS UPON THE RESOURCES OF THE AREA

Flora and Fauna

105. A flora and fauna study and biological survey of the Petition Area was completed in July 2002. The purpose of the survey was to identify any State or federally listed threatened or endangered plant species growing on or near the Petition Area, and to summarize the populations of native and introduced plant species. All portions of the Petition Area were surveyed, and all of the naturalized and most of the prominent landscaped plants were noted. During the course of the plant survey, all bird species present on the project site were identified by sight or sound. No mammals were sighted, although it is likely that a number of aliens including mongooses, rats and cats inhabit the property.

106. The general landscape of the Kailua-Kona area has been radically changed by centuries of settlements, over a century of grazing and particularly by the development of hotels, condominiums, resort homes and associated infrastructure and commercial activity since 1960. The vegetation has also been fundamentally altered by alien species invasion to the point that in many locations native species are few to none. The alien species invasion of kiawe (*Prosopis pallida*) and koa haole (*Leucaena leucocephala*), long ago became dominant in the coastal dry forest. As is typical of the region, the Property has been managed for grazing and thus the vegetation is non-natural and almost completely alien. The Petition Area is basically kiawe parkland with an understory of guinea grass (*Panicum maximum*). Other trees, including opiuma (*Pithecellobium dulce*) are present infrequently in the canopy. The understory contains a number of other species, and is in some areas dominated by *Desmanthus virgatus*. Variations in grazing and lava type appeared to have left some areas (particularly the mauka and southern ends) denser with vegetation than others.

107. No threatened or endangered plant or animal species are present or would be expected to be present on the Property. In terms of conservation value, no botanical or zoological resources requiring special protection are present.

Surface Water, Flooding and Drainage

108. There are no known drainage ways on the Property. The nearest major drainage way is the Waiaha drainage way located about 600 feet from the edge of the Property on the opposite side of the Hillcrest subdivision. The low rainfall, site drainage plan and any drainage mitigation measures to be implemented pursuant to requirements of the County Department of Public Works will minimize the impacts associated with storm water runoff. The Federal Emergency Management Agency's Flood Rate Insurance Maps indicate that the Property is within Zone X, which represents areas determined to be outside the 500-year floodplain.

109. A Drainage Report for Hualalai Village was prepared to analyze off-site drainage flows that are tributary to the Property and to propose mitigation for the impacts of these flows. The study quantified flows through three culverts below the Queen Kaahumanu Highway that could potentially impact the Property. Of the three culverts, only one culvert, an 84" culvert near the southeast corner of the Petition Area actually impacts the Petition Area.

Flow from this culvert will be directed to a retention basin with drywells designed to infiltrate the 100-year storm flow. Discharge from the other two culverts will not impact the Property. There are catch basins along the Hualalai Road/Queen Kaahumanu intersection that contribute a small amount of off-site flow. This flow will be disposed of through drywells.

110. The County of Hawaii, Department of Public Works expressed concern regarding possible diversion of flows to off-site properties due to the curb, gutter and sidewalk that is currently being constructed along Hualalai Road as part of the Hualalai Village Phase I project. Petitioner demonstrated to the Department's satisfaction that off-site drainage is not being diverted to other than historic drainage patterns through the University property at TMK: (3) 7-5-10:03. By letter dated March 4, 2003, the Department of Public Works, accepted the Drainage Report for Hualalai Village dated September, 2002 as satisfying Condition G of Ordinance No. 02-01.

Historical/Cultural Resources

111. A Cultural Impact Assessment was conducted in December, 2002 to assess the potential impacts upon any identifiable cultural properties, features, resources, practices or beliefs of native Hawaiians or any other ethnic groups that are associated with the Property or specific to the Wai'aha ahupua'a.

112. The Property is located within the Kula zone, and thus was probably not heavily settled in comparison to the shoreline and mauka regions. The historic clearing of much of the Property for cattle grazing and ranching further impacted the Property.

113. The Petitioner and its consultants have uncovered substantial evidence, as determined by Petitioner's cultural assessment, of valued cultural, historical or natural resources within the Property, but have not found any traditional and customary native Hawaiian rights being currently exercised within the Property. As such, it is unlikely that any valued resources, including traditional and customary native Hawaiian rights, will be affected or impaired by the proposed action. Additional archaeological survey and mitigation work will be undertaken on the Property.

114. If in the future, any valued cultural, historical, natural resources and/or traditional and customary native Hawaiian rights are discovered in the Property, Petitioner will report this matter to the State of Hawaii, Department of Land and Natural Resources, Historic Preservation Division ("DLNR-SHPD") for review and assessment.

115. As a cultural landscape, the ahupua`a of Wai`aha offers a kaleidoscope of historical and cultural features and properties. Historical documentation indicates that as early as the 15th century, the mokuoloko of Kona was a recognized residential and political center whose population was sustained by a variety of agricultural activities and an abundant coastal resources base. Evidence of these traditional land use patterns are documented in remnant cultural properties and features of na heiau ho'oulu 'ai, na ku'ula, springs, enclosures, and terraces of the once extensive Kona field system.

116. During the late 1800s, the upper slopes of Wai'aha served as a summer residence for Emma Naea Rooke and Alexander Kalanikualiholihokekapu 'Iolani.

117. Wai'aha, meaning "gathering water," has one major tributary system whose headwaters are situated in the upper slopes of Hualalai, near 'Umiahu and Kumukou. However, intermittent flow rates of the system historically influenced the development of dryland agriculture.

118. Sources suggest that by the late 1890s, much of the land within the Wai'aha ahupua'a was utilized by the Kona Sugar Company to support the sugarcane industry. Following the closure of the plantation in 1926, Manuel Gomes as part of an immense cattle and ranching operation purchased much of the land within Wai'aha, including a large portion of the Petition Area.

119. The Petitioner has proposed to establish and fund a committee to monitor development. The two-member Wai'aha Development Monitoring Committee is proposed by Petitioner to be comprised of Petitioner's representative, Mary Kamahele Boyd and lineal descendant Josephine Nahale Kamoku. The Wai'aha Development Monitoring Committee will be established to monitor the development of the Hualalai Village, the Cultural Center, and the

educational component. The Petitioner proposed that the two-member group shall be called the "Kahu Wai'aha Committee" ("KWC").

120. The Petitioner, through the Cultural Center will cooperate with the College of Hawaiian Language to establish programs that would be mutually beneficial to identify and preserve identifiable cultural features, resources, practices or beliefs of native Hawaiians or any other ethnic groups associated with the Property. .

Archaeological Resources

121. Permanent settlement began in the Kailua-Kona area in approximately A.D. 1000-1200. Several large and densely populated centers were situated at several locations along the shoreline between Kailua and Honaunau, and included dwellings for rulers, chiefs and people, places of refuge, and other structures. Also present are large and small heiau, sporting areas, and burial clusters. Fishing and farming were the major economic activities. The zone of habitation was segmented makai to mauka, a land division known as an ahupuaa, and included: a) the shoreline inland to approximately 600 feet; b) the Kula, which extended approximately to 500 feet in elevation where some food growing occurred and where permanent habitations are more sparsely distributed; and c) several other zones demarcated primarily by elevation. The Property lies within the Kula zone.

122. Two levels of archaeological/historical reconnaissance have been performed for a portion of the Petition Area. Previously, an eastern portion of the Property was inspected and given clearance by the DLNR-SHPD. In April 2002, an initial field assessment survey was done for the remainder of the Petition Area to determine if any features of archaeological, cultural or historic importance were observable and to make a preliminary assessment of possible historic-preservation treatments appropriate or required by such features. The assessment survey identified 28 possible sites comprising approximately 53 features, including walls, terraces, mounds, modified outcrops, stone concentrations, platforms, enclosures, and a lava blister cave. The functional types included boundary, temporary and permanent habitation, possible grave, possible ceremonial, clearing, ranching, and indeterminate. During this survey, as many as 30-35 component structural features at eleven different sites were tentatively identified as possible burial features. This tentative functional identification was

based primarily on physical similarities to structural features previously identified on other survey projects and confirmed through excavation to contain human skeletal remains.

123. Subsequently, a follow-up investigation was conducted in the survey area of the April 2002 assessment to sample a reasonable number of the possible burial features to determine the following: (a) the presence or absence of burials in the sample of features tested; (b) if present, the number of additional burials likely to be represented by the remaining features that were not tested; (c) the historic preservation implications of any such burials for the feasibility of any proposed development; and (d) the general scope of the work and level of effort for any subsequent archaeological-historical preservation work that might be appropriate and/or required. The ultimate objective of any such subsequent work would be to comply with all applicable historic preservation requirements of the Hawaii State Historic Preservation Division (SHPD) and the Hawaii County Planning Department. The April 2002 survey and the follow-up sampling were performed by PHRI, Inc.

124. No human skeletal remains were recovered within or beneath the eleven sampled possible burial features at eleven different sites. Possible explanations of rock mound features include prehistoric, historic, or modern agricultural clearing mounds; areas of prehistoric sweet potato cultivation, or temporary prehistoric habitation platforms. Other significant archaeological features were noted during the initial survey and recommended for follow-up investigation and appropriate treatment, possibly including preservation in place in some cases. The results of the fieldwork in the April 2002 survey area do not preclude the existence of human skeletal remains elsewhere on the Property.

125. During the follow-up investigation, cultural remains, including a coral abrader (surface) and several pieces of cowrie shell (subsurface) were noted at Site 2235-7. An adze fragment (surface) and several pieces of unidentified shell (subsurface) were noted at Site 2235-4.

126. An Archaeological Inventory Survey was conducted by Rechtman Consulting in February, 2003 for the April 2002 survey area. Twenty-six sites were defined including the previous recorded Kuakini Wall. The sites include Historic Period walls and enclosures, Precontact temporary and permanent habitation sites, Precontact burial sites, trail

segments, an agricultural complex containing 297 features, one ceremonial enclosure and platform, and a papamu. There are four breaches in the Kuakini Wall. No lava tube entrances were found.

127. Subsurface testing was conducted at 22 separate features within 10 sites, including habitation, agricultural, and suspected burial features. The presence of human remains was confirmed at three suspected burial sites. DLNR-SHPD Burial Program was notified of the discovery of the human remains.

128. All 26 sites were assessed for their significance based on criteria established and promoted by DLNR-SHPD and draft Section 13-284-6, HAR (1998) with treatment recommendations for the 26 sites. Five sites were recommended for preservation: Site 6302 (ranching/boundary-Great Wall of Kuakini); Site 23681 (ceremonial-agricultural heiau); and Sites 23683, 23684 and 23685 (burials). The Petitioner has also voluntarily committed to preserve, with interpretative development, the papamu or rough square game board identified as Site 23682.

129. DLNR-SHPD, by letter dated May 7, 2003, concurred with the site significance evaluations as addressed in the Archaeological Inventory Survey, and recommended the five sites for preservation and 10 sites for data recovery.

130. Two mauka-makai trail segments located on the Property were not recommended for preservation by DLNR-SHPD.

Scenic and Visual Resources

131. The Property is located on the lower western slopes of Mount Hualalai, one of five shield volcanoes whose lava flows created the island of Hawaii. The Property is bordered by Kuakini Highway on the west, Hualalai Road and Queen Ka`ahumanu Highway to the east, the University of the Nations-Kona campus to the north and the Kona Hillcrest subdivision on the south. The Property is gently sloping, rising in elevation from approximately 100 feet at Kuakini Highway to 325 feet at its highest point, with the steepest slopes on the upper mauka side just below Hualalai Road. Slopes average 5-10% but increase to as much as 25% just below Hualalai Road. The slightly steeper slopes on the mauka end afford the opportunity to

provide sweeping ocean views from Hualalai Village. Some condominium units may have a view of Kailua Bay. The site plan preserves these views.

ENVIRONMENTAL QUALITY

Hazards – Tsunami, Earthquake and Lava Flows

132. Tsunami: The Federal Emergency Management Agency Flood Insurance Rate Map shows no areas of potential tsunami inundation on the Property.

133. Lava Flows: Hazard zones from lava flows are based chiefly on the location and frequency of both historic and prehistoric eruptions. The hazard zones also take into account the larger topographic area. The island of Hawaii is divided into nine hazard zones according to the level and degree of potential hazards related to lava flows. An area designated as Zone 1 is considered to be an area of greatest potential hazard. These designated zones are determined primarily from the location and frequency of past eruptions.

134. The Kailua-Kona area is within Zone 4, indicating a moderate hazard. Zone 4 includes all of Hualalai, where the frequency of eruptions is lower than on Kilauea and Mauna Loa. Flows typically cover large areas. The dormant Hualalai last erupted in 1801 (Stearns and McDonald, 1946). Since 1800, five percent of the Hualalai area has been covered by lava. In the last 750 years, 15% has been covered.

135. "Historic eruptions" include those for which there are written records, beginning in the early 1800's, and those that are known from the oral traditions of the Hawaiian people. Our knowledge of prehistoric eruptions is based on geologic mapping and dating of the old flows of each volcano. In the last 3000 years, Hualalai has erupted near its summit, along the northwest and south-southeast rift zones, and from vents on the north flank of the volcano. Twenty-five percent of the volcano is covered by flows less than 1000 years old. Hualalai last erupted in 1800-1801 from several vents on the northwest rift zone. Large flows spilled down both sides of the ridge formed by the rift zone and quickly reached the ocean. One of these flows lies south of Kiholo Bay, and part of the Kona Village resort is built upon it. Another flow underlies the northern end of the Keahole (Kona) Airport. Other major eruptions occurred about

300 and 700 years ago. A large flow from the 700-year old eruption forms the north side of Keauhou Bay, south of Kailua-Kona.

136. Earthquakes: The entire island of Hawaii is susceptible to earthquakes originating in fault zones under and adjacent to the island. Two fault zones have been identified within the Kona region: the Kealakekua and the Kaloko faults, both located in South Kona and well away from the Property. According to previously established procedures, the United States Geological Survey conducted a probabilistic seismic-hazards assessment in 1997. From this assessment, seismic zones were re-assigned for each county. The classification system is based on a scale of 0 to 4, increasing in level of risk due to seismic occurrence and danger. Due to the island's active volcanic activity, the entire county of Hawaii lies in a seismic zone designated as Zone 4, the highest designation.

137. Under the Uniform Building Code seismic provisions, a Zone 4 area could experience severe seismic activity between .30 and .40 of the earth's gravitational acceleration (g-forces) causing major damage to poorly designed or built structures. The potential of damage caused by strong earthquakes is a prevalent concern for the entire County of Hawaii. As such, the Project will be in compliance with the Uniform Building Code and County of Hawaii structural design standards, including earthquake design provisions.

Coastal Waters

138. As described above, rainfall in the area is generally quite low and evenly distributed throughout the year. Site design will minimize runoff and provide for its collection, including runoff from newly hard-topped areas, and for its dispersal through percolation from drywells. Adequate provision has been made for the 100-year flood event. No surface water is expected to reach the coast directly, or flow into drainage ways north or south of the Property and so reach the coast. The management of surface water and drainage control measures during construction and subsequent operation will meet County of Hawaii and State Department of Health standards. The Property's location approximately one-quarter mile inland from the coast is sufficient to further reduce the possibility of any such impacts, and no impacts on coastal waters are anticipated.

Air Quality and Noise

139. The Project is expected to create short-term disturbances to the present air quality and noise levels for the area due to construction. The Petitioner will implement standard dust and noise attenuation measures during the construction period to minimize the negative short-term effects on these conditions.

140. Potential subsequent impacts to local air quality are expected to be minimal, and limited to emissions from an increased number of motor vehicles operated by residents and guests of Hualalai Village and visitors to the Cultural Center. By providing adequate parking so that a visitor may quickly find an available parking place, and by landscape design that encourages walking, noise and air quality impacts will be minimized. Buses waiting to load or unload passengers may be asked to wait without their engines running.

141. Cultural Center Programs: The programmatic aspect of the Cultural Center is planned to focus upon the historical relationship of the native Hawaiian culture with Christianity and establishment of Hawaii's multicultural mix. However, in concept the Cultural Center will have an enclosed mainstage area, one or more outdoor performance areas, some outdoor activities around a central water feature, and some displays, all of which may generate sound impacts. The greatest potential noise generators are likely to be performances of traditional music and dance. Any nighttime activities which may be scheduled would be held indoors. Residents of Hualalai Village, the Kona Hillcrest subdivision, and resident students at the University of the Nations-Kona potentially may be affected by heightened sound levels from the Cultural Center.

142. Sound intensity levels from the Cultural Center performances will be mitigated through placement of the activity and event areas within the site away from residences, through the timing and duration of the events, and through the use of the enclosed mainstage area at night when noise has the greatest potential for impacts to surrounding properties. The Petitioner's sensitivity to this issue will be reflected in the design and development of the Cultural Center.

143. The enclosed mainstage area has been located on the extreme north edge of the Cultural Center site, as far from all of these potentially affected areas as possible. The completely enclosed main stage area will ensure that escaping noise will be minimal.

Water Quality

144. There are currently 297 water units available for the portion of the Hualalai Village within the Petition Area. The Department of Water Supply (DWS) is in the process of developing a well at Waiaha and up to 1,000 units of water from that source will become available within the next 12 to 18 months. Off-site infrastructure improvements are required to transmit the water from the well to the Petition Area. Discussions with DWS regarding the development of the necessary transmission lines and tanks are ongoing. Once an agreement is reached regarding the off-site infrastructure improvements, water commitments can be secured for the Cultural Center and the Educational Facility.

145. The only intrusion into the groundwater table is expected to be the possible drilling of a well to supply brackish water for the central water feature. This is not expected to have a significant impact because the water will be recirculating and evaporation losses are not expected to be significant. The low rainfall, site drainage plan and any drainage mitigation measures to be implemented pursuant to requirements of the County Department of Public Works and State Department of Health will minimize the potential for adverse water quality impacts.

146. Two 500,000 gallon water tanks are located on the Property and will be replaced by a 1.0 million gallon tank located further south on the Property.

Recreational Resources

147. The Cultural Center will provide a new recreational resource for the Kona region and for residents of and visitors to the Big Island. It will provide family-oriented activities related to different elements of native Hawaiian culture and history for all age groups. Activities may include performances in outdoor areas and the enclosed mainstage; outdoor activities around the central water feature; displays and exhibits; the education center; and the restaurant or other food outlets. As discussed earlier, it is anticipated that the main stage and perhaps other Cultural Center facilities will be available for community events. Many of the activities provided for by the Cultural Center are unavailable currently on the Big Island.

148. Hualalai Village has made appropriate provision for recreation within the development. There will be an exercise room in the recreation center, a swimming pool for

residents and guests, and a landscape design that encourages walking and biking instead of driving.

ADEQUACY OF PUBLIC SERVICES AND FACILITIES

Transportation/Roads/Traffic

149. Based upon the findings of the final report on the Keahole to Honaunau regional circulation plan, the County of Hawaii is in the process of developing an action plan to prioritize local transportation projects .

150. To address traffic congestion in the Kona Region, the County of Hawaii and/or the State of Hawaii have committed to roadway improvement projects which have been funded through the construction phase. These include the widening of Queen Kaahumanu from Kealakehe to Henry Street, traffic safety improvements without widening at Palani Road, Kuakini Highway widening, pedestrian improvement project along Alii Drive, and the southern phase of the Kahului-Keauhou Parkway from Kamehameha III Road up to Lako Street.

151. Additional planned projects include roadway improvements to the Queen Kaahumanu Highway from Henry Street to Kamehameha III Road; the northern phase of Kahului-Keauhou Parkway; completion of mauka/makai roads along Lako Street and Laaloa Avenue; and alternatives to the intersection of Palani and Queen Kaahumanu, such as the Kealakehe Parkway connection to the Henry Street extension. Funding for these projects is still being determined.

152. Projects with committed funding in the vicinity of the Property include the widening of Kuakini Highway and pedestrian improvements along Alii Drive. The plans for the widening of Kuakini Highway from Palani Road to Hualalai Road are 90% competed.

153. The County acknowledged that the utilization of fair share contributions collected from fair share assessments imposed pursuant to Hawaii County Code Section 12-162 needs improvement to insure that the funds are utilized for specific projects through the CIP process and to insure that the fair share payments do not languish in the accounts. The County committed to develop and improve systems to track the fair share assessments, to verify payments made and disposition of the payments, to develop an accounting system that is linked

to the Planning Department's permit-tracking system and CIP data base system to assure that the fair share assessments are spent for appropriate projects in the vicinity of the contributing project, and to optimize the use of matching funds to leverage federal or State grants.

154. To alleviate the increased traffic congestion in the region, the County is implementing alternatives such as Transportation Systems Management and Transportation Demand Management, which contemplate coordination of traffic signals, HOV and adjustments to peak hour travel by addressing hours of work. The County is also concentrating on implementing increased mass transit, bikeway and pedestrian travel to minimize traffic.

155. The Cultural Center and Hualalai Village are envisioned as separate projects, related only in their mutual affiliation with the University. The primary entry to Hualalai Village will be on Hualalai Road. Additional egress and ingress for Hualalai Village residents as well as emergency public access is planned through a gated entrance mauka-makai from Hualalai Road to Kuakini Highway. The only ingress and egress to the Cultural Center will be on Kuakini Highway. Any through roads would be subjected to traffic calming devices, such as speed bumps, that discourage traffic between the two developments and ensure pedestrian safety between Hillcrest Park and the proposed park of the Petition Area. The Cultural Center will be designed to include elements that mitigate noise, light, and traffic impacts on the surrounding residential areas.

156. Based upon a Traffic Impact Analysis Report by M&E Pacific ("TIAR") that analyzed ambient and projected levels of traffic at: (a) Hualalai/Kuakini; (b) Kuakini/Oni oni; (c) Hualalai/Queen Ka`ahumanu; and (d) Queen Ka`ahumanu/Nani Kailua, ambient traffic can be expected to increase due to regional growth and new projects in the area during the period between 2002 through 2007.

157. The Cultural Center is expected to generate peak traffic volumes at about noon, tapering off until closing at 6:00 p.m. Between 500 to 1100 midday visitors per day are projected to experience the Cultural Center. Cruise line passengers will be shuttled via buses from the pier to the Cultural Center and will represent approximately 75% of the daily visitor count to the Cultural Center. In addition, 50 tour patrons will arrive by van transport, and 50 kamaaina and 200 independent travelers will arrive by private automobiles. By catering to the

cruise ship business, the hours of operation for the Cultural Center will bring most visitors in by bus at off-peak traffic hours, thus minimizing the traffic impacts on the region. The Hualalai Village is expected to generate peak traffic of 150 trips during the morning and 190 trips in the afternoon commuter hours.

158. The Addendum to the TIAR dated February 17, 2003, reanalyzed the traffic forecasts and traffic impacts to include the cumulative traffic impacts of several proposed developments in the vicinity of Hualalai Village and Cultural Center. The reanalysis indicated that traffic generated by other proposed developments (Kona Hawaiian Village, Kona Sea Ridge, Alii Cove) could have significant adverse impact at the Kuakini Highway/Walua Road intersection. The opening of the proposed Kahului to Keauhou Parkway is expected to decrease through traffic problems on Kuakini Highway and decrease delay times/improve level of service on Walua Road. Estimated traffic flows from Cultural Center and Hualalai Village are not expected to have a significant adverse traffic impact on the neighboring road system.

159. The State Department of Transportation ("DOT") reviewed the TIAR and raised concerns regarding the interaction of the entire master planned development at build-out, compliance with standard practices in preparation of a TIAR, supporting documentation and justification, and mitigation of project generated traffic impacts.

160. To address the DOT's concerns with Petitioner's TIAR, Petitioner will prepare a revised TIAR for subsequent DOT review and approval.

Water Service

161. The Project will be served by the County Department of Water Supply system. The County Department of Water Supply has indicated that 297 water units will be allocated for the portion of the Hualalai Village within the Petition Area. Discussions between Petitioner and the County regarding any water unit balance needed for future Educational Facility and Cultural Center needs are currently underway.

162. The water infrastructure for the Project will be constructed incrementally as each development unit (including Hualalai Village, Cultural Center and Educational Facility) is developed. However, the overall system for all three development units is planned in an

integrated fashion with storage capacity for all three units maintained in the planned tanks in the Villages and at an off-site location adjacent to Hualalai Road.

Wastewater

163. Wastewater for the Project will be collected via an on-site gravity system. The on-site system will discharge to a trunk sewer line that has been constructed in Kuakini Highway. The flow is tributary to the County's municipal wastewater treatment plant at Kealakehe.

Solid Waste/Sanitation

164. Solid waste for the Project will be handled by private solid waste hauling contractors. Each development unit is expected to have a separate solid waste management program unless coordination allows the opportunity for a more efficient system. Waste reduction will be incorporated into the Project design of the Project. A solid waste management plan will be prepared as required by the County.

Drainage

165. There are no known drainage ways on the Property. The nearest major drainage way is the Waiaha drainage way located about 600 feet from the edge of the Property on the opposite side of the Hillcrest subdivision. The low rainfall, site drainage plan and any drainage mitigation measures to be implemented pursuant to requirements of the County Department of Public Works will minimize the problems associated with storm water runoff. The FIRM map indicates the Petition Area is not in a flood prone zone.

166. The drainage area directly mauka of the Property (above Queen Ka`ahumanu Highway) is divided into four (4) smaller drainage basins. Impacts from off-site runoff for the Hualalai Village and Cultural Center will be mitigated through the construction of retention basins with drywells. The retention basins will be designed with the potential to increase capacity should it be warranted in the future. In addition, emergency overflow from the retention basins will be directed toward the street and driveway drainage systems. All anticipated off-site flows will be handled by existing drains along Queen Ka`ahumanu Highway and the proposed new drywells along the mauka boundary of Hualalai Village. Increase in runoff from impervious surfaces within the Petition Area will be disposed of through drywells.

By letter dated March 4, 2003, the Department of Public Works, accepted the Drainage Report for Hualalai Village dated September, 2002 as satisfying Condition G of Ordinance No. 02-01.

Power and Telephone

167. Utility poles along both Hualalai Road and Kuakini Highway provide electrical power. By letter dated January 31, 2003, Hawaii Electric Light Company (HELCO) indicated to the Public Utilities Commission that HELCO will have sufficient capacity available on its system to serve the Project into the foreseeable future and to cover the projected annual system peaks.

168. Alternative energy options discussed with HELCO representatives to improve the reliability of power in HELCO's grid include co-generation system and solar water heating system. Noise impacts and the siting of the buildings do not make these options viable during the development of Phase 1 of Hualalai Village currently underway. The Petitioner has committed to pursue alternate energy sources in the development of the Project, such as co-generation and solar sources.

169. Telephone service is also available to the Project along the same pole lines. Telephone service is provided by Verizon Hawaii.

Police and Fire Protection

170. The County of Hawaii provides police and fire protection for the entire island. The Petition Area is well served due to its proximity to existing urban areas and location along major roadways. The nearest fire station is located near the corner of Palani Road and Queen Ka`ahumanu Highway about a mile away. Additionally, all buildings will be built to meet life safety and fire code requirements.

Schools

171. TheUniversity campus is immediately adjacent to the Petition Area. The proposed Educational Facility will be a part of this campus. Several private and public schools serve the Kailua-Kona area. They include Hualalai Academy, Kahakai Elementary, Kealakehe Elementary, Kealakehe Intermediate, Kalakehe High School, Kona Montessori School, Hualalai Academy, Kona Christian Academy, and Makua Lani Christian High School. The nearest public

high school is Kealakehe High School several miles to the north. The West Hawaii Branch of the University of Hawaii Center at West Hawaii, a branch of the Community College System is located to the south in Kealakekua.

Parks

172. There are few parks in the Kona region. The nearest large park is the State of Hawaii's Old Kona Airport Park just north of Kailua Kona past the industrial park. A smaller County beach park, Hale Halawai is closer to the Property near the terminus of Hualalai Road. Immediately adjacent to the Property is a small community park in the Hillcrest subdivision.

173. The University has recreational amenities scattered through its campus including children's play areas and a soccer field. A passive park is planned for the area between Hualalai Village and the Cultural Center.

174. A two to three acre passive park will be developed between the Hualalai Village and the Cultural Center for possible dedication to the County of Hawaii. The park is sited adjacent to the existing Hillcrest Community Park, creating expanded and improved recreational facilities. Walking paths and recreational landscaping will be provided. Native species and Polynesian introductions suited to the area will be emphasized in the park landscaping

Health Facilities

175. The nearest hospital is Kona Community Hospital which is located to the south in Kealakekua about 10 miles away. Several private clinics are located in Kailua Kona near the Property.

COMMITMENT OF STATE FUNDS AND RESOURCES

176. The on-site development of the Project will be funded through a combination of niche financing and conventional financing, and donors from the friends, faculty and staff of the University affiliates, and will not require direct expenditures by either the State of Hawaii or the County of Hawaii.

177. State of Hawaii and/or County of Hawaii funds are being committed to local and regional traffic improvements in the area of the Project, and Petitioner committed to pay its pro rata share /fair share of off-site traffic improvements that are required as a direct result of development of the Project.

CONFORMANCE TO APPLICABLE DISTRICT STANDARDS

178. The proposed reclassification is in general conformance to Section 15-15-18(1) to (8) of the Land Use Commission rules, standards for determining "U" Urban District boundaries.

CONFORMANCE WITH GOALS, OBJECTIVES AND POLICIES OF HAWAII STATE PLAN

179. Pursuant to Section 205-17(1), HRS and Section 15-15-77(b)(1), HAR, and subject to the conditions of approval set forth herein, the reclassification of the Property conforms to the applicable goals, objectives and policies of the Hawaii State Plan, Chapter 226, HRS, as amended with respect to the following State Plan objectives and policies, based upon the following:

> Section 226-5: Objective and Policies for Population: Hualalai Village represents an increase of less than two percent in the population of North Kona and an increase of around three percent in the population of Kailua-Kona and Holualoa combined.
>
> Section 226-6: Objectives and Policies for the Economy – In General: The Hualalai Village-Cultural Center project will create temporary jobs in construction and ongoing jobs in operation of the Cultural Center.
>
> Section 226-7: Objectives and Policies for the Economy – Agriculture: The proposed project will reclassify the approximately 62 acre parcel from Agricultural to Urban State Land Use District. While the parcel has a history of use for cattle grazing, the land is poorly suited for agricultural production. The County of Hawaii had 1,214,732 acres of land in the Agricultural land use designation in 2000; North Kona had 158,853. The proposed reclassification of 62 acres to the urban land use district is a relatively insignificant change, especially in this case, where the land is poorly suited to agriculture.
>
> Section 226-8: Objectives and Policies for the Economy – Visitor Industries: The Kona coast has relatively few visitor destinations besides its traditional beaches, newer deluxe hotels, and world-class billfishing. The Cultural Center will provide a new destination that reinforces respect for traditional culture and cultural diversity as it attracts visitors to the Kona region. Because the Cultural Center will provide an experience appropriate for all age groups, individuals and families, it can be expected

to have a broad appeal to visitors from both sides of the Pacific, and add to Kona's growing appeal as a visitor destination. The development is expected to serve visitors traveling to the Kona coast and other regional attractions while remaining sensitive to the local rural flavor.

Section 226-12: Objectives and Policies for the Physical Environment – Scenic, Natural Beauty, and Historic Resources: The planning and design of the Project reflects the history, location, topography and setting of the Property. Prominent view corridors and major topographical features will be maintained in the Project's design. The historical setting of the region will be reflected in its traditionally based planning, architecture, site amenities and operation. The DLNR-SHPD will be consulted regarding treatment of any historic sites that are identified within the Property. No rare or endangered plant and animal species or habitats are present on-site. Native habitats do not exist on the Property given its history as an agricultural parcel and the introduction of non-native species over time.

Section 226-13: Objectives and Policies for the Physical Environment – Land, Air, and Water Quality: Developing the Project is consistent with the intent of this objective as the Petition Area is adjacent to existing urban community and commercial developments. The Project is intended to cluster development and compatible activities and facilities in this area.

Section 226-14: Objectives and Policies for Facility Systems/In General: Existing roadway systems are generally adequate to accommodate the Project. Left turn lanes are planned for safety reasons on both Hualalai Road and Kuakini Highway. The water system will tie into the County's water system. At the present time capacity seems sufficient to meet the projected demand of the Project. The wastewater system will connect to the existing County system. System capacity is adequate to accommodate the projected loads from Hualalai Village and the Cultural Center. Drainage designs will meet County standards for runoff. No offsite impacts are expected.

Section 226-19: Objectives and Policies for Socio-Cultural Advancement - Housing: Approximately 400 units of multi-family housing are proposed as a major component of this development. The addition of 400 new units will raise the number of North Kona housing units by 3%, from 13,330 to 13,730. It will increase the total number in Kailua and Holualoa by 5%, from 7,652 to 8,052. The units will be situated adjacent to the University facilities, within the unique Kona setting and at a pedestrian scale. The University hosts international students from 30 – 50 nations at any one time. This institution makes a significant contribution to cultural diversity as well as training in cross-cultural relationships. Additionally, Hualalai Village will be closely linked to the University and provide much needed additional housing opportunities for the staff.

Section 226-23: Objectives and Policies for Socio-Cultural Advancement – Leisure: The Cultural Center will be a place intended to, pass on the history and culture of Hawaii. It will provide family-oriented activities related to different elements of native Hawaiian culture and history for all age groups. Activities may include performances in outdoor areas and the enclosed mainstage; outdoor activities around

the central water feature; displays and exhibits; the education center; and the restaurant or other food outlets. As discussed earlier, it is anticipated that the main stage and perhaps other Cultural Center facilities will be available for community events. Many of the activities provided for by the Cultural Center are unavailable currently on the Big Island.

CONFORMANCE WITH APPLICABLE PRIORITY GUIDELINES AND FUNCTIONAL PLANS

180. *State Education and Higher Education Plan*: The University is a mission-based educational institution, founded in Kona in the late 70's . This non-traditional, globally networked university offers viable university-level learning opportunities for emerging leaders in Kona and other locations worldwide. The Project is intended to support University's mission. The Petitioner has committed to cooperate with the College of Hawaiian Language in providing distance learning opportunities in Kona.

181. *State Transportation Plan*: Roadway improvements will conform to projections for growth in this region. Transportation standards will be observed during development. The Petitioner has agreed to contribute its pro rata/fair share of off-site traffic impacts necessary to address the impacts of development of the Project.

182. *State Recreation Plan*: Hualalai Village has made appropriate provision for recreation within the development through development of the 2 to 3 acre passive park. There will also be a recreation center with exercise facilities and a swimming pool for residents and guests, and a landscape design that encourages walking and biking.

183. *State Water Resources Development Plan*: The State Water Resources Development Plan is a plan with a broad mandate and agenda to "guide the development, conservation, and administration of Hawaii's water and related land resources on a comprehensive and coordinated basis." As such, new development must be located logically and the short term and long term impacts should promote resource availability and water quality. The Project is located in an urban infill area between two existing urban developments, the Hillcrest subdivision and the University campus. By its location, it consolidates and minimizes the expansion of water infrastructure for urban development. In addition to suitable native species, the landscaping will consider xeriscape concepts and species to reduce water demand.

The drainage plans for the Project will include drywells that will enhance percolation into the ground and help recharge the aquifer and that will have capacity for expansion. The overall concept calls for management of rainwater on site through filtration within the landscaping or dry wells. The water feature in the Cultural Center will consist of recirculating ponds to minimize water loss. Also, within the education program at both the University and in the programs in the Cultural Center lessons on appropriate technologies and conservation of resources will be part of the ethic and curriculum.

184. *State Agriculture Plan*: The Project proposes the reclassification of an approximately 62-acre parcel from the Agricultural to Urban State Land Use District. While the Petition Area has a history of use for cattle grazing, it is not well-suited for agricultural production.

185. *State Tourism Plan*: The primary programmatic goals of the Cultural Center are to introduce and educate visitors and local families to the authentic story of the native Hawaiian culture and its historical relationship with the introduction of Christianity, its impact upon the monarchy, the people of Hawaii and the region of Kona. Inherent in this authentic telling is how Christianity changed the Hawaiian culture, which promotes respect for differences among cultures and the value of community. The Cultural Center will do this through a set of experiences that are fun, intellectually and creatively stimulating, and appealing to families and across generations, all in the context of a landscaped park that takes full advantage of setting and view planes. In the absence of any comparable attraction currently existing in the Kona region or on the Big Island, the Cultural Center will add a wholly new dimension to the attractiveness and economy of the region while not competing with any similar existing enterprise.

186. *State Housing Plan*: Two different housing segments will be served by the Project: University affiliates, including donors and friends, faculty and staff, and some students; and the general public. These sectors will likely be financially segmented, with those who are able to purchase: friends and donors of the University and the target general public; and those less able to purchase: faculty, staff and students. Petitioner intends to pursue mechanisms to aid less affluent University affiliates to own in Hualalai Village. Other mechanisms will be sought to enable Hualalai Village to accommodate the housing needs of some of the University

student body, including, for example, the purchase by donors and friends of some number of units that could then be managed as a limited pool of rental housing for students. The Petitioner has agreed to comply with the affordable housing requirements of the State and County in the development of the Project.

187. *State Employment Plan*: The Project is intended to reflect the needs and desires of the Kona and University communities through the creation of new housing opportunities and a unique cultural center. The Project will be appropriate, in a scale and theme that will provide additional employment opportunities for area residents. As proposed, the Cultural Center will consist of approximately 28,900 square-feet of commercial space and a total area of 49,400 square feet. This use, along with the residential component of the Project is anticipated to generate up to 400 – 500 temporary and permanent part-time and full-time jobs and increase employment in the Kona area.

CONFORMANCE WITH OBJECTIVES AND POLICIES OF THE HAWAII GENERAL PLAN

188. The Hualalai Village and Cultural Center components of the Project are clearly consistent with the Medium Density Urban designation of the Hawaii County Land Use Pattern Allocation Guide Map. The Hualalai Village proposes to build approximately 11 residential units per acre. The Cultural Center is also consistent because the County's Multiple-Family Residential (RM), Village Commercial (CV) and Residential – Commercial Mixed Use (RCX) districts allow major outdoor amusement and recreation facilities through the Use Permit procedure. In the words of the General Plan, "[t]he land use pattern is a broad, flexible design intended to guide the direction and quality of future developments in a coordinated and rational manner." The Cultural Center complements the existing land uses in the area and will add to the vibrancy of Kailua-Kona's urban core.

> Economic: University of the Nations-Kona hosts international students of over 30 nations. The University makes a significant contribution to cultural diversity as well as training in cross-cultural relationships. Hualalai Village and the Cultural Center will be closely linked to the University and provide expanded cultural activities and enrichment programs for residents and visitors, and potential housing opportunities for faculty, students, and affiliates. Staff and students associated with the University also make substantial contributions to the West Hawaii economy. This Project will

enhance further growth of the University and add opportunities for residents to improve their quality of life through further educational opportunities.

Environmental Quality: Drainage will be disposed of through the use of drywells. Wastewater will be tributary to the County of Hawaii's sewer system and wastewater treatment plant. Throughout construction and operation, the Project will remain in compliance with all applicable Federal, State and County air, water solid waste and noise control standards.

Flood Control and Drainage: the Flood Insurance Rate Map (FIRM) for this vicinity, shows the Waiaha Drainage way located approximately 1,000 to 1,500 feet south of and separated from the Petition Area by the Hillcrest Subdivision. Consequently, no known drainage ways are located on the Property. Off-site runoff that enters the Property will be disposed of through retention basins and drywells. This will mitigate any existing drainage problems that occur downstream of the project as well as protect the Property from storm damage. Increased runoff generated by the Property will be disposed of in drywells. Best Management Practices will be used to prevent soil erosion.

Historic Sites: An archaeological assessment survey was conducted by Paul H. Rosendahl, Ph.D., Inc. in April 2002, and an Archaeological Inventory Survey was conducted by Rechtman Consulting in February, 2003 for the portion of the Petition Area not reviewed and cleared by DLNR-SHPD. In its letter dated May 7, 2003, DLNR-SHPD concurred with the site significance evaluations as addressed in the Archaeological Inventory Survey, and recommended five sites for preservation and 10 sites for data recovery.

Natural Beauty: The philosophy of the entire Project is to "build to the land," avoiding major cuts and fills, design to facilitate pedestrian access, and build to a lower residential density than the site would allow, to provide a better quality of life for residents over the long term. The landscaping and design through the Project will encourage residents to leave their cars at home and walk to and from Kailua Village. The Cultural Center will provide education and entertainment, culturally based activities, and presentations of music and dance, indoor and outdoor performances in a landscaped park setting.

Housing: The Project will provide additional residential inventory for West Hawaii and include units targeted for individuals affiliated with the University thereby reducing the demand for other local housing. Hualalai Village will provide residents with an alternative market product to housing in the area. The project is located within close proximity to all necessary urban services and facilities, and will help complete the urban core for that area of Kailua-Kona. The Project will be completed in compliance with required codes and standards.

Public Facilities: The Project includes recreational amenities for Hualalai Village residents and guests and the establishment of a two to three-acre park adjacent to the existing Hillcrest Community Park.

Public Utilities: The Project is located adjacent to Kuakini Highway, Hualalai Road and the University. Water, telephone, electricity, sewer, services are available as described in the following sections.

Water: As discussed previously 297 water units will be allocated for the portion of the Hualalai Village within the Petition Area. Additional water units needed for the Cultural Center and the Educational Facility are being discussed by the Petitioner and the County.

Telephone: Existing telephone lines and poles are available along the property lines of the Project.

Electricity: Electrical utility poles and lines exist along the boundary of the Property.

Sewer: Wastewater will be serviced through a private sewer line, connecting to an existing sewer line through the University and then connecting to the County sewer at Kuakini Highway. The County of Hawaii has constructed the Kuakini Interceptor Sewer from the University to the Kailua-Kona sewage treatment plant. An extension of the interceptor sewer has been designed and has been constructed to service Pualani Estates subdivision. Hualalai Village and Cultural Center will connect to this system at the northwest corner of the Property at Kuakini Highway.

Recreation: The plan for the Project includes recreational amenities for Hualalai Village residents and guests and the Project park. In addition, the Cultural Center may be used as a community recreational amenity, available on a fee basis for residents and guests to experience cultural and educational activities.

Transportation: The existing roadway system, as improved by projected State and County programs, has sufficient capacity to accommodate the growth in ambient traffic and the traffic that will be generated by the Cultural Center and the Hualalai Village. Left turn lanes are planned for safety reasons on both Hualalai Road and Kuakini Highway.

Land Use – Multiple-Family Residential: Hualalai Village residences will provide new housing units on medium-density parcels in close proximity to similarly zoned urban areas. The Project access points are on collector and arterial roads. Traffic from the Project will not be routed through areas of lesser density to reach regional transportation facilities.

CUSTOMARY AND TRADITIONAL NATIVE HAWAIIAN RIGHTS

189. The Property is located within the Kula zone, and thus was probably not heavily settled in comparison to the shoreline and mauka regions. The historic clearing of much of the Property for cattle grazing and ranching further impacted the Property. The Petitioner and its consultants have uncovered substantial evidence of significant cultural, historical or natural resources within the Property, but have not found any traditional and customary native Hawaiian rights being exercised within the Property. As such, it is unlikely that any valued resources,

including traditional and customary native Hawaiian rights, will be affected or impaired by the proposed action. Additional archaeological survey and mitigation work will be undertaken on the Property. If in the future, any valued cultural, historical, natural resources and/or traditional and customary native Hawaiian rights are discovered in the Property, the Petitioner will report this matter to the DLNR-SHPD for review and assessment.

INCREMENTAL DISTRICTING

190. Pursuant to Section 15-15-78 of the Land Use Commission Rules, incremental districting is not required because full development of the subject Property can be completed within ten years after the date of the Land Use Commission's approval.

RULING ON PROPOSED FINDINGS OF FACT

Any of the proposed findings of fact submitted by the Petitioners, and the other parties not already ruled upon by the Commission by adoption herein, or rejected by clearly contrary findings herein, are hereby denied and rejected.

Any conclusion of law herein improperly designated as a finding of fact shall be deemed or construed as a conclusion of law, any finding of fact herein improperly designated as a conclusion of law shall be deemed or construed as a finding of fact.

CONCLUSIONS OF LAW

191. The Commission finds upon the clear preponderance of the evidence that the reclassification of the Property, consisting of approximately 62 acres situate at Waiaha 1st, Kailua-Kona, District of North Kona, Island and State of Hawaii, identified as Tax Map Key Nos.: (3) 7-5-10:85 and 7-5-17:06, from the Agricultural District to the Urban District, upon the conditions set forth in this Decision and Order, is reasonable, conforms to the standards for establishing the Urban District boundaries, is not violative of Section 205-2, HRS, is consistent with the Hawaii State Plan as set forth in Chapter 226, HRS, the policies and criteria established pursuant to Section 205-17, HRS, and conforms to Chapter 15-15, HAR.

192. Article XII, Section 7 of the Hawaii Constitution requires the Commission to protect native Hawaiian traditional and customary rights. The Commission affirms and shall

protect all rights, customarily and traditionally exercised for subsistence, cultural and/or religious purposes on the Property, subject to the right of the State to regulate such rights.

193. The State's power to regulate the exercise of customary and traditional native Hawaiian rights allows the Commission to permit development that interferes with such rights if the preservation and protection of such rights would result in actual harm to the recognized interests of others. Nevertheless, the State is obligated to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible. Public Access Shoreline Hawaii v. Hawaii County Planning Commission, 79 Hawai`i 425, 450, n. 43, 903 P.2d 1246 (1995).

DECISION AND ORDER

IT IS HEREBY ORDERED that the Reclassified Area being the subject of Docket No. A02-737, filed by Petitioner U of N Bencorp, consisting of approximately 62 acres of land in the State Land Use Agricultural District at Hualalai, North Kona, Island, County and State of Hawaii, identified as Tax Map Key:(3) 7-5-10:85 and (3) 7-5-17:06, and approximately shown on Exhibit "A", attached hereto and incorporated herein by reference ("Reclassified Area") is hereby reclassified from the State Land Use Agricultural District to the State Land Use Urban District, and the State Land Use District boundaries are amended accordingly.

Based upon the findings of fact and conclusions of law stated herein, it is hereby determined that the valued cultural, historical or natural resources and any customary and traditional native Hawaiian rights and practices within the Reclassified Area that have been identified herein shall be protected in perpetuity; that the reclassification shall not significantly affect or impair the continued exercise of those right and practices; and that the reasonable exercise of those rights and practices shall be protected, to the extent feasible, by the conditions of approval set forth herein.

IT IS HEREBY FURTHER ORDERED that the reclassification of the Reclassified Area from the State Land Use Agricultural District to the State Land Use Urban District shall be subject to the following conditions:

1. Affordable Housing. Petitioner shall provide affordable housing opportunities for residents of the State of Hawaii in accordance with applicable housing requirements for the Project of the County of Hawaii. The location and distribution of the affordable housing or other provisions for affordable housing shall be under such terms as may be mutually agreeable between the Petitioner and the County of Hawaii.

2. Drainage Improvements. Petitioner shall design and construct on-site and regional drainage improvements required as a result of the development of the Reclassified Area to the satisfaction of the State Department of Health, the Commission on Water Resource Management of the State Department of Land and Natural Resources, and the County of Hawaii. The Petitioner shall prepare a Drainage Study meeting with the approval of the County of Hawaii Department of Public Works. The Drainage Study shall consider regional drainage issues.

3. Public School Facilities. Petitioner shall contribute to the development, funding, and/or construction of school facilities for the Project, on a fair-share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution shall be agreed upon in writing by the Petitioner and the Department of Education prior to seeking building permits for any portion of the Reclassified Area.

4. Water Resources. Petitioner shall provide adequate water supply facilities and improvements or equivalent funding to accommodate the Project. The water supply facilities, improvements and/or equivalent funding shall be coordinated and approved by the Commission on Water Resource Management of the State Department of Land and Natural Resources, and the County of Hawaii Department of Water Supply.

5. Wastewater Facilities. Petitioner shall provide adequate wastewater treatment, transmission, and disposal facilities for the Project as determined by the State Department of Health and the County of Hawaii Department of Environmental Management.

6. Archaeology

a. Petitioner shall submit a complete inventory survey report of the Reclassified Area for the review and approval of the State Historic Preservation Division of the Department of Land and Natural Resources ("DLNR-SHPD"). Petitioner shall prepare and

implement a data recovery plan, a preservation plan, a burial treatment plan, and a monitoring plan to be reviewed and approved by the DLNR-SHPD. The submittal of these plans shall be accompanied by the design plans for the Project to facilitate the development of appropriate mitigation measures.

b. Should any previously unidentified human burials, archaeological or historic sites such as artifacts, marine shell concentrations, charcoal deposits, stone platforms, pavings or walls be found, Petitioner shall stop work in the immediate vicinity and the DLNR-SHPD shall be notified immediately. The significance of these finds shall then be determined and approved by the DLNR-SHPD. Subsequent work shall proceed upon an archaeological clearance from the DLNR-SHPD when it finds that mitigative measures have been implemented to its satisfaction. Petitioner shall also comply with all applicable statutory provisions and administrative rules regarding inadvertent burial finds within the Reclassified Area. Any mitigation and preservation shall be monitored by the KWC as described below.

c. The proposed mitigation commitments for all identified sites with burials shall be submitted to the DLNR-SHPD for review and comment. A burial treatment plan for those sites, to include without limitation Sites 23683, 23684 and 23685, shall then be approved by DLNR-SHPD, and a certified copy of said plan shall be filed with the Commission prior to any land alteration in the vicinity of these sites. Mitigation commitments shall be monitored by the Kahu Wai`aha Committee ("KWC").

d. For all sites approved by the DLNR-SHPD to undergo archaeological data recovery, an archaeological data recovery plan (scope of work) shall be prepared by Petitioner. This plan shall be approved by the DLNR-SHPD and a certified copy of said plan shall be filed with the Commission prior to any land alteration in the vicinity of these sites. The approved plan shall be monitored by the KWC.

e. For all sites approved for preservation by the DLNR-SHPD, to include without limitation the Great Wall of Kuakini (Site 6302), the papamu or rough square game board (Site 23682), the agricultural heiau (Site 23681), and after completion of the finished grade for the area, at least one of the alignments for the ancient trails (Site 23679 or Site 23680), a preservation plan shall be prepared by Petitioner. (Burial sites are covered under the burial

treatment plan.) This plan shall include buffer zones/interim protection measures during construction, and long-range preservation (including public access and interpretation, where appropriate). The plan shall include input from the KWC and relevant Hawaiian groups. The plan shall be approved by the DLNR-SHPD and a certified copy of said plan shall be filed with the Commission prior to any land alteration in the vicinity of these sites. The approved preservation plan shall be monitored by the KWC.

f. Petitioner shall preserve the approximate alignment of at least one of the mauka-makai trail segments. Due to the difficulty of development on this site, the site grading would occur first, then the Petitioner shall reestablish a minimum of one of the two trail segments, Site 23679 (20 meter segment) or Site 23680 (ten meter segment), at a mutually agreeable site, giving allowances for building footprints, on finished grade, in consultation with the Office of Hawaiian Affairs.

7. Cultural, Historical, Customary and Traditional Rights and Resources.

a. Petitioner shall initially establish and annually provide reasonable operating and capital expenditure costs or facilities through revenues from the Project, the KWC composed of: (1) a person of Native Hawaiian ancestry who is a lineal descendent and knowledgeable regarding the type of cultural resources and practices within the Reclassified Area, as selected by the Executive Officer of the Commission from a list of three names based on a review of their resumes, and (2) a management member knowledgeable regarding the type of cultural resources and practices within the Reclassified Area, as selected by the Petitioner. The individuals making up the KWC shall operate on an equal vote basis.

b. The KWC shall be established by Petitioner no later than six months from the issuance of this Decision and Order. Upon establishment of the KWC, Petitioner shall provide a written report to the Commission, the Office of Planning, and the County of Hawaii with details as to its composition, structure, operating costs and compensation for members and staff, procedures, and plan of action.

c. The KWC shall jointly decide, on an equal vote basis, monitoring and dispute resolution decisions related to the protection of native Hawaiian practitioners'

exercise of customary and traditional practices and rights within the Reclassified Area; the availability of natural and cultural resources for present and future generations; and appropriate access within the Reclassified Area to the extent that these rights are protected by PASH vs. Hawaii County Planning Commission, 79 Haw. 425 (1995), in perpetuity. In the event that the two person KWC cannot agree on a specific decision, they shall jointly select a third person to break the tie. A certified description of any action requiring selection of a third member of the KWC shall be filed with the Commission.

d. The KWC shall monitor the quality of the Petitioner's actions to provide access to and/or preserve and maintain traditional and customary native Hawaiian practices and cultural resources. The KWC shall provide recommendations consistent with this Decision and Order to the Commission with respect to maintenance and/or preservation of those traditional and customary native Hawaiian practices and cultural resources.

e. The KWC shall provide reports to the Commission on an annual basis describing items and issues covered in their deliberations and any other findings and recommendations.

f. Petitioner shall preserve and protect rights to gathering for cultural purposes, including religious practice, by providing appropriate access to burial sites and other archaeological sites within the Reclassified Area consistent with this Decision and Order. Petitioner shall adhere to prevailing and/or published protocols of the DLNR-SHPD where these sites are found to exist, as monitored by the KWC.

8. Soil Erosion and Dust Control. Petitioner shall implement efficient soil erosion and dust control measures during and after the development process to the satisfaction of the State Department of Health.

9. Transportation. Petitioner shall participate in the pro-rata funding and construction of local and regional transportation improvements and programs necessitated by the proposed development in designs and schedules accepted and determined by the State Department of Transportation (DOT) and County of Hawaii Department of Public Works (DPW). Agreement between the Petitioner and the DOT and DPW as to the level of funding and

participation shall be obtained prior to the Petitioner obtaining County zoning, or prior to the Petitioner securing County building permits if County zoning is not required.

10. Traffic. Petitioner shall, prior to the Petitioner obtaining County zoning, submit a revised Traffic Impact Analysis Report for the review and approval of the DOT and DPW, which shall include an analysis of the entire development of the existing/proposed University of the Nations-Kona, Hualalai Village project, and the Cultural Center, as well as existing and potential future developments in the immediate area as required by the DOT and DPW.

11. Cultural Center. The Petitioner shall develop the Cultural Center with sensitivity to the host native Hawaiian culture, and provide for outreach and educational opportunities for the children of Hawaii. The Petitioner shall consult with the KWC and the Ka Haka 'Ula O Ke'elikolani, College of Hawaiian Language at University of Hawaii-Hilo to promote cultural sensitivity in the development of programs for the Cultural Center. Petitioner shall, prior to commencement of operations for the Cultural Center, submit a status report to the Commission for its approval on the Petitioner's traffic mitigation efforts for development of the Reclassified Area. If, for any reason, the Cultural Center does not commence operations by January 1, 2008, the Petitioner shall return to the Commission for a hearing to review compliance with the requirements of this Condition.

12. Ka Haka 'Ula O Ke'elikolani, College of Hawaiian Language at University of Hawaii-Hilo. Petitioner shall cooperate with the College of Hawaiian Language at University of Hawaii-Hilo in promoting the perpetuation of the Hawaiian language by providing distance learning opportunities for teaching the native Hawaiian language, as well as cooperating in activities that promote Hawaiian cultural authenticity.

13. Civil Defense. Petitioner shall fund and construct adequate civil defense measures serving the Reclassified Area as determined by the State of Hawaii Department of Defense-Office of Civil Defense, and the County of Hawaii Civil Defense Agency.

14. Solid Waste. Petitioner shall develop a Solid Waste Management Plan in conformance with the Integrated Solid Waste Management Act, Chapter 342G, Hawaii Revised

Statutes. Petitioner's Solid Waste Management Plan shall be approved by the County of Hawaii Department of Environmental Management, Solid Waste Division. The Plan shall address and encourage an awareness of the need to divert the maximum amount of waste material caused by developments away from the County's landfills.

15. Compliance with Representations to the Commission. Petitioner shall develop the Reclassified Area in substantial compliance with the representations made by the Petitioner to the Commission in this Docket, as proposed in its Petition and in documentary evidence and testimony before the Commission. Failure to do so for any reason including economic feasibility, may result in the imposition of fines as provided by law, removal of improvements by Petitioner at Petitioner's own expense, reversion of the Reclassified Area to its former classification, a change to a more appropriate classification, or any other legal remedies.

16. Notice of Change to Ownership Interests. Petitioner shall give notice to the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interests in the Property, prior to development of the Property.

17. Annual Reports. Petitioner shall timely provide without prior notice, annual reports to the Commission, the Office of Planning, and the County of Hawaii Planning Department in connection with the status of the development proposed for the Reclassified Area, and Petitioner's progress in complying with the conditions imposed. The annual report shall be submitted in a form prescribed by the Executive Officer of the Commission. The annual report shall be due prior to or on the anniversary date of the Commission's approval of the Petition.

18. Release of Conditions Imposed by the Commission. Petitioner may seek from the Commission full or partial release of the conditions provided herein as to all or any portion of the Reclassified Area upon evidence acceptable to the Commission of satisfaction of these conditions.

19. Recording of Conditions. Within seven (7) days of the issuance of the Commission's Decision and Order for the subject reclassification, Petitioner shall (a) record with Bureau of Conveyances and/or the Assistant Registrar of the Land Court of State of Hawaii, as applicable, a statement that the Reclassified Area is subject to conditions imposed by the

Commission in the reclassification of the Reclassified Area, and (b) file a copy of such recorded statement with the Commission. Petitioner shall record the conditions imposed herein by the Commission with the Bureau of Conveyances and/or the Assistant Registrar of the Land Court of the State of Hawaii, as applicable, pursuant to Section 15-15-92, Hawaii Administrative Rules.

Done at Honolulu, Hawaii, this 8th day of August, 2003, per motion on August 7, 2003.

APPROVED AS TO FORM

Deputy Attorney General

LAND USE COMMISSION
STATE OF HAWAII

By _____
LAWRENCE N.C. ING
Chairperson and Commissioner

By _____
P. ROY CATALANI
Vice-Chairperson and Commissioner

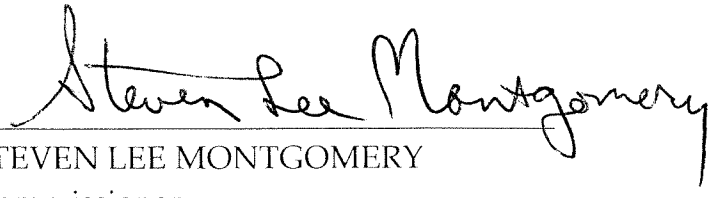
By _____
BRUCE A. COPPA
Commissioner

By ABSENT
PRAVIN DESAI
Commissioner

By _____
ISAAC FIESTA, JR.
Commissioner

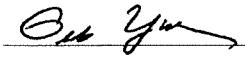
ADOPTION OF ORDER

The undersigned Commissioners, being familiar with the record and proceedings, hereby adopt and approve the foregoing ORDER this 7th day of August, 2003. This ORDER and its ADOPTION shall take effect upon the date this ORDER is certified and filed by this Commission.

By 
STEVEN LEE MONTGOMERY
Commissioner

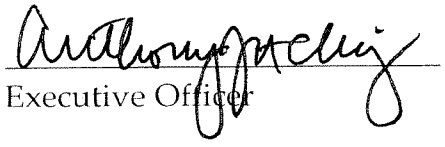
By 
RANDALL F. SAKUMOTO
Commissioner

By ABSENT
RAE MCCORKLE SULTAN
Commissioner

By 
PETER YUKIMURA
Commissioner

Filed and effective on
August 8, 2003

Certified by:


Executive Officer

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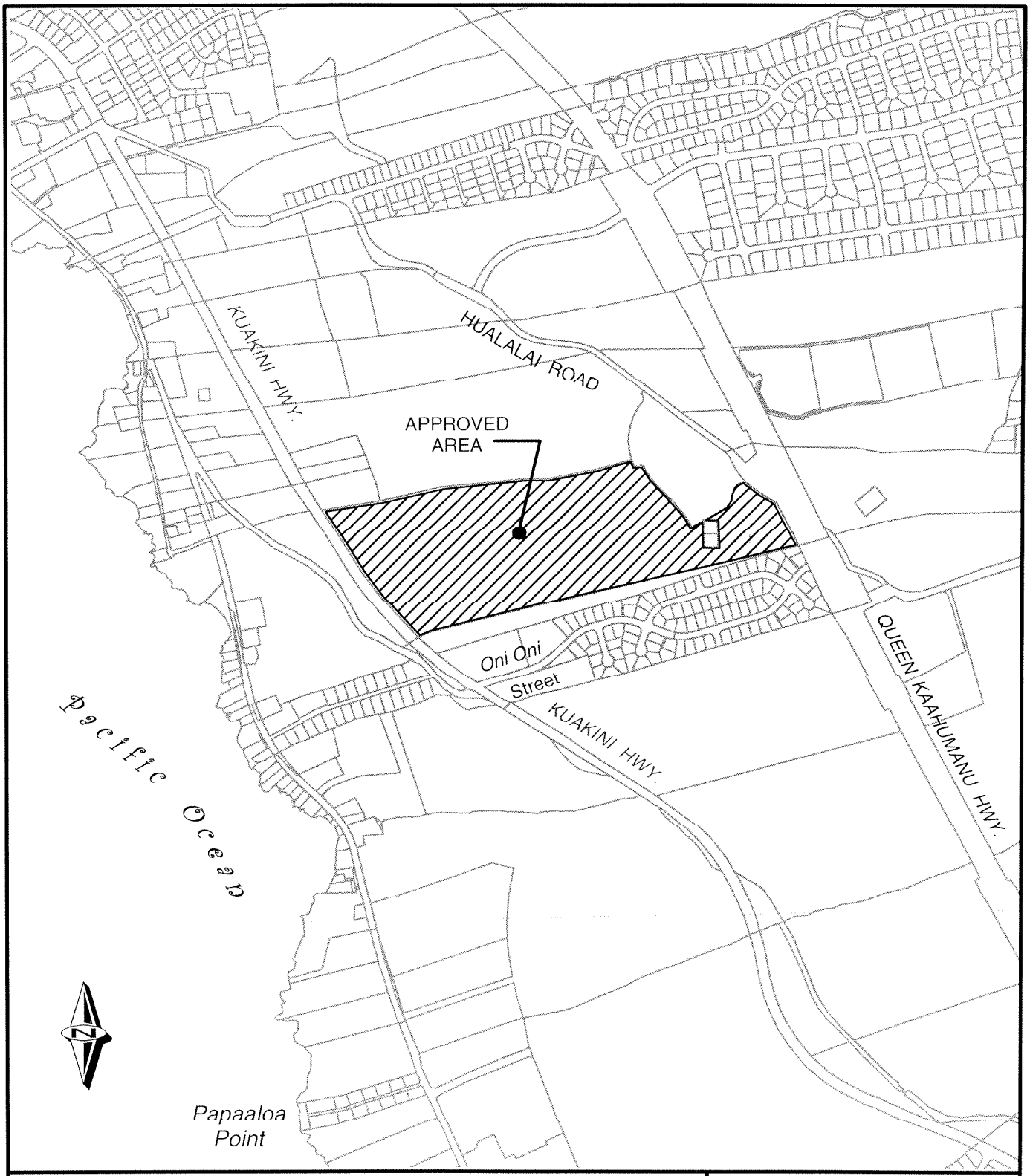
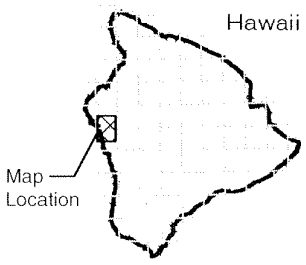


A02-737 UNIVERSITY OF NATIONS BENCORP

LOCATION MAP

TMK No: 7-5-10: 85 & 7-5-17: 06
HUALALAI, NORTH KONA, HAWAII
SCALE: 1" = 1,000 ft.

EXHIBIT "A"



BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of	)	DOCKET NO. A02-737
	)	
U of N BENCORP	)	CERTIFICATE OF SERVICE
	)	
To Amend the Agricultural Land Use District to the Urban Land Use District for approximately 62 acres, Tax Map Key Nos.: (3) 7-5-10:85 and 7-5-17:06 situate at Waiaha 1st, North Kona, Island, County and State of Hawaii.	)	
_____	)	

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Findings of Fact, Conclusions of Law, and Decision and Order for a State Land Use District Boundary Amendment and Exhibit A was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by regular or certified mail as noted:

DEL. MARY LOU KOBAYASHI
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. JOHN CHANG, Esq.
Deputy Attorney General
Hale Auhau, Third Floor
425 Queen Street
Honolulu, Hawaii 96813

CERT. STEVEN S. C. LIM, Esq.
Carlsmith Ball LLP
121 Waianuenue Avenue
Hilo, Hawaii 96720

CERT. CHRISTOPHER J. YUEN, Director
Planning Department
County of Hawaii
101 Pauahi Street, Suite 3
Hilo, Hawaii 96720

CERT. LINCOLN ASHIDA, Esq.
Corporation Counsel
County of Hawaii
101 Aupuni Street, Suite 325
Hilo, Hawaii 96720-4262

CERT. MARK R. SPENGLER, President and CEO
University of the Nations Bencorp
75-165 Hualalai Road, Second Floor
Kailua-Kona, Hawaii 96740

CERT. GEORGE ATTA, AICP
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dated: Honolulu, Hawaii, August 8, 2003.

ANTHONY J. H. CHING
Executive Officer

Appendix B

Order Granting Petitioner's Motion Requesting the Land Use Commission (a) To be the Accepting Authority for an EIS; (b) Determine that the Proposed Action Warrants the Preparation of an EIS, to be Initiated with the Preparation of an EISPN and Certificate of Service, February 2021

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In the Matter of the Petition of U of N BENCORP To Amend the Agricultural Land Use District to the Urban Land Use District for approximately 62 acres, Tax Map Key Nos.: (3) 7-5-10:85 and 7-5-17:06 situated at Wai`aha 1st, North Kona, Island, County and State of Hawaii.	DOCKET NO. A02-737 ORDER GRANTING PETITIONER'S MOTION REQUESTING THE LAND USE COMMISSION (A) TO BE THE ACCEPTING AUTHORITY FOR AN ENVIRONMENTAL IMPACT STATEMENTT; (B) DETERMINE THAT THE PROPOSED ACTION WARRANTS THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT, TO BE INITIATED WITH THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE; AND CERTIFICATE OF SERVICE

ORDER GRANTING PETITIONER'S MOTION REQUESTING THE LAND USE COMMISSION (1) TO BE THE ACCEPTING AUTHORITY FOR AN ENVIRONMENTAL IMPACT STATEMENT; (2) DETERMINE THAT THE PROPOSED ACTION WARRANTS THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT, TO BE INITIATED WITH THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

AND

CERTIFICATE OF SERVICE

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii

2/18/2021 by

Executive Officer

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In the Matter of the Petition of U of N BENCORP To Amend the Agricultural Land Use District to the Urban Land Use District for approximately 62 acres, Tax Map Key Nos.: (3) 7-5-10:85 and 7-5-17:06 situated at Wai`aha 1st, North Kona, Island, County and State of Hawaii.	DOCKET NO. A02-737 ORDER GRANTING PETITIONER'S MOTION REQUESTING THE LAND USE COMMISSION (A) TO BE THE ACCEPTING AUTHORITY FOR AN ENVIRONMENTAL IMPACT STATEMENTT; (B) DETERMINE THAT THE PROPOSED ACTION WARRANTS THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT, TO BE INITIATED WITH THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE; AND CERTIFICATE OF SERVICE

ORDER GRANTING PETITIONER'S MOTION REQUESTING THE LAND USE COMMISSION (1) TO BE THE ACCEPTING AUTHORITY FOR AN ENVIRONMENTAL IMPACT STATEMENT; (2) DETERMINE THAT THE PROPOSED ACTION WARRANTS THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT, TO BE INITIATED WITH THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

AND

CERTIFICATE OF SERVICE

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In the Matter of the Petition of U of N BENCORP To Amend the Agricultural Land Use District to the Urban Land Use District for approximately 62 acres, Tax Map Key Nos.: (3) 7-5-10:85 and 7-5-17:06 situated at Wai`aha 1st, North Kona, Island, County and State of Hawaii.	) DOCKET NO. A02-737)) ORDER GRANTING PETITIONER'S) MOTION REQUESTING THE LAND) USE COMMISSION (A) TO BE THE) ACCEPTING AUTHORITY FOR AN) ENVIRONMENTAL IMPACT) STATEMENT; (B) DETERMINE THAT) THE PROPOSED ACTION WARRANTS) THE PREPARATION OF AN) ENVIRONMENTAL IMPACT) STATEMENT, TO BE INITIATED WITH) THE PREPARATION OF AN) ENVIRONMENTAL IMPACT) STATEMENT PREPARATION NOTICE

ORDER GRANTING PETITIONER'S MOTION REQUESTING THE LAND USE COMMISSION (1) TO BE THE ACCEPTING AUTHORITY FOR AN ENVIRONMENTAL IMPACT STATEMENT; (2) DETERMINE THAT THE PROPOSED ACTION WARRANTS THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT, TO BE INITIATED WITH THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

On January 21, 2021, the University of the Nations Kona Inc., ("Petitioner") filed a Motion Requesting The Land Use Commission (A) To Be The Accepting Authority For An Environmental Impact Statement; (B) Determine That The Proposed Action Warrants The Preparation Of An Environmental Impact Statement, To Be Initiated With The Preparation Of An Environmental Impact Statement Preparation

Notice ("Motion"), pursuant to Hawai`i Administrative Rules ("HAR") §§15-15-70, 11-200.1-4, 11-200.1-5,11-200.1-14, and Hawai`i Revised Statutes ("HRS") §343-5(a)(1).

On March 23, 2020, Petitioner filed a Motion to Amend Findings of Fact, Conclusions of Law and Decision and Order for Land Use District Boundary Amendment dated August 8, 2003. ("Petition").

In its Motion to Amend , Petitioner proposes to revise the land use plan and development proposal for the approximately 62 acres of land ("Petition Area") in the State Land Use Urban District at Wai`aha, North Kona, County and State of Hawai`i, to allow for expansion of the existing campus in the Petition Area to accommodate its projected future growth.

Petitioner notes that before the Commission can act on the Motion to Amend, UNK must first comply with HRS Chapter 343 Hawai`i Revised Statutes.

In its Motion, Petitioner requested that the State Land Use Commission ("Commission") (A) determine that it will be the accepting authority for the environmental assessment under HRS Chapter 343; and (B) determine, through its judgement and experience, that an Environmental Impact Statement ("EIS") is warranted and that the environmental review process should be initiated by the preparation of an Environmental Impact Statement Preparation Notice ("EISPN").

On January 29, 2021, the State Office of Planning ("OP") filed a written response expressing no opposition to Petitioner's Motion.

On February 1, 2021, the County of Hawai`i Planning Department ("Planning Department") noted that it had reviewed UNK's Motion with its associated documents, including the EISPN and was in support of it.

On February 6, 2021, the Commission met via ZOOM virtual meeting platform, to determine (A) whether this Commission should be the accepting authority pursuant to HRS Chapter 343; (B) whether the proposed action may have a significant effect upon the environment to warrant the preparation of an EIS; and (3) whether to authorize Petitioner to prepare an EISPN pursuant to HRS §343-5(e). Derek Simon, Esq., appeared on behalf of Petitioner. Diana Mellon-Lacey, Esq., Zendo Kern, Maija Jackson and Jeff Darrow appeared on behalf of the Planning Department. Bryan Yee, Esq., and Rodney Funakoshi were present on behalf of OP.

At the meeting, Petitioner summarized its position in support of its Motion that this Commission is the appropriate accepting authority for the EIS pursuant to HRS Chapter 343, that the proposed action may have a significant effect upon the environment such that an EIS is likely to be required, and that Petitioner be allowed to proceed directly to the preparation of an EIS commencing with the preparation of an EISPN.

Both OP and the Planning Department stated that they had no objections to Petitioner's Motion.

Following discussion, a motion was made and seconded to have this Commission (A) agree to be the accepting authority pursuant to HRS chapter 343; (B) find that the proposed action may have a significant effect upon the environment to warrant the preparation of an EIS and authorized Petitioner to prepare an EISPN pursuant to HRS §343-5(e). The Commission also authorized the Commission's Executive Officer to notify and submit a record of the Commission's decision to Petitioner and the State Office of Environmental Quality Control ("OEQC"), and to sign the Order on this matter on behalf of the Commission. There being a vote tally of 8 ayes and 0 nays the motion carried.

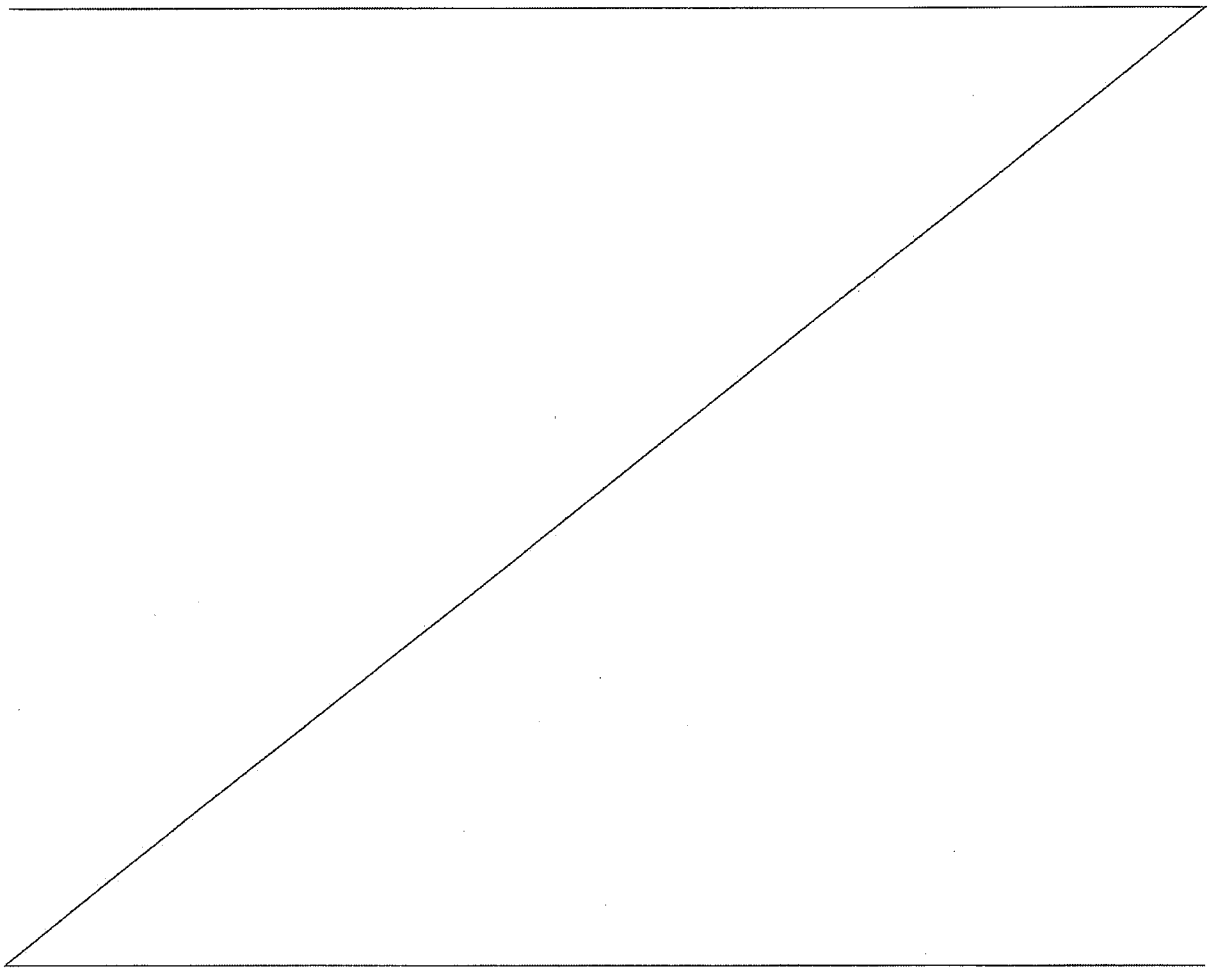
ORDER

This Commission, having duly considered Petitioner's Motion, the comments of OP and the Planning Department, and a motion having been made at its meeting on February 6, 2021, via ZOOM virtual interactive conference platform, and the motion having received the affirmative votes required by HAR §15-15-13, and there being good cause for the motion,

HEREBY ORDERS (A) that it agrees to be the accepting authority pursuant to HRS Chapter 343; (B) that the proposed action may have a significant effect upon the environment to warrant the preparation of an EIS; and that Petitioner is authorized to prepare an EISPN pursuant to HRS §343-5(e).

IT IS ALSO ORDERED that Petitioner shall make the EISPN available for a 30-day public review and comment period pursuant to HRS §343-5(e) and HAR §11-200.1-4.

IT IS FURTHER ORDERED that the Commission's Executive Officer shall notify and submit a record of the Commission's decision to Petitioner and the OEQC, and shall sign the Order on this matter on behalf of the Commission.



ADOPTION OF ORDER

This ORDER shall take effect upon the date this ORDER is certified by this Commission.

Done at Honolulu, Hawai`i, this 18th, day of February, per motion on February 6, 2021.

LAND USE COMMISSION
STATE OF HAWAI`I

APPROVED AS TO FORM

Deputy Attorney General

By_____
DANIEL ORODENKER
Executive Officer

Filed and effective on:

2/18/2021

Certified by:

DANIEL ORODENKER
Executive Officer

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In the matter of the Motion of U of N BENCORP To Amend the Agricultural Land Use District to the Urban Land Use District for approximately 62 acres, Tax Map Key Nos.: (3) 7-5-010: 085 and 7-5-017: 006 situated at Wai`aha 1st, North Kona, County and State of Hawai`i	)	DOCKET NO. A02-737 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a certified copy of the ORDER GRANTING PETITIONER'S MOTION REQUESTING THE LAND USE COMMISSION (1) TO BE THE ACCEPTING AUTHORITY FOR AN ENVIRONMENTAL IMPACT STATEMENT; (2) DETERMINE THAT THE PROPOSED ACTION WARRANTS THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT, TO BE INITIATED WITH THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE was served upon the following by depositing the same in the U. S. Postal Service by registered or certified mail as noted:

DEL. MARY ALICE EVANS, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawai'i 96804-2359

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Deputy Attorney General
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Attorney for State Office of Planning

CERT. JULIE ANJO, Esq.
Office of General Counsel
75-5851 Kuakini Highway #452
Kona, Hawai`i 96740
Co-Counsel for
UNIVERSITY OF THE
NATIONS, KONA, INC.

CERT. ZENDO KERN, Director
County of Hawai'i, Planning Department
Aupuni Center
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Hilo, Hawai'i 96720

CERT. JOSEPH K. KAMELAMELA, Esq.
Department of the Corporation Counsel
Hilo Lagoon Center
101 Pauahi Streeet, Suite 325
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Department of Planning

CERT. CARLSMITH BALL LLP
STEVENS S.C. LIM 2505
KATHERINE A. GARSON 5748
DEREK B. SIMON 10612
ASB Tower Suite 2100
1001 Bishop Street
Honolulu, HI 96813
Co-Counsel for
UNIVERSITY OF THE
NATIONS, KONA, INC.

Dated: Honolulu, Hawai'i, February 18, 2021

DANIEL E. ORODENKER
Executive Officer

Appendix C

Preliminary Engineering Assessment, December 2023

PRELIMINARY ENGINEERING REPORT

For:
University of the Nations, Kona
75-5952 Kuakini Highway
Kailua-Kona, Hawaii 96740

TMKs: (3) 7-5-010:003, :085 and (3) 7-5-017:006

Prepared for:

University of the Nations, Kona
75-5952 Kuakini Highway
Kailua-Kona, Hawaii 96740

Prepared by:

111 South King Street, Suite 170
Honolulu Hawaii, 96813
Phone: (808) 523-5866

December 2023

Contents

FIGURES

ATTACHMENTS

ABBREVIATIONS AND ACRONYMS

CWDA	Critical Wastewater Disposal Area
CZM	Hawai‘i Coastal Zone Management
CZMA	Coastal Zone Management Act
DBEDT	State of Hawai‘i Department of Business Economic Development and Tourism
DHHL	State of Hawai‘i Department of Hawaiian Homelands
DLNR	State of Hawai‘i Department of Land and Natural Resources
DOH	State of Hawai‘i Department of Health
DWS	County Department of Water Supply
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
HAR	Hawai‘i Administrative Rules
HCC	Hawai‘i County Code
HELCO	Hawai‘i Electric Light Company, Inc.
HRS	Hawai‘i Revised Statutes
HTCO	Hawaiian Telcom
kV	Kilovolt
mgd	Million gallons per day
MP	Milepost
msl	mean sea level
NEPA	National Environmental Policy Act
NGPC	Notice of General Permit Coverage
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination Systems
NRCS	U.S. Department of Agriculture Natural Resources Conservation Services
NWS	National Weather Service
OEQC	Office of Environmental Quality Control
OTWC	Oceanic Time Warner Cable
ppm	parts per million
ROW	Right-of-Way
SHPD	State Historic Preservation Division
SMA	Special Management Area
TIAR	Traffic Impact Analysis Report
TWT	TW Telecom
UNK	University of Nations Kona
USGS	United States Geological Survey
WWTP	Wastewater Treatment Plant

1 Introduction

1.1 PROJECT DESCRIPTION

University of the Nations, Kona, Inc. (UNK) is a 501(c)(3) non-profit corporation and faith-based educational institution located in the North Kona District, County of Hawai'i and just south of the town of Kailua-Kona (see **Figure 1, Project Location Map)**. The current campus encompasses 40 acres, bounded by privately-owned, undeveloped land to the north, County-owned Kuakini Highway to the west, County-owned Hualalai Road and privately-owned condos to the east, and the undeveloped land owned by UNK to the south (see **Figure 2, Existing Site Plan**).

UNK proposes a campus expansion encompassing TMK parcels 7-5-010:003, :085 and (3) 7-5-017:006 totaling 102.3 acres (see **Figure 3, TMK Parcel Map**) including the present campus and two parcels which abut it to the south. The proposed expansion includes the addition of a K-12 school, university-level classroom spaces, athletic facilities, and housing for students and staff members.

1.1.1 EXISTING USES

The project parcels are presently vacant undeveloped land which enclose two isolated parcels containing potable water tanks, operated by the Hawaii County Department of Water Supply. Properties surrounding the project site have been developed into commercial, community recreation and residential uses.

Lands surrounding the two parcels of the proposed expansion to the north, south and west, are designated within the State Land Use Urban District (see **Figure 4, State Land Use District Map**). At the County level, parcel TMK :003 is designated Apartment, :085 is designated A-1a Agricultural, and parcel :006 is split zoned RD-3.5 and RS- 7.5 as shown in **Figure 5, County of Hawaii Zoning Map**.

1.1.2 PROPOSED USES

UNK has been successful in establishing and growing its programs, such that the expansion of the campus onto the adjoining 62-acre proposed expansion area is necessary to support the projected growth. G70 prepared a 2023 UNK Master Plan Update for campus expansion in three phases with 5-10 years allocated for each phase.

The existing UNK campus, future buildings and projects fall into three categories as shown schematically in **Figure 6 Concept Master Plan.**

Space allocations over three planned development phases are tabulated below.

Phase 1 – 5-10 Years	Footprint (SF)	Acres
Discipleship Learning Center		
Chapel	3,629	0.1
Instruction Bldgs. (1)	9,056	0.2
Student Resident Dormitory Bldgs. (3)	19,117	0.4
Lower School		
Instruction Building	8,096	0.2
Café	5,250	0.12

Maintenance/Storage Facilities		
Maintenance/Storage Warehouse	3,136	0.07
Subtotal Building Footprint Area	48,284	1.1
Roadway Connections to Existing Campus Site and Existing Access Points	32,653	0.7
ADA Compliant Pathways	22,121	0.5
Subtotal Roadway & Pathway Area	54,774	1.3
Parking Area for Instruction and Dormitories	29,197	0.7
Parking Area for Café, Meditation Garden, Lower School	16,832	0.4
Parking Area for upper Dormitory Bldgs.	24,735	0.6
Subtotal Parking Area	70,764	1.6
Areas above upper Dormitories, Café, Meditation Garden, Lower School, Instructional, Campus Courtyard	839,871	19.3
Discipleship Learning Center Courtyard	45,000	1.0
Lower School Play Field	22,774	0.5
Archaeological Preservation Sites	31,250	0.7
Subtotal Open Space/Pervious Area	938,895	7.0
TOTAL PHASE 1 AREA	**1,112,717**	**25.5**

Phase 2 – Beyond 10 Yrs.	**Footprint (SF)**	**Acres**
Discipleship Learning Center		
Student Resource Center	8,770	0.2
Instruction Building (1)	6,198	0.1
Student Resident Dormitory Bldgs. (3)	19,127	0.4
Long-Term Staff Dormitories (5)	31,103	0.7
Community Athletic Complex		
Athletic Courts	31,384	0.7
Gym (Community)	9,800	0.2
Locker Rooms	4,345	0.1
Cross Fit Gym	9,856	0.2
Middle School		
Instruction Bldgs.	11,354	0.3
High School		
Instruction Bldgs.	13,599	0.3
Maintenance/Storage Facilities		
Maintenance/Storage Warehouse	5,000	0.11
Garage/Storage Warehouse	5,208	0.1
Food & Supply Storage Warehouse	18,120	0.4
Subtotal Building Footprint Area	173,864	4.0
Roadways and Pathways	163,425	3.8
Subtotal Roadway & Pathway Area	163,425	3.8
Parking Area for upper Dormitory Bldgs.	24,735	0.6
Parking Area for Community Athletic Complex	61,130	1.4
Parking for Handicap	3,287	0.1
Subtotal Parking Area	89,152	2.0
Community Athletic/Soccer Field	102,249	2.3
Practice Field	39,853	0.9
Middle School Play Field	16,560	0.4

Lawn Areas and Landscaping	520,978	12.0
Subtotal Open Space/Pervious Area	679,640	15.6
TOTAL PHASE 2 AREA	**1,106,081**	**25.4**

Phase 3 – Beyond 20 Yrs.	**Footprint (SF)**	**Acres**
Discipleship Learning Center		
Instruction Bldgs. (2)	17,718	0.4
Student Resident Dormitory Bldgs. (6)	38,254	0.9
Community Athletic Complex		
Aquatic Center Pool Complex	17,100	0.4
MULTIPURPOSE COMPLEX WITH AMPHITHEATER		
Complex	68,889	1.6
Amphitheater	17,817	0.4
Theater	6,599	0.2
Discovery Center		
Exhibit Bldgs.	19,008	0.4
Lower School		
Instruction Bldgs.	8,096	0.2
Middle School		
Instruction Bldgs.	11,412	0.3
High School		
Instruction Bldgs.	10,400	0.2
Subtotal Building Footprint Area	215,293	4.9
Roadways and Pathways	36,442	0.8
Subtotal Roadway & Pathway Area	36,442	2.9
Parking Area for Multipurpose and Discovery Center	46,644	1.1
Subtotal Parking Area	46,644	1.1
Lower School Play Field	26,634	0.6
Open Space and Landscaping	286,296	6.6
Subtotal Open Space/Pervious Area	312,930	7.2
TOTAL PHASE 3 AREA	**611,309**	**16.1**

Current and estimated campus population growth are tabulated below.

	Current*		Phase 1		Phase 2		Phase 3	
PK - 12 Children Total	**294**		**340**	59%	**469**	82%	**575**	100%
PK - 12 Children Commuting	148		110		155		175	100%
PK - 12 Children Dorming	146		230		314		400	100%
University Students Total	**480**	40%	**718**	60%	**955**	80%	**1,200**	100%
University Students Commuting	17		11		6		-	100%
University Students Dorming	463		706		949		1,200	100%
TOTAL Children & Students	**774**	44%	**1,057**	60%	**1,424**	80%	**1,775**	100%
TOTAL Children and Students Commuting	165		121		161		175	100%
TOTAL Children and Students Dorming	609		936		1,263		1,600	100%
Staff Total (NIC Staff on outreach)	**602**	75%	**667**	83%	**716**	90%	**800**	100%
Staff Commuting	322		282		225		200	100%
Staff Dorming	280		386		491		600	100%
Mission Builders, Volunteers, Speakers, Seminar Guests, Visitors,	**25**	8%	**115**	38%	**207**	69%	**300**	100%
Commuting	5		3		2		-	100%
Dorming	20		112		205		300	100%
Total Commuting	492		406		387		375	100%
Total Dorming	909	36%	1,434	57%	1,959	78%	2,500	100%
Total Campus Population	**1,401**	49%	**1,841**	64%	**2,347**	82%	**2,875**	100%

1.1.3 CLIMATE

The project site is located on the leeward side of Hualalai along the Kona coast. Morning winds are typically light, becoming onshore breezes from mid-day to sunset. Rainfall is relatively light with the chance of rainfall increasing in the summertime.

1.1.4 TOPOGRAPHY AND GEOLOGY

Hualalai is the westernmost, third youngest and third most active volcano on the island of Hawaii. It last erupted about 220 years ago, and much of the site is covered in ʻaʻā rock. The project area is classified by USGS as Lava Hazard Zone 4.

The Site generally slopes from mauka to makai in the east to west direction. Elevations onsite range from approximately 360 to 90 feet above mean sea level (MSL) with the lowest point located at the main campus entrance along Kuakini Highway. The site generally slopes at about 7% from Queen Kaahumanu Highway to Kuakini Highway but local slopes may exceed that amount in limited areas as shown in **Figure 7, Existing Grading and Drainage Pan.**

1.1.5 SOILS

The USDA Natural Resources Conservation Service (NRCS) identifies soils at both the existing campus and expansion area in two soil groups: Waiaha-Punaluu-Lava flows complex and Kainaliu cobbly silty clay loam. Both soils are typically well-drained silty clay loams that formed in basic volcanic ash over ʻaʻā lava (see **Figure 8, Soils Map**). Slopes are ten to 20 percent and the soils are well drained with very low to low runoff. Permeability is moderately rapid in the soil and very slow in the underlying bedrock. Both are members of Hydrologic Soil Group B.

The ground surface is primarily covered by very rough and uneven ʻaʻā lava flows with some pāhoehoe and cinder land. Where present, the soil layer typically consists of a thin layer of organic material. Due to the

minimal rainfall and permeability of the lava rock, the existing ground surface has not eroded, and there are no defined drainageways through the property.

Due to the predominance of lava flows on site, the earthwork activities may include pneumatic hammering to excavate lava rock and rock crushing operations to produce aggregate material for use during construction. Import of soil will be required for all areas that will be landscaped due to the lack of available topsoil on site.

The proposed development and final grades shall closely follow the existing topography to minimize earthwork activities. Earthwork activities will include roadway excavation and embankment, rough grading and landscaping, utility installation and access roads, and site grading for educational and related uses.

2 Roadways

2.1 EXISTING ROADWAYS

The campus is accessed via a gated driveway off Kuakini Highway through a security booth and key card entry that allows controlled and monitored access to the campus. A series of onsite roadways and parking lots connect different areas of interest as shown in **Figure 2, Existing Site Plan**.

The privately-owned Hualalai Village condominiums located just mauka of the campus have privately-owned perimeter roads that abut the UNK campus. A portion of this roadway is on UNK property and there are currently two existing access points to the campus.

A traffic consultant prepared a Mobility Analysis Report (MAR)[1] for the phases of the campus development. The MAR found that seven of eight existing intersections operate at Level of Service (LOS) D or better during AM and PM peak hours. The intersection of Kuakini and Queen Ka‘ahumanu Highways operates at LOS E for the eastbound left turn movement in the AM peak hour.

2.2 PROPOSED ROADWAYS

Additional roadways and parking facilities will be constructed in each phase of the project to integrate the expansion area into the Campus and for more holistic circulation and operations onsite. The complete proposed development is shown in **Figure 6, Concept Master Plan**.

Along its mauka boundary, the expansion area lies adjacent to Hualalai Road and Queen Kaahumanu Highway. The State of Hawaii Department of Transportation (HDOT) has not confirmed if there are any mapped access restrictions along the borderlines along Queen Kaahumanu Highway, but the campus is located within 250 feet of the Hualalai Road intersection and this limited distance makes a connection from the campus to Queen Kaahumanu Highway infeasible. Additionally, there is a steep bank separating the highway and the campus and the considerable elevation change makes a driveway undesirable.

UNK is primarily a walking campus with primary gathering points or circulation hubs at the Cafeteria, Banyan Tree Café and the Ohana Courts which frequently host campus-wide events. A vast majority of students are anticipated to live on campus, so most traffic will be comprised of staff and visitors. A system of walkways, ramps, stairs, trails and accessible routes will be developed to provide a network of

[1] “Mobility Analysis Report for the University of the Nations Kona Master Plan Update, Kona, HI” Fehr & Peers, June 19, 2023

transportation routes through campus. Vehicular and non-vehicular crossing points will be designed and designated along the primary and secondary driveways to provide safe points of intersection.

The existing Kuakini Highway secured point of entry with a gate, guard and card key system will remain the primary access to the Campus for staff and students, and another unsignalized vehicular entry point from Kuakini Highway will be provided.

A secondary access connection will provide mauka-to-makai access via joint use of the Hualalai Village condominium roadway connection to Kuakini Highway. This will be a limited access point, possibly restricted to emergency and maintenance access with some form of security control or presence. This access point may be utilized during campus-wide events.

Interior access throughout the expansion area will be constructed in three phases as shown in **Figure 6**, linking new construction to the mauka-makai road. Secondary driveways will be two-way, two-lane paved access roads, one of which will provide a complete loop around the expansion area to enable both vehicular and fire/emergency access throughout the campus. The driveways will allow staff and student vehicular movement to parking lots distributed throughout the expansion area. Secondary driveways may be limited access and not open to public use.

Tertiary driveways will be primarily non-vehicular access ways designated for staff and student pedestrian, bicycle or cart access through the campus. These driveways accommodate fire/emergency access vehicles, but may be designed with permeable pavers, grass pavers or other special pavements more suited to a walkway or promenade through campus.

The MAR evaluated traffic flows forecast for each phase and made recommendations for improvements:

- Kuakini/Main Campus Driveway: Install left turn refuge lane serving westbound left turn traffic exiting the campus. No additional improvements were needed in Phases 2 and 3.
- Queen Kaahumanu/Hualalai Road: Traffic signal not required in Phase 2 but may be needed to provide adequate gaps in traffic to enhance safety. Intersection should be re-evaluated prior to Phase 2.
- Queen Kaahumanu/Kuakini Highway: Traffic signal not warranted in Phase 2 but may be needed to provide adequate gaps in traffic to enhance safety. Intersection should be re-evaluated prior to Phase 2.
- Kuakini/Campus North Entrance: Will operate at LOS 3 in Phase 1 during the PM peak hour. It does not warrant a traffic signal but should be restriped. A traffic signal is not warranted in Phase 2 but may be needed to provide adequate gaps in traffic to enhance safety.

Additional improvements are suggested for multi-modal access at the existing entry driveway, and for on-campus pedestrian and bicycle traffic improvements.

3 GRADING AND EROSION CONTROL

3.1 EXISTING CONDITIONS

3.1.1 GRADING

The UNK site and proposed expansion area soils consist of a thin surface layer broken by outcrops of the underlying rock, with slopes of 10 to 20 percent, making site excavation expensive. Existing improvements

are constructed generally with a minimum of excavation. Proposed improvements will similarly be designed to largely minimize excavation.

3.1.2 EROSION CONTROL

Erosion and sedimentation requirements will be met by use of construction Best Management Practices (BMPs) implemented to minimize and control erosion of soils and dust during construction. BMPs are pollution control measures, applied to nonpoint sources, on-site or off-site, to control erosion and the transport of sediments and other pollutants which have an adverse impact on waters of the state. Construction BMPs are temporary measures installed before construction commences and removed after construction completion. Potential construction BMPs include but are not limited to gravel entrance, water trucks, dust screen, silt fence, retention basins, diversion berm/ditches, and grading procedures that follow Hawaii County Code Chapter 10 – Erosion and Sediment Control.

4 DRAINAGE

4.1 EXISTING CONDITIONS

4.1.1 FLOODING AND TSUNAMI HAZARDS

The Federal Emergency Management Agency's Flood Rate Insurance Maps indicate that UNK is within Zone X, which represents areas with minimal flood hazards. Zone X is defined as areas determined to be outside the 500-year flood limits.

4.1.2 COUNTY OF HAWAII DRAINAGE STANDARDS

The proposed drainage system hydrologic criteria are evaluated using the Rational Method, in conformance with Hawaii County *Storm Drainage Standards*, except that NOAA Atlas 14 Volume 4 v2.1 is used in lieu of Plates 1 and 2 (Intensity of 1-hr Rainfall for 10 and 50 year Return Periods), which provide isopluvial (rainfall intensity) maps from interpolation of frequency estimates of a larger sample of rain stations with longer years of record than the *Storm Drainage Standards*.

4.1.3 EXISTING HYDROLOGY

UNK has not reported drainage issues onsite. **Figure 7, Existing Grading and Drainage** depicts the present drainage patterns for the existing campus and proposed expansion area,

A drainage report prepared by Ross Engineering, Inc. for U of N Bencorp was completed in September 2002 to analyze offsite stormwater drainage conditions that affect the proposed expansion area. Concentrated stormwater run-on enters both the campus and the proposed expansion area at four locations from the mauka direction. Three culverts discharge runoff onto the proposed expansion area: an 84-inch pipe culvert crosses Queen Kaahumanu Highway and discharges runoff at the southeastern (mauka) corner of the campus and 36-inch and 30-inch culverts at the intersection of Queen Kaahumanu Highway and Hualalai Road discharge runoff onto the expansion area. On the campus, stormwater run-on sheet flows across Hualalai Road and enters the campus north of the Hualalai Village Condominiums where it enters and existing infiltration basin with six drywells and infiltrates into the ground.

Runoff from the Hualalai Village Condominiums appears to be routed to multiple drywells located onsite and along the private road along the makai edge of the condo property adjacent to the campus. It is assumed that these drywells dispose of the majority of runoff generated and collected on the condominium site and only excess runoff during large storm events flows onto the proposed expansion area.

The runoff that flows onto the proposed expansion area from the mauka culverts flows through the proposed expansion area and to an existing 24-inch culvert which conveys runoff across Kuakini Highway. Immediately downstream of the culvert, there is a series of six drywells located on TMK (3) 7-5-018:094 (owner: Walua Professional Center). No other culverts or drain structures were identified along Kuakini Highway. It is assumed run-on as well as runoff at the proposed expansion area is either disposed of by onsite or off-site drywells (across Kuakini Highway) or is slowed by heavy vegetation and natural terrain and infiltrates into the ground.

4.1.4 EXISTING DRAINAGE INFRASTRUCTURE

Runoff flowing onto the existing campus is captured in an existing infiltration basin with any overflow continuing as sheet flow through the undeveloped expansion area before flowing off the property onto (as sheet flow) or across Kuakini Highway in a 24-inch culvert.

4.2 DEVELOPED CONDITION DRAINAGE

4.2.1 DEVELOPED CONDITION HYDROLOGY

For drainage areas of 100 acres or less, the *Storm Drainage Standards* require the drainage system be designed for return periods of 10 years for runoff conditions or 50 years for sump conditions. Due to potential sumps in the developed area, the 50-year return period will be used for design of site drainage. To determine the runoff quantity for these areas, the Rational Method will be used, based on the drainage area, runoff coefficient (ground cover conditions) and the rainfall intensity for duration equal to the time of concentration.

4.2.2 LOW IMPACT DEVELOPMENT (LID) AND BEST MANAGEMENT PRACTICES (BMPS)

Runoff increase anticipated to result from development of impervious surfaces may be mitigated by infiltrating excess runoff into the ground and implementing Low Impact Development (LID) strategies and BMPs to the extent possible, such that the project will not create adverse impacts to downslope areas or nearshore waters.

LID strategies consist of storm water management methods that promote conservation of existing natural features and use of localized small-scale stormwater systems, to mimic natural hydrologic patterns, while minimizing stormwater infrastructure.

A menu of LID BMPs will be developed with various sizing criteria to aid in design of individual site elements, buildings and facilities. LID BMPs will also need to be coordinated with landscape design, irrigation design and incorporated into water resource management on project area if runoff will be harvested and reused for non-potable water uses throughout the site. Offsetting irrigation demand by rainwater capture and xeriscape design will result in significant reduction in demand for potable water, which is very limited in allocated quantity, and will reduce the size of additional infrastructure needed to serve the campus expansion.

Applicable practices and methods include:

- Minimize impervious areas, using permeable surfaces where possible, including sidewalks and roadway/driveway paving.
- Plan site around existing site features – retain and incorporate natural topography.
- Minimize grading and disturbed area – maximize existing undisturbed areas.
- Narrow roads and minimize driveway lengths/widths, wheel strips and shared driveways to minimize impervious areas.
- Sidewalks on one side of street.

- Plant trees – especially large canopies, in locations selected to accommodate future tree growth.
- Use source control of stormwater for pollutant control and groundwater recharge.
- Minimize conventional infrastructure (curb and gutter, drain inlets/catch basins and culverts).
- Utilize onsite lava rock in sumps, swales, trenches, shallow drywells, detention and retention basins.

Implementation of LID stormwater strategies will focus on storm runoff management at the source. Sizing of stormwater facilities will be site-specific, depending on land use and characteristics of individual developed drainage areas, with the intent to detain, retain and infiltrate post-development runoff onsite to the maximum extent possible.

4.2.3 DRAINAGE INFRASTRUCTURE

Developed condition drainage infrastructure requires consideration of the overall pattern of development, noting that improvements in each of the three phases will be distributed throughout the expansion area. Drainage improvements may thus need to be constructed ahead of their immediate need. The proposed improvements for the campus are depicted on **Figures 9a through 9c, Proposed Grading and Drainage Plan**. The three figures represent the proposed improvements shown by phase from Phase 1 to final buildout in Phase 3.

Given relatively steep expansion area slopes, porous surface conditions with underlying hard material and lack of apparent natural drainageways, the most practical means of runoff management will mimic the natural condition, through the use of LID BMPs focusing on minimizing creation of impervious areas, and maximizing onsite runoff retention and infiltration throughout the developed site. A system of permanent LID BMPs including rock lined sumps, swales, ditches, infiltration trenches, detention and retention basins will collect and retain runoff from smaller storm events.

For larger events, excess runoff from permanent BMPs will be discharged to primary or secondary conveyances running along the central mauka/makai road through the expansion area and along the southern perimeter road. These conveyances are envisioned to be natural unlined surface channels where possible, since those provide opportunities for additional runoff disposal through the fractured rock subgrade to attenuate peak flows and runoff volumes, and provide groundwater recharge, effectively becoming large-scale infiltration BMPs. Discharges from each channel will be routed to the existing drainage culvert crossing Kuakini Highway.

This integrated approach to stormwater management will require that site planning, building design, landscape design and other water infrastructure design be highly coordinated. Site landscaping should focus on xeriscapes, native plantings, functional and edible landscapes placed in areas in coordination with the grading and drainage plan. Building concepts will focus on integrating BMPs on the perimeter of the building in the façade, fenestration and structural and plumbing systems. Water management systems will need to account for and integrate storm water as a resource by physical capture and infiltration.

5 WATER

5.1 EXISTING CONDITIONS

UNK's water is supplied by the County of Hawaii, Department of Water Supply (DWS) from the DWS 325 reservoir with service zone limits from sea level to the 235-foot elevation. The elevations of the proposed expansion area range from approximately 90 feet msl near Kuakini Highway up to 360 feet msl.

UNK is served from two DWS meters: a 6”x3” master FM meter located near the main campus entrance along Kuakini Highway connected to a 6” DWS main in Kuakini Highway and an 8”x2” master FM meter located near the top of the center road, connected to an 8” DWS main in the Hualalai Village lower driveway. The 6”x3” meter is assigned to the TMK for the campus and the 8”x2” meter is assigned to the proposed expansion area, although currently both meters are servicing the campus. The water system is looped, and the master meters reflect two service connection points to the existing DWS system. See **Figure 10 Existing Water System**

Water is distributed onsite via a system of private water lines. The age of the existing onsite system is not specifically known but the campus was founded in 1978 and it is assumed that the infrastructure was developed no later than 1980, with expansion over the years. An 8”x2” meter assigned to the proposed expansion area was installed in 2013 to provide a second point of connection to maintain adequate pressure and flow for planned expansion of the campus.

5.2 WATER DEMAND

UNK installed water meters on 17 major buildings and irrigation meters on 21 irrigation zones to collect data relative to water consumption. Data collected was summarized and reported to DWS[2] in a memorandum from UNK dated December 14, 2023. The main conclusions of the report are:

- Average per capita resident water consumption across 12 dorm buildings over six-month study period was 30 gpcd or less.
- Kindergarten through Grade 8 students and off-campus daily visitors use 12-14 gpcd.
- Irrigation use averages 8,600 gpd or 1,000 gallons per irrigated acre.
- Cafeteria use is about 2 gpcd.
- Based on DWS bi-monthly billings, overall water consumption for maximum population of 1,158 residents equaled 39 gallons per resident per day.

The per capita water demand rates established for use for this project include irrigation demand and are based on actual consumption data and UNK analysis are as follows:

Criteria	Unit	DWS Standard Rate	UNK Adjusted Rate
Resident, including Cafeteria	gpd	80	40
Day Visitors including K-12 students, staff, guests	gpd	60	20

Based on the population projections and the approved reduced demand rates above, daily potable water demands are calculated for the current condition and future phased improvements below.

[2] University of the Nations Kona Water Usage Assessment September 2022 to March 2023

Domestic Water Demand	Current		Phase 1		Phase 2		Phase 3	
Day Users	Population	Gallons	Population	Gallons	Population	Gallons	Population	Gallons
PK-12 Commuting	148	2,960	110	2,200	155	3,100	175	3,500
University Students Commuting	17	340	11	228	6	116	-	-
Staff Commuting	322	6,440	282	5,635	225	4,500	200	4,000
Guests Commuting	5	100	3	67	2	34	-	-
Subtotals	492	9,840	406	8,130	387	7,750	375	7,500
PK-12 Students	146	5,840	230	9,193	314	12,546	400	16,000
University Students	463	18,520	706	28,248	949	37,977	1,200	48,000
Staff	280	11,200	386	15,424	491	19,648	600	24,000
Guests	20	800	112	4,496	205	8,192	300	12,000
Subtotals	909	36,360	1,434	57,361	1,959	78,362	2,500	100,000
Total Domestic Water Demand		46,200		65,491		86,112		107,500

Irrigation water requirements for the expansion area are included in the domestic water demand above based on the analyzed water demand rates provided by UNK to DWS.

UNK has submitted a request to DWS to obtain all water (including irrigation) from the DWS public water system. Due to limited capacity on that system, offsite water source development is required to provide water supply for the project. UNK does not intend to drill a well on its own property due to basal lens insufficiency, potential sea water intrusion and environmental challenges. Alternatives for the offsite water well development are described in the attached, "Memorandum from Tom Nance Water Resource Engineering, June 7, 2023".

5.2.1 PROPOSED WATER DEVELOPMENT

Hawaii County DWS has indicated that a new water source will be required to serve the proposed expansion area. The new source is presumed to be a new well capable of providing 184 gpm to the expansion area. The alternatives for the offsite water well development identified in the attached, "Memorandum from Tom Nance Water Resource Engineering, June 7, 2023" include two potential locations for a new well and reservoir to be dedicated to DWS. The two potential locations have been identified for a new well and related infrastructure, one on TMK 7-5-003:023 owned by Mr. Wheelock, and another on TMK 7-5-017:044 owned by Mr. Bolton.

UNK and Bolton have an agreement to share capacity of a proposed well planned to tap a water resource whose presence has been established by results of four test wells in the area, and which could be tapped for over 1 million gallons per day. In the event such a well does not produce potable water or has a yield too low to warrant development, a new well on the Wheelock property would have to be developed.

Exploratory well drilling and pump testing suggest that the least risky alternative is to drill and develop a well on the Wheelock property. In either case, UNK will develop an additional water source and storage offsite and dedicate the improvements to DWS in exchange for a water commitment to support the proposed campus expansion.

5.2.2 PROPOSED WATER DISTRIBUTION

Hawaii County DWS "Water System Standards" will govern layout and design of the potable water system. Significant requirements are to have looped mains wherever possible, 8-inches in diameter to provide adequate fire flow, with main valves not greater than 500 feet apart and approved fire hydrants located not farther than 300 feet apart.

The proposed schematic water distribution for the expansion area is shown in **Figures 11a through 11c, Proposed Water System Plan**. Due to the gap between the upper and lower reservoir service area

elevations, a portion of the expansion area will require connection to the DWS 595 system, whose service limits are 272 to 503 feet msl. Water service between the limits of the DWS 325 and DWS 595 reservoirs will be served from the upper reservoir via pressure reducing valves.

6 WASTEWATER

6.1 EXISTING CONDITIONS

The existing UNK sanitary wastewater collection system collects wastewater from a neighboring condo project and its own campus improvements in its sewer collection system and discharges to a sewer manhole on Kuakini Highway, near the makai site entrance (**Figure 12, Existing Wastewater System**). Wastewater is conveyed to the Kealakehe Wastewater Treatment Plant, from which treated septage is discharged to a constructed wetland located immediately south of Honokohau Small Boat Harbor, north of Kailua.

6.2 WASTEWATER FLOW PROJECTIONS

In 2019, the County of Hawaii Department of Environmental Management, Wastewater Division (DEM) approved a wastewater exemption request (DEM, December 10, 2019) to allow UNK to use reduced sewer generation rates, conditioned on installation and reporting of wastewater flows with UNK DWS water meter readings and invoices. UNK has installed and is now monitoring wastewater meters to record incoming wastewater from the neighboring Hualalai Village condominiums and flows discharged to a DEM sewer manhole on Kuakini Highway. Flow measurements from November 2022 to May 2023 suggest that wastewater flows are typically 60% to 80% of water usage (water use 20 gpcd for visitors, 35 gpcd for residents, thus wastewater generation 16 gpcd for visitors and 28 gpcd for residents). The total projected wastewater flow for both the existing campus and expanded campus wastewater flows are presented below for each development phase. This wastewater flow data was recently submitted to DEM for review and comment in response to the exemption request (UNK email May 22, 2023).

Projected Wastewater Flows	Current		Phase 1		Phase 2		Phase 3	
University Land Use	Persons	Flow	Persons	Flow	Persons	Flow	Persons	Flow
PK-12 Students	148	2,368	110	1,760	155	2,480	175	2,800
University Students	17	272	11	182	6	92	-	-
Staff	322	5,152	282	4,508	225	3,600	200	3,200
Guests	5	80	3	54	2	27	-	-
Subtotal	492	7,872	406	6,504	387	6,200	375	6,000
Residential Land Use	Persons	Flow	Persons	Flow	Persons	Flow	Persons	Flow
PK-12 Dorming Students	146	4,088	230	6,435	314	8,782	400	11,200
University Dorming Students	463	12,964	706	19,774	949	26,584	1,200	33,600
University and PK-12 Staff	280	7,840	386	10,797	491	13,754	600	16,800
Guests	20	560	112	3,147	205	5,734	300	8,400
Subtotal	909	25,452	1,434	40,153	1,959	54,854	2,500	70,000
Total Average Daily Flow		33,324		46,657		61,053		76,000

6.3 PROPOSED WASTEWATER SYSTEM

Sanitary wastewater will continue to be discharged from UNK to the Kuakini Highway sewer manhole, conveyed and treated at the Kealakehe Wastewater Treatment Plant. The County of Hawaii has confirmed[3] the UNK campus is within the service area of the Kealakehe Wastewater Treatment plant, and the plant has the capacity for the estimated additional flows from the UNK expansion, but has not made a

[3] Undated letter from County of Hawaii to UNK

commitment to treat such flows. On June 15, 2023, UNK submitted a wastewater capacity request for service for the proposed project using the project flows above for discharge from the UNK campus to the County wastewater collection system at the existing Kuakini Highway sewer manhole connection point. It is understood that the County will confirm capacity and improvement requirements when construction plans are submitted for their review and approval.

A conceptual sketch of wastewater infrastructure proposed to serve the expansion area, with a second connection to the County system along Kuakini Highway is shown in **Figures 13a through 13c, Proposed Wastewater System Plan**.

7 SOLID WASTE

7.1 EXISTING CONDITIONS

The County of Hawaii Department of Environmental Management Solid Waste Division is responsible for the operation and maintenance of the County's solid waste and recycling facilities. These facilities include a network of 21 recycling and transfer and transfer stations and two landfills. The County of Hawaii does not have a curbside pickup system and instead depends on private waste collection companies to transport waste to the nearest transfer station. The County then transports waste from the transfer stations to either the South Hilo Sanitary Landfill or the West Hawaii Sanitary Landfill in Puuanahulu. UNK is located between two existing transfer stations, the Kealakehe Transfer Station (3.1 miles northwest) and the Keauhou Transfer station (7.1 miles southeast). The West Hawaii Sanitary Landfill in Puuanahulu receives UNK solid waste.

7.2 PROPOSED WASTE GENERATION AND DISPOSAL

Hawaii County has updated the Integrated Solid Waste Management Plan (ISWMP), which evaluates the County's existing waste management practices and programs and provides options and recommendations for both short- and long-term implementation of the proposed improvements to the County's waste management system. Recommendations include programmatic improvements to reduce, reuse and recycle waste, and infrastructure improvements to upgrade, repair and reconstruct transfer stations and landfills.

The 2019 IRSWMP estimates the total Hawaii island population at 201,389 persons and total disposal weight (including recycling) for the 2017-2018 period at 283,021 pounds, or about 1.4 pounds/person-day, which rate was growing at about 4.6 percent annually. Based on those estimates, solid waste disposal based on projected campus and visitor population at the midpoint of the three development phases can be estimated in the following table.

SOLID WASTE GENERATION, TONS/DAY

	Current (2023)		Phase 1 (2030)		Phase 2 (2035)		Phase 3 (2040)	
Population Segment	Capita	Solid Waste	Capita	Solid Waste	Capita	Solid Waste	Capita	Solid Waste
Dormitories	909	0.8	1,434.0	1.7	1,959.0	2.9	2,500.0	4.7
Day Users	492	0.4	406.0	0.5	387.0	0.6	375.0	0.7
Total, tons/day =		1.2		2.2		3.5		5.4

The West Hawaii Sanitary Landfill in Puuanahulu will continue to receive UNK solid waste.

8 POWER AND COMMUNICATIONS

8.1 EXISTING CONDITIONS

Electrical service to the campus is currently provided by Hawaiian Electric (HE) and communication services are provided by both Hawaiian Tel (HTCO) and Spectrum. As State Public Utility Commission (PUC) regulated public utilities, HE and HTCO are responsible for the development of off-site facilities that meet island-wide needs, such as power generating plants and power and signal transmission lines, and facilities that serve regional needs of Kailua-Kona. Presently, the campus is served by these utilities off of Kuakini Highway. The HE electrical service is at the primary distribution voltage of 12.47kV, three phase, through a single metering point. The power is further distributed at 480/277v, 208/120v, three and single phase, to the campus buildings and facilities. This electrical infrastructure is owned and maintained by UNK.

8.2 PROPOSED ELECTRICAL SYSTEM

Electrical service for the expansion of the campus will require a service request to Hawaiian Electric. The upgrade of the existing service would likely occur in phases as each portion of the expansion area is developed. As a State Public Utility Commission (PUC) regulated public utility, HE is responsible for the development of off-site facilities that meet island-wide needs, such as power generating plants and power and signal transmission lines, and facilities that serve regional needs of Kailua-Kona. At the appropriate time a service request for the proposed improvements will be submitted to HE and the required infrastructure will be installed to serve the proposed project.

8.3 PROPOSED TELECOMMUNICATIONS

Telecommunications service for the expansion of the campus will require a service request to HTCO or Spectrum or other service provider. The upgrade of the existing service would likely occur in phases as each portion of the expansion area is developed and will likely be expanded off of the network currently on the existing campus. At the appropriate time a service request for the proposed improvements will be submitted to one or more of the telecommunications service providers and the required infrastructure will be installed to serve the proposed project.

REFERENCES

G70 International LLC, *University of the Nations, Kona, Inc. 2020 Master Plan Update*, February 2021.

County of Hawaii, Department of Public Works, *Storm Drainage Standards*, October 1972.

County of Hawaii, *County of Hawaii General Plan*, February 2005

County of Hawaii, *Integrated Resources and Solid Waste Management Plan*, 2019

County of Hawaii, Department of Water Supply, *Water Use and Development Plan Update, Hawaii Water Plan*, August 2010

County of Hawaii, Department of Water Supply, *Water System Standards*, 2002

City and County of Hawaii, Department of Public Works, Division of Wastewater Management, *Design Standards of the Department of Wastewater Management*, Volume 1, July 1993

Email from DWS to UNK, May 15, 2023

Memorandum from Tom Nance Water Resource Engineering, June 7, 2023

Memorandum to DWS from UNK, December 14, 2023

"Mobility Analysis Report for the University of the Nations Kona Master Plan Update, Kona, HI" Fehr & Peers, June 19, 2023

State of Hawaii, Department of Health, *2006 State of Hawaii Quality Monitoring and Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and The U.S. Congress Pursuant to Sections §303(D) and §305(B) Clean Water Act (P.L. 97-117),* January 11, 2008.

State of Hawaii, Department of Health, Hawaii Administrative Rules, Title 11, Chapter 62, Wastewater Systems, January 14, 2004.

State of Hawaii, Department of Health, Hawaii Administrative Rules, Title 11, Chapter 62, Appendix A, Individual and General Permit Standard Conditions, April 15, 1997.

State of Hawaii, Department of Health, Safe Drinking Water Branch, Hawaii Administrative Rules, Title 11, Chapter 23, Underground Injection Control, January 14, 2004.

State of Hawaii, Department of Health, Wastewater Branch, *Guidelines for the Treatment and Use of Recycled Water*, May 15, 2002

U.S. Department of Agriculture, Soil Conservation Service, *Soil Survey for the Island of Hawaii, State of Hawaii,* December 1972

U.S. Department of Commerce, Weather Bureau, *Technical Paper No. 43 – Rainfall Frequency Atlas of the Hawaiian Islands for Areas to 200 Square Miles, Durations to 24 Hours, and Return Periods from 1 to 100 Years*, 1962

Department of Land and Natural Resources, Flood Hazard Assessment Report for TMK (3) 7-5-010:085

U.S. Geological Survey, 7.5 Minute Topographic Map, North Kona, HI 1995

U.S. National Oceanic and Atmospheric Administration, National Weather Service, *Precipitation Frequency Atlas of the United States*, NOAA Atlas 14, Volume 4, Version 2, 2009

Websites Accessed:

State of Hawaii, Department of Business, Economic Development and Tourism
Hawaii Statewide GIS Program
http://hawaii.gov/dbedt/gis/

U.S. Department of Agriculture, Natural Resource Conservation Service
Soil Data Mart
http://soildatamart.nrcs.usda.gov/

U.S. National Oceanic and Atmospheric Administration, National Weather Service
HDSC Precipitation Frequency Data Server
http://hdsc.nws.noaa.gov/hdsc/pfds/hi/hi_pfds.html

State of Hawaii, Department of Health
Hawaii Statewide GIS Program
https://geoportal.hawaii.gov/datasets/HiStateGIS::underground-injection-control-line-uic-line/explore?location=19.627796%2C-155.973733%2C15.04

Figure 1: Project Location Map

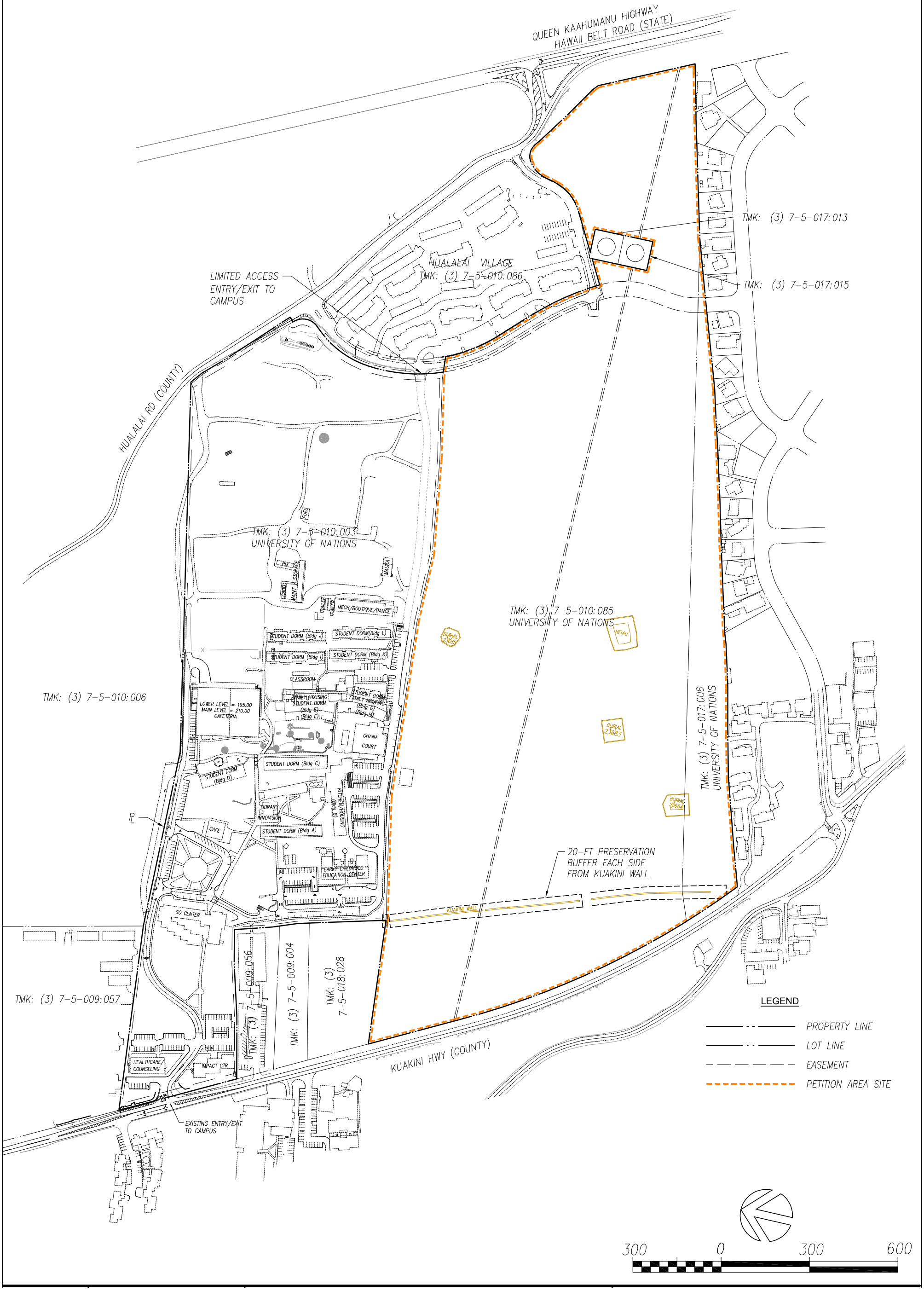


Figure 2: Existing Site Plan

Figure 3: TMK Parcel Map

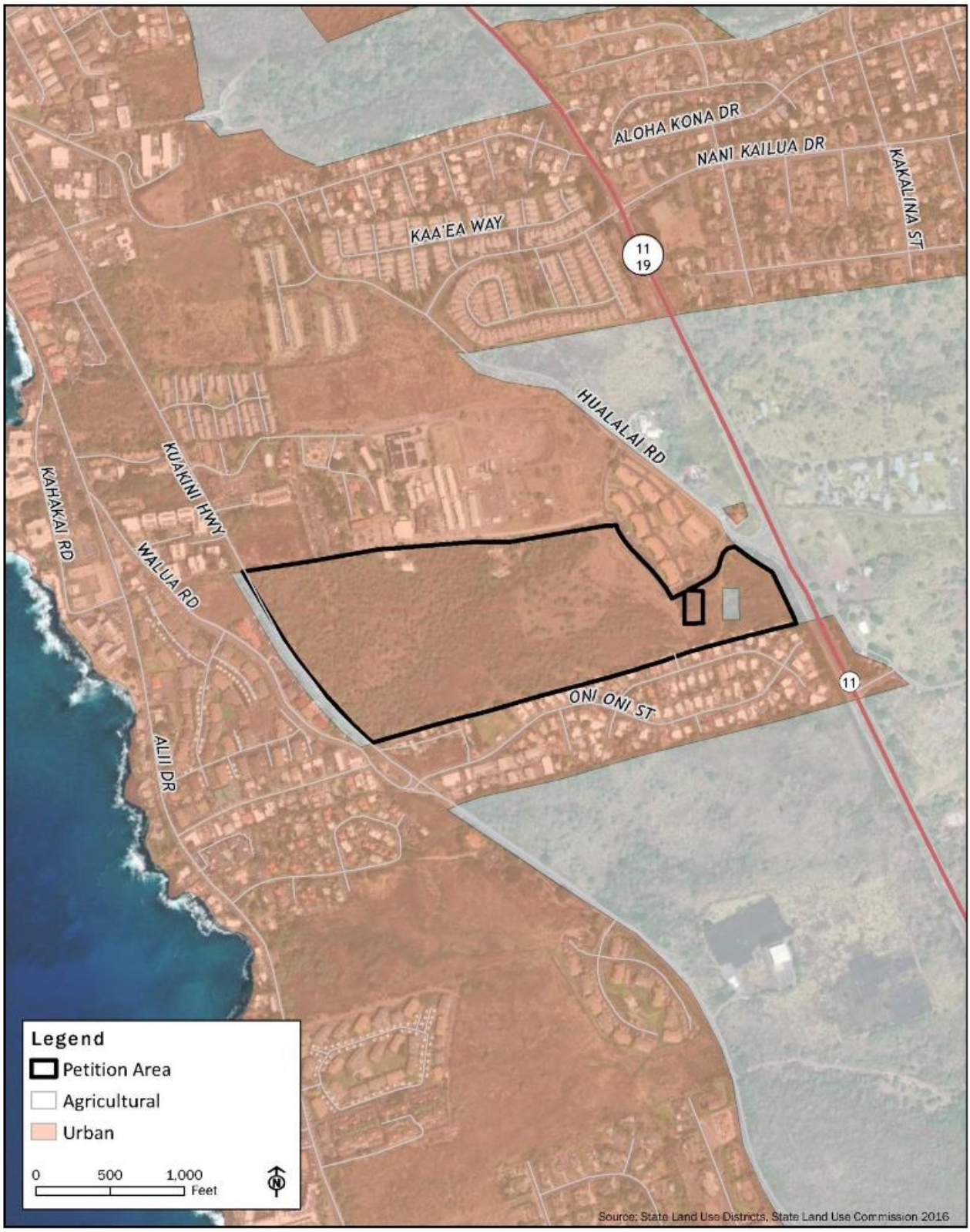


Figure 4: State Land Use District Designation Map

Figure 5: County of Hawaii Zoning Map

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED SITE FIGURE.DWG DATE: 12/20/2023 3:03 PM

LEGEND:

PHASE I

PHASE II

PHASE III

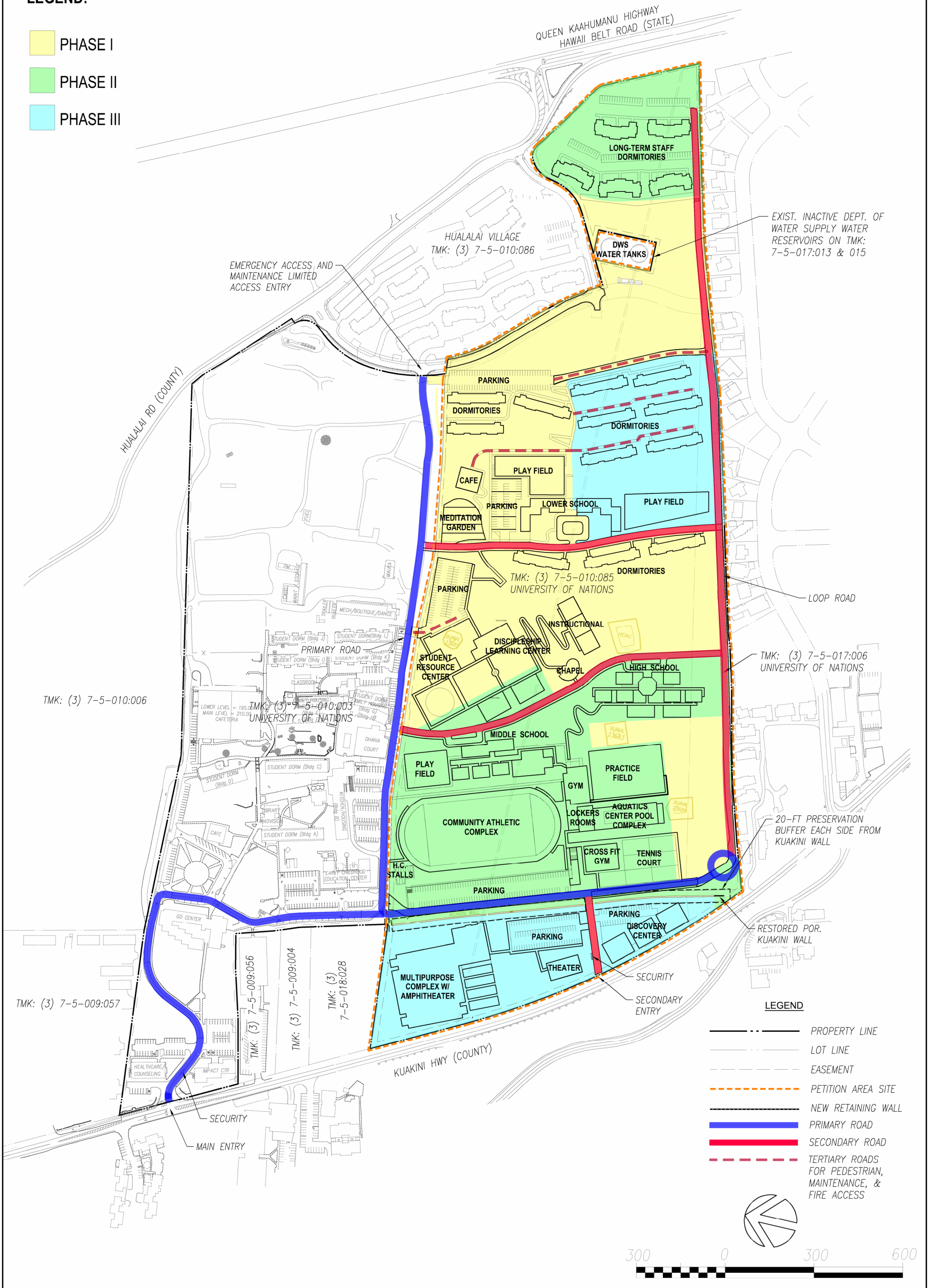


FIG 6	SCALE: 1" = 300' DATE: DECEMBER 15, 2023 PROJECT: 219061-01	CONCEPT MASTER PLAN UNIVERSITY OF NATIONS TMK: (3)7-5-010:003 & 085 KONA, HAWAII	G70 111 S. KING STREET, SUITE 170 HONOLULU, HAWAII 96813 808.523.5866 WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 EXISTING FIGURES.DWG DATE: 6/21/2023 3:32 PM

EXISTING OVERLAND DRAINAGE FLOWS AT VARIOUS POINTS ALONG HIGHWAY Q_{100}=110 CFS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=41 CFS

EXISTING 36" CULVERT Q_{50}=2CFS

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

EXISTING 84" PIPE CULVERT Q_{100}=45 CFS

EXISTING 36" CULVERT Q_{50}=2CFS

30" RCP CULVERT Q_{100}=120 CFS

65"x40" ARCH CULVERT Q_{100}=110 CFS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=85 CFS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=150 CFS

HUALALAI VILLAGE
HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EXISTING INFILTRATION BASIN AND 6 DRYWELLS

HUALALAI RD (COUNTY)

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

SOIL TYPE: 223
KAINALIU COBBLY SILTY CLAY LOAN, 10 TO 20 PERCENT SLOPES

SOILS BOUNDARY

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=61 CFS

TMK: (3) 7-5-010:085
UNIVERSITY OF NATIONS

TMK: (3) 7-5-010:006

SOIL TYPE: 250
WAIAHA-PUNALUU-LAVA FLOWS COMPLEX, 10 TO 20 PERCENT SLOPES

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

DRY WELL, TYP.

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=95 CFS

TMK: (3) 7-5-009:057

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

KUAKINI HWY (COUNTY)

EXISTING 24" CULVERT

LEGEND

- PROPERTY LINE
- LOT LINE
- EASEMENT
- PETITION AREA SITE
- 150 EXISTING CONTOUR
- EXISTING DRAINAGE FLOW
- EXISTING DRYWELL
- SOIL TYPE BOUNDARY

300 0 300 600

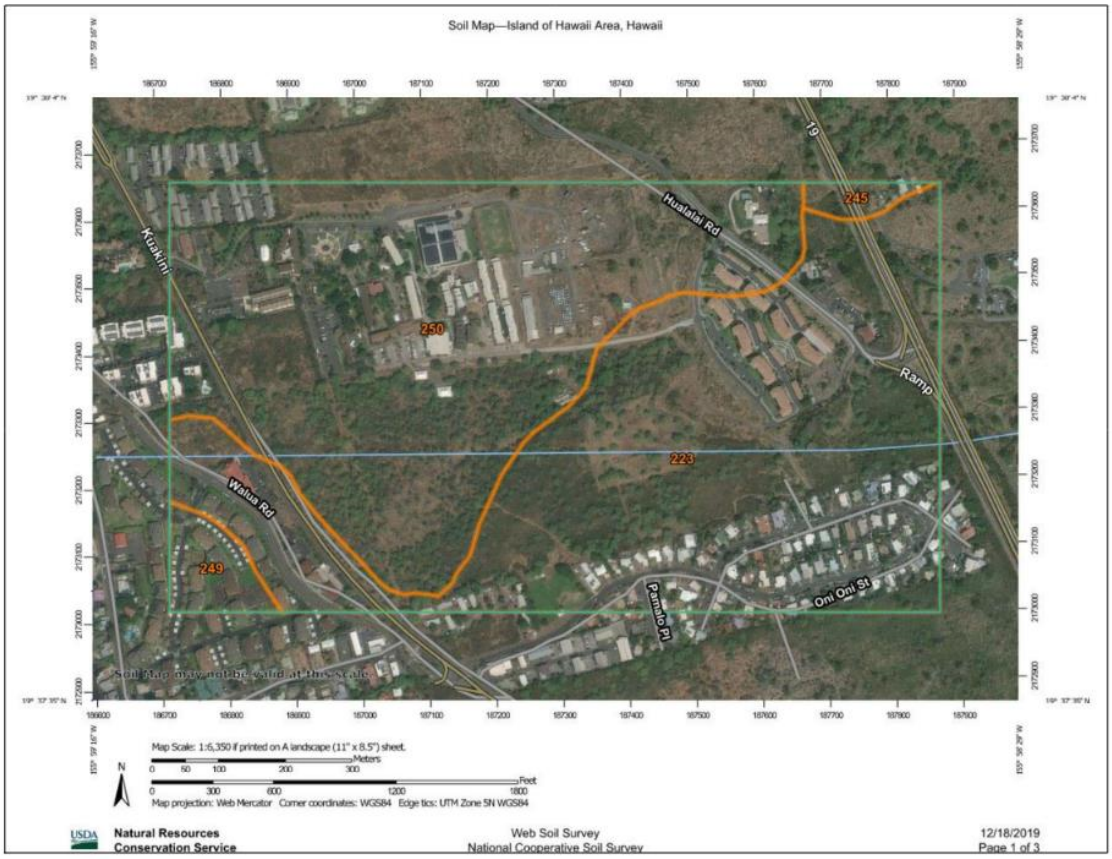
FIG 7

SCALE: 1" = 300'
DATE: DECEMBER 15, 2023
PROJECT: 219061-01

EXISTING GRADING & DRAINAGE PLAN

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
223	Kainaliu cobbly silty clay loam, 10 to 20 percent slopes	90.6	49.4%
245	Waiaha cobbly medial silt loam, 10 to 20 percent slopes	1.9	1.0%
249	Waiaha-Punaluu-Lava flows complex, 2 to 10 percent slopes	4.4	2.4%
250	Waiaha-Punaluu-Lava flows complex, 10 to 20 percent slopes	86.4	47.1%
Totals for Area of Interest		**183.4**	**100.0%**

FIGURE 8 NRCS SOILS MAP AND LEGEND

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED GRADING DRAINAGE FIGURE.DWG DATE: 12/14/2023 9:28 AM

LEGEND:

- PHASE I
- PHASE II
- PHASE III

84" PIPE CULVERT

ED84 FLOW ACROSS QUEEN KAAHUMANU HWY = 45 CFS

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

ED36 ACROSS HUALALAI ROAD = 2 CFS

ED36 ACROSS HUALALAI ROAD = 2 CFS

30" RCP CULVERT

65"X40" ARCH CULVERT

MAINTENANCE LIMITED ACCESS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=85 CFS

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EMERGENCY ACCESS AND MAINTENANCE LIMITED ACCESS ENTRY

EXISTING INFILTRATION BASIN AND 6 DRYWELLS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=150 CFS

HUALALAI RD (COUNTY)

EXISTING DRY WELL, TYP.

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=61 CFS

PRIMARY ROAD

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=95 CFS

TMK: (3) 7-5-009:057

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

KUAKINI HWY (COUNTY)

SECURITY

MAIN ENTRY

DRAINAGE OUTFALLS TO KUAKINI HWY. D24

EXISTING 24" CULVERT

SECURITY

TMK: (3) 7-5-010:085
UNIVERSITY OF NATIONS

LOOP ROAD

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

EXIST. INACTIVE DEPT. OF WATER SUPPLY WATER RESERVOIRS ON TMK: 7-5-017:013 & 015

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

RESTORED POR. KUAKINI WALL

RESTORED POR. KUAKINI WALL

LONG-TERM STAFF DORMITORIES

DWS WATER TANKS

DORMITORIES

DORMITORIES

PLAY FIELD

PARKING

MEDITATION GARDEN

PARKING

DORMITORIES

PARKING

DISCOVERY LEARNING CENTER

STUDENT RESOURCE CENTER

CHAPEL

HIGH SCHOOL

MIDDLE SCHOOL

PLAY FIELD

PRACTICE FIELD

COMMUNITY ATHLETIC COMPLEX

LOCKERS ROOMS

AQUATICS CENTER POOL COMPLEX

CROSS FIT

TENNIS COURT

P.C. STALLS

PARKING

PARKING

DISCOVERY CENTER

MULTIPURPOSE COMPLEX W/ AMPHITHEATER

THEATER

KUAKINI WALL

BURIAL 23683

HETAU

LEGEND

- PROPERTY LINE
- LOT LINE
- EASEMENT
- PETITION AREA SITE
- 150 EXISTING CONTOUR
- NEW RETAINING WALL
- 200 EXISTING CONTOUR
- EXISTING DRYWELL
- PRIMARY DRAINAGE NATURAL CHANNEL OR LINED CHANNEL
- INFILTRATION TRENCH
- SECONDARY DRAINAGE CHANNEL OR STORM DRAIN
- RAIN GARDEN/INFITRATION SUMP
- DRYWELL/CATCH BASIN
- OUTLET
- EXISTING OVERLAND FLOW

PHASE I DRAINAGE IMPROVEMENTS

PHASE II DRAINAGE IMPROVEMENTS

PHASE III DRAINAGE IMPROVEMENTS

FIG 9a

SCALE: 1" = 300' (11" x 17")

DATE: DECEMBER 15, 2023

PROJECT: 219061-01

PROPOSED GRADING & DRAINAGE PH I

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED GRADING DRAINAGE FIGURE.DWG DATE: 12/14/2023 9:28 AM

LEGEND:

PHASE I

PHASE II

PHASE III

84" PIPE CULVERT

ED84 FLOW ACROSS QUEEN KAAHUMANU HWY = 45 CFS

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

ED36 ACROSS HUALALAI ROAD = 2 CFS

ED36 ACROSS HUALALAI ROAD = 2 CFS

30" RCP CULVERT

65"X40" ARCH CULVERT

MAINTENANCE LIMITED ACCESS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=85 CFS

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EXIST. INACTIVE DEPT. OF WATER SUPPLY WATER RESERVOIRS ON TMK: 7-5-017:013 & 015

EMERGENCY ACCESS AND MAINTENANCE LIMITED ACCESS ENTRY

EXISTING INFILTRATION BASIN AND 6 DRYWELLS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=150 CFS

HUALALAI RD (COUNTY)

EXISTING DRY WELL, TYP.

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=61 CFS

PRIMARY ROAD

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

TMK: (3) 7-5-010:085
UNIVERSITY OF NATIONS

LOOP ROAD

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

RESTORED POR. KUAKINI WALL

RESTORED POR. KUAKINI WALL

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=95 CFS

TMK: (3) 7-5-009:057

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

SECURITY

MAIN ENTRY

KUAKINI HWY (COUNTY)

DRAINAGE OUTFALLS TO KUAKINI HWY. D24

EXISTING 24" CULVERT

SECURITY

LONG-TERM STAFF DORMITORIES

DWS WATER TANKS

DORMITORIES

DORMITORIES

PLAY FIELD

MEDITATION GARDEN

PARKING

DORMITORIES

PARKING

PARKING

PLAY FIELD

PRACTICE FIELD

COMMUNITY ATHLETIC COMPLEX

LOCKERS ROOMS

AQUATICS CENTER POOL COMPLEX

CROSS FIT

TENNIS COURT

PARKING

PARKING

DISCOVERY CENTER

MULTIPURPOSE COMPLEX W/ AMPHITHEATER

THEATER

STUDENT RESOURCE CENTER

DISCOVERY LEARNING CENTER

CHAPEL

HETAU

BURIAL 23683

PHASE I DRAINAGE IMPROVEMENTS

PHASE II DRAINAGE IMPROVEMENTS

PHASE III DRAINAGE IMPROVEMENTS

LEGEND

PROPERTY LINE

LOT LINE

EASEMENT

PETITION AREA SITE

EXISTING CONTOUR

NEW RETAINING WALL

EXISTING CONTOUR

EXISTING DRYWELL

PRIMARY DRAINAGE NATURAL CHANNEL OR LINED CHANNEL

INFILTRATION TRENCH

SECONDARY DRAINAGE CHANNEL OR STORM DRAIN

RAIN GARDEN/INFITRATION SUMP

DRYWELL/CATCH BASIN

OUTLET

EXISTING OVERLAND FLOW

FIG 9b

SCALE: 1" = 300' (11" x 17")

DATE: DECEMBER 15, 2023

PROJECT: 219061-01

PROPOSED GRADING & DRAINAGE PH II

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED GRADING DRAINAGE FIGURE.DWG DATE: 12/14/2023 9:28 AM

LEGEND:

PHASE I

PHASE II

PHASE III

84" PIPE CULVERT

ED84 FLOW ACROSS QUEEN KAAHUMANU HWY = 45 CFS

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

ED36 ACROSS HUALALAI ROAD = 2 CFS

ED36 ACROSS HUALALAI ROAD = 2 CFS

30" RCP CULVERT

65"X40" ARCH CULVERT

MAINTENANCE LIMITED ACCESS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=85 CFS

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

LONG-TERM STAFF DORMITORIES

DWS WATER TANKS

EXIST. INACTIVE DEPT. OF WATER SUPPLY WATER RESERVOIRS ON TMK: 7-5-017:013 & 015

EMERGENCY ACCESS AND MAINTENANCE LIMITED ACCESS ENTRY

EXISTING INFILTRATION BASIN AND 6 DRYWELLS

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=150 CFS

HUALALAI RD (COUNTY)

EXISTING DRY WELL, TYP.

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=61 CFS

PRIMARY ROAD

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

TMK: (3) 7-5-010:085
UNIVERSITY OF NATIONS

LOOP ROAD

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

RESTORED POR. KUAKINI WALL

RESTORED POR. KUAKINI WALL

EXISTING OVERLAND DRAINAGE FLOWS Q_{100}=95 CFS

TMK: (3) 7-5-009:057

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

KUAKINI HWY (COUNTY)

SECURITY

MAIN ENTRY

SECURITY

DRAINAGE OUTFALLS TO KUAKINI HWY. D24

EXISTING 24" CULVERT

DORMITORIES

PLAY FIELD

PARKING

MEDITATION GARDEN

DISCOVERY LEARNING CENTER

STUDENT RESOURCE CENTER

CHAPEL

HETAU

PRACTICE FIELD

COMMUNITY ATHLETIC COMPLEX

LOCKERS ROOMS

AQUATICS CENTER

POOL COMPLEX

CROSS FIT

TENNIS COURT

H.C. STALLS

PARKING

DISCOVERY CENTER

MULTIPURPOSE COMPLEX W/ AMPHITHEATER

THEATER

BURIAL 23683

KUAKINI WALL

LEGEND

- PROPERTY LINE
- LOT LINE
- EASEMENT
- PETITION AREA SITE
- 150 EXISTING CONTOUR
- NEW RETAINING WALL
- 200 EXISTING CONTOUR
- EXISTING DRYWELL
- PRIMARY DRAINAGE NATURAL CHANNEL OR LINED CHANNEL
- INFILTRATION TRENCH
- SECONDARY DRAINAGE CHANNEL OR STORM DRAIN
- RAIN GARDEN/INFITRATION SUMP
- DRYWELL/CATCH BASIN
- OUTLET
- EXISTING OVERLAND FLOW

PHASE I DRAINAGE IMPROVEMENTS

PHASE II DRAINAGE IMPROVEMENTS

PHASE III DRAINAGE IMPROVEMENTS

FIG 9c

SCALE: 1" = 300' (11" x 17")

DATE: DECEMBER 15, 2023

PROJECT: 219061-01

PROPOSED GRADING & DRAINAGE PH III

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 EXISTING FIGURES.DWG DATE: 6/21/2023 3:32 PM

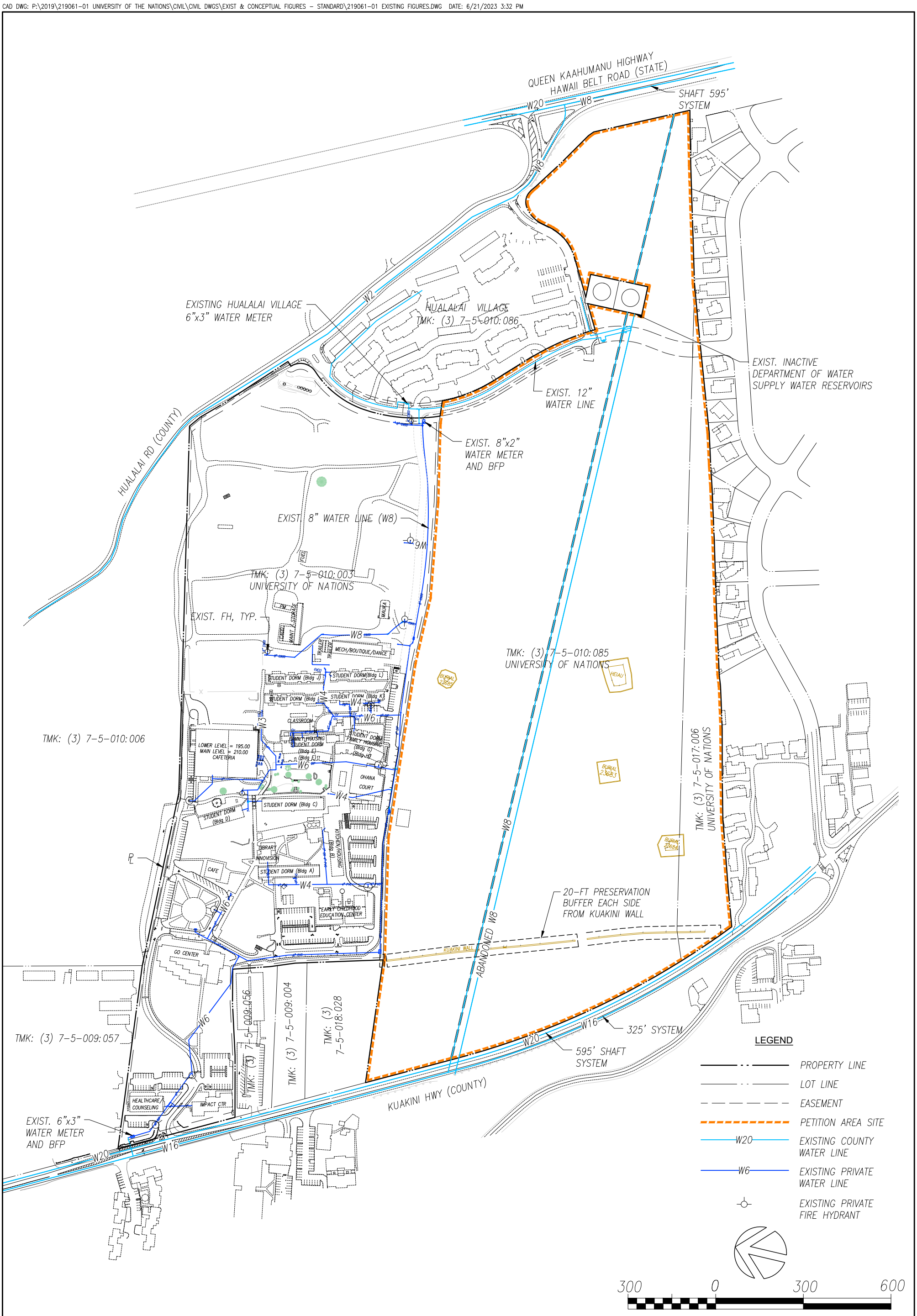


FIG 10

SCALE: 1" = 300'
DATE: DECEMBER 15, 2023
PROJECT: 219061-01

EXISTING WATER SYSTEM PLAN

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED WATER FIGURE.DWG DATE: 12/14/2023 9:19 AM

LEGEND:

PHASE I

PHASE II

PHASE III

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

595' SHAFT SYSTEM

CONNECT TO HUALALAI VILLAGE WATER LINE, DWS 595' SYSTEM

LONG-TERM STAFF DORMITORIES

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

EXIST. INACTIVE DEPT. OF WATER SUPPLY WATER RESERVOIRS ON TMK: 7-5-017:013 & 015

DWS WATER TANKS

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EXISTING HUALALAI VILLAGE 6"x3" WATER METER

PROVIDE SECOND LOOPED CONNECTION TO DWS 595' SYSTEM IF REQUIRED

CONNECT TO EXIST. (DWS 325' SYSTEM)

EXIST. 12" WATER LINE

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

EXIST. 8"x2" WATER METER AND BFP CONNECT TO 595' SYSTEM

HUALALAI RD (COUNTY)

595' SERVICE ZONE

225'

325' SERVICE ZONE

EXIST. 8" WATER LINE (W8)

CONNECT TO EXIST. U OF N 8" WATER MAIN (DWS 325' SYSTEM)

ABANDON/REMOVE EXISTING MAIN AS CAMPUS IS DEVELOPED

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

LOOP ROAD

EXIST. FH, TYP.

TMK: (3) 7-5-010:085
UNIVERSITY OF NATIONS

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

PRIMARY ROAD

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

CONNECT TO EXIST. U OF N 8" WATER MAIN (DWS 325' SYSTEM)

CONNECT TO EXIST. 16" WATER (DWS 325' SYSTEM)

RESTORED POR. KUAKINI WALL

325' SYSTEM

SECURITY

SECONDARY ENTRY

595' SHAFT SYSTEM

PROVIDE SECOND LOOPED CONNECTION TO DWS 325' SYSTEM IF REQUIRED

KUAKINI HWY (COUNTY)

TMK: (3) 7-5-009:057

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

EXIST. 6"x3" WATER METER AND BFP

595' SHAFT SYSTEM

325' SYSTEM

SECURITY

MAIN ENTRY

DORMITORIES

PLAY FIELD

CAFE

PARKING

LOWER SCHOOL

MEDITATION GARDEN

INSTRUCTIONAL

DISCIPLESHIP LEARNING CENTER

STUDENT RESOURCE CENTER

CHAPEL

HIGH SCHOOL

MIDDLE SCHOOL

PLAY FIELD

PRACTICE FIELD

GYM

COMMUNITY ATHLETIC COMPLEX

LOCKERS ROOMS

AQUATICS CENTER POOL COMPLEX

CROSS FIT GYM

TENNIS COURT

PARKING

DISCOVERY CENTER

THEATER

MULTIPURPOSE COMPLEX W/ AMPHITHEATER

ABANDONED W8

KUAKINI WALL

LEGEND

PROPERTY LINE

LOT LINE

EASEMENT

PETITION SITE AREA

NEW RETAINING WALL

EXISTING WATER LINE

PHASE 1 WATER LINE

PHASE II WATER LINE

PHASE III WATER LINE

300 0 300 600

FIG 11a

SCALE: 1" = 300'

DATE: DECEMBER 15, 2023

PROJECT: 219061-01

PROPOSED WATER SYSTEM PH I

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED WATER FIGURE.DWG DATE: 12/14/2023 9:19 AM

LEGEND:

PHASE I

PHASE II

PHASE III

CONNECT TO HUALALAI VILLAGE WATER LINE, DWS 595' SYSTEM

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

595' SHAFT SYSTEM

W20

W8

W8

W8

LONG-TERM STAFF DORMITORIES

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

DWS WATER TANKS

EXIST. INACTIVE DEPARTMENT OF WATER SUPPLY WATER RESERVOIRS

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EXISTING HUALALAI VILLAGE 6"x3" WATER METER

W2

EXIST. 12" WATER LINE

CONNECT TO PHASE I 8" WATER MAIN (DWS 595' SYSTEM)

PROVIDE SECOND LOOPED CONNECTION TO DWS 595' SYSTEM IF REQUIRED

CONNECT TO EXIST. (DWS 325' SYSTEM)

W12

HUALALAI RD (COUNTY)

EXIST. 8"x2" WATER METER AND BFP

DORMITORIES

DORMITORIES

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

595' SERVICE ZONE

225'

325' SERVICE ZONE

EXIST. 8" WATER LINE (W8)

W6

PLAY FIELD

CAFE

PARKING

LOWER SCHOOL

PLAY FIELD

MEDITATION GARDEN

ABANDON/REMOVE EXISTING MAIN AS CAMPUS IS DEVELOPED

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

EXIST. FH, TYP.

W8

PARKING

TMK: (3) 7-5-010:085
UNIVERSITY OF NATIONS

DORMITORIES

LOOP ROAD

INSTRUCTIONAL

HEIAU

BURIAL 23685

DISCIPLESHIP LEARNING CENTER

STUDENT RESOURCE CENTER

CHAPEL

HIGH SCHOOL

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

PRIMARY ROAD

W4

W4

W6

W3

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

CONNECT TO PHASE I 8" WATER MAIN (DWS 325' SYSTEM)

W6

MIDDLE SCHOOL

BURIAL 23683

PLAY FIELD

PRACTICE FIELD

GYM

W4

W8

ABANDONED W8

LOCKERS ROOMS

AQUATICS CENTER POOL COMPLEX

BURIAL 23684

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

COMMUNITY ATHLETIC COMPLEX

CROSS FIT GYM

TENNIS COURT

W4

H.C. STALLS

CONNECT TO EXIST. U OF N 8" WATER MAIN (DWS 325' SYSTEM)

W6

PARKING

KUAKINI WALL

CONNECT TO EXIST. 16" WATER (DWS 325' SYSTEM)

PARKING

PARKING

DISCOVERY CENTER

RESTORED POR. KUAKINI WALL

325' SYSTEM

THEATER

SECURITY

MULTIPURPOSE COMPLEX W/ AMPHITHEATER

W16

W20

SECONDARY ENTRY

595' SHAFT SYSTEM

TMK: (3) 7-5-009:057

W6

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

EXIST. 6"x3" WATER METER AND BFP

KUAKINI HWY (COUNTY)

325' SYSTEM

595' SHAFT SYSTEM

W20

W16

SECURITY

MAIN ENTRY

LEGEND

PROPERTY LINE

LOT LINE

EASEMENT

PETITION SITE AREA

NEW RETAINING WALL

EXISTING WATER LINE

PHASE 1 WATER LINE

PHASE II WATER LINE

PHASE III WATER LINE

300 0 300 600

FIG 11b

SCALE: 1" = 300'

DATE: DECEMBER 15, 2023

PROJECT: 219061-01

PROPOSED WATER SYSTEM PH II

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED WATER FIGURE.DWG DATE: 12/14/2023 9:19 AM

LEGEND:

PHASE I

PHASE II

PHASE III

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

595' SHAFT SYSTEM

W20

W8

PROVIDE SECOND LOOPED CONNECTION TO DWS 595' SYSTEM IF REQUIRED

LONG-TERM STAFF DORMITORIES

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

DWS WATER TANKS

EXIST. INACTIVE DEPARTMENT OF WATER SUPPLY WATER RESERVOIRS

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EXISTING HUALALAI VILLAGE 6"x3" WATER METER

EXIST. 8"x2" WATER METER AND BFP

W2

W12

EXIST. 12" WATER LINE

CONNECT TO PHASE II (DWS 325' SYSTEM)

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

HUALALAI RD (COUNTY)

EXIST. 8" WATER LINE (W8)

DORMITORIES

DORMITORIES

595' SERVICE ZONE

225'

325' SERVICE ZONE

PLAY FIELD

CAFE

PARKING

LOWER SCHOOL

PLAY FIELD

MEDITATION GARDEN

W6

CONNECT TO PHASE I 8" WATER MAIN (DWS 325' SYSTEM)

ABANDON/REMOVE EXISTING MAIN AS CAMPUS IS DEVELOPED

RELOCATE EXIST. 6" WATER (DWS 325' SYSTEM)

EXIST. FH, TYP.

W8

PARKING

TMK: (3) 7-5-010:085
UNIVERSITY OF NATIONS

DORMITORIES

LOOP ROAD

INSTRUCTIONAL

HEIAU

BURIAL 23685

DISCIPLESHIP LEARNING CENTER

CONNECT TO PHASE II 8" WATER MAIN (DWS 325' SYSTEM)

STUDENT RESOURCE CENTER

CHAPEL

HIGH SCHOOL

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

PRIMARY ROAD

W4

W6

W3

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

MIDDLE SCHOOL

BURIAL 23683

PLAY FIELD

PRACTICE FIELD

GYM

W8

ABANDONED W8

LOCKERS ROOMS

AQUATICS CENTER POOL COMPLEX

BURIAL 23684

COMMUNITY ATHLETIC COMPLEX

CROSS FIT GYM

TENNIS COURT

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

H.C. STALLS

PARKING

CONNECT TO EXIST. 16" WATER (DWS 325' SYSTEM)

PARKING

DISCOVERY CENTER

RESTORED POR. KUAKINI WALL

PARKING

W16

325' SYSTEM

THEATER

SECURITY

MULTIPURPOSE COMPLEX W/ AMPHITHEATER

SECONDARY ENTRY

W20

CONNECT TO EXIST. 16" WATER (DWS 325' SYSTEM)

TMK: (3) 7-5-009:057

W6

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

KUAKINI HWY (COUNTY)

CONNECT TO PHASE II 8" WATER MAIN (DWS 325' SYSTEM)

595' SHAFT SYSTEM

EXIST. 6"x3" WATER METER AND BFP

595' SHAFT SYSTEM

W20

W16

SECURITY

325' SYSTEM

MAIN ENTRY

LEGEND

PROPERTY LINE

LOT LINE

EASEMENT

PETITION SITE AREA

NEW RETAINING WALL

EXISTING WATER LINE

PHASE 1 WATER LINE

PHASE II WATER LINE

PHASE III WATER LINE

300 0 300 600

FIG 11c

SCALE: 1" = 300'

DATE: DECEMBER 15, 2023

PROJECT: 219061-01

PROPOSED WATER SYSTEM PH III

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 EXISTING FIGURES.DWG DATE: 6/21/2023 3:32 PM

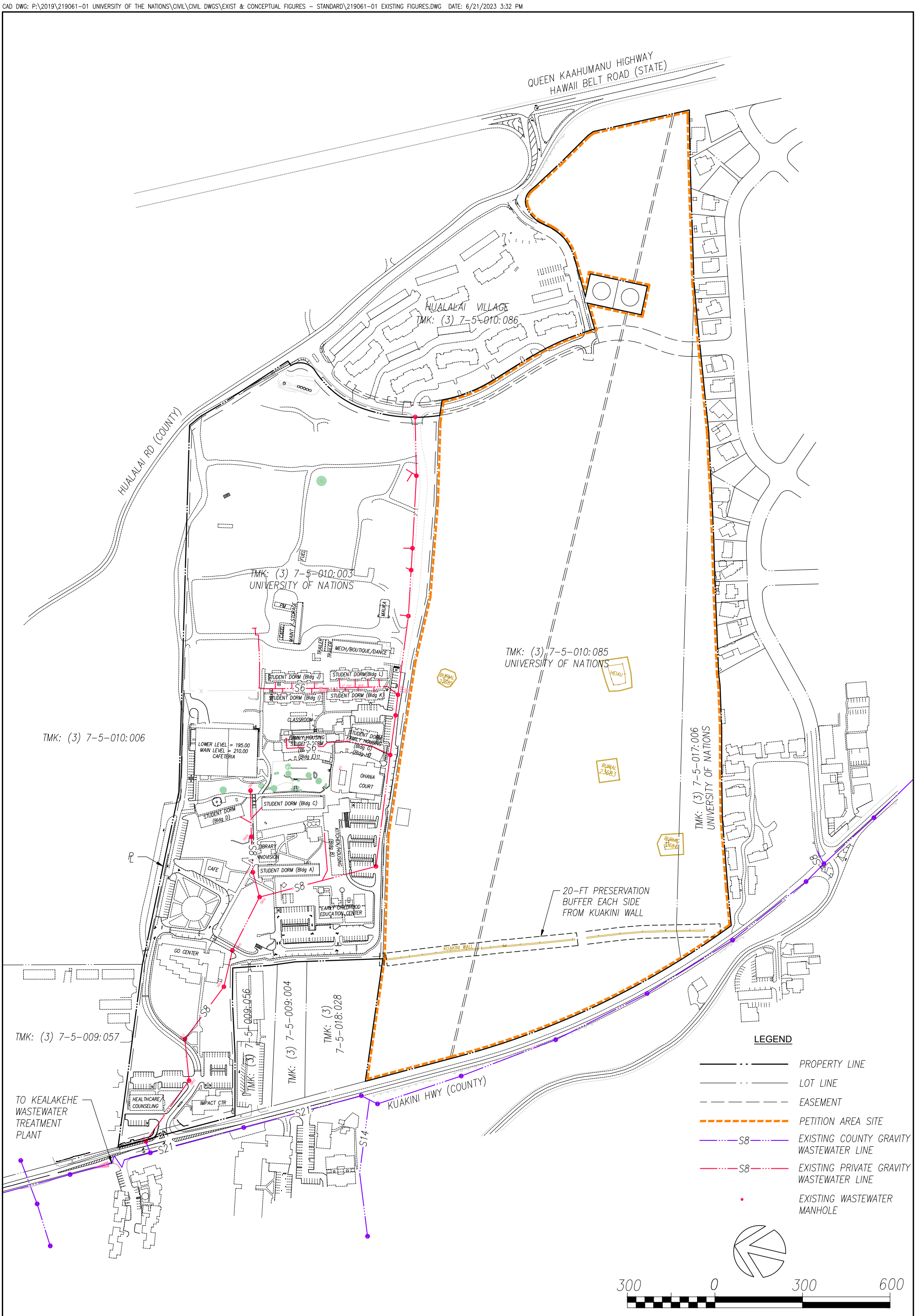


FIG 12	SCALE: 1" = 300' DATE: DECEMBER 15, 2023 PROJECT: 219061-01	EXISTING WASTEWATER SYSTEM PLAN UNIVERSITY OF NATIONS TMK: (3)7-5-010:003 & 085 KONA, HAWAII	G70 111 S. KING STREET, SUITE 170 HONOLULU, HAWAII 96813 808.523.5866 WWW.G70.DESIGN

LEGEND:

- PHASE I
- PHASE II
- PHASE III

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

LONG-TERM STAFF DORMITORIES

DWS WATER TANKS

EXIST. INACTIVE DEPT. OF WATER SUPPLY WATER RESERVOIRS ON TMK: 7-5-017:013 & 015

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EMERGENCY ACCESS AND MAINTENANCE LIMITED ACCESS ENTRY

HUALALAI RD (COUNTY)

CONNECT TO EXIST. SEWER MANHOLE

CONNECT TO EXIST. SEWER MANHOLE

CONNECT TO EXIST. SEWER MANHOLE

PARKING
DORMITORIES
DORMITORIES
PLAY FIELD
CAFE
PARKING
LOWER SCHOOL
PLAY FIELD
MEDITATION GARDEN
DORMITORIES
PARKING
INSTRUCTIONAL
STUDENT RESOURCE CENTER
CHAPEL
HIGH SCHOOL
MIDDLE SCHOOL
PLAY FIELD
PRACTICE FIELD
GYM
COMMUNITY ATHLETIC COMPLEX
LOCKERS ROOMS
AQUATICS CENTER POOL COMPLEX
CROSS FIT GYM
TENNIS COURT
PARKING
PARKING
PARKING
DISCOVERY CENTER
MULTIPURPOSE COMPLEX W/ AMPHITHEATER
THEATER

PRIMARY ROAD

LOOP ROAD

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

RESTORED POR. KUAKINI WALL

SECURITY

SECONDARY ENTRY

SECURITY

MAIN ENTRY

KUAKINI HWY (COUNTY)

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

TMK: (3) 7-5-009:057

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

S6 S8 S21 S14

LEGEND

- PROPERTY LINE
- LOT LINE
- EASEMENT
- PETITION SITE AREA
- NEW RETAINING WALL
- EXISTING SEWER LINE (S6)
- NEW SEWER MANHOLE
- PHASE I SEWER LINE
- PHASE II SEWER LINE
- PHASE III SEWER LINE

300 0 300 600

FIG 13a

SCALE: 1" = 300'
DATE: DECEMBER 15, 2023
PROJECT: 219061-01

PROPOSED WASTEWATER SYSTEM PH I

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED SEWER FIGURE.DWG DATE: 12/14/2023 9:32 AM

LEGEND:

PHASE I

PHASE II

PHASE III

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EMERGENCY ACCESS AND MAINTENANCE LIMITED ACCESS ENTRY

EXIST. INACTIVE DEPT. OF WATER SUPPLY WATER RESERVOIRS ON TMK: 7-5-017:013 & 015

DWS WATER TANKS

LONG TERM STAFF DORMITORIES

HUALALAI RD (COUNTY)

PARKING

DORMITORIES

PLAY FIELD

CAFE

MEDITATION GARDEN

LOWER SCHOOL

CONNECT TO PHASE I SEWER LINE

LOOP ROAD

PRIMARY ROAD

INSTRUCTIONAL

STUDENT RESOURCE CENTER

CHAPEL

HIGH SCHOOL

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

MIDDLE SCHOOL

PLAY FIELD

PRACTICE FIELD

GYM

COMMUNITY ATHLETIC COMPLEX

LOCKERS ROOMS

AQUATICS CENTER POOL COMPLEX

CROSS FIT GYM

TENNIS COURT

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

RESTORED POR. KUAKINI WALL

MULTIPURPOSE COMPLEX W/ AMPHITHEATER

THEATER

DISCOVERY CENTER

SECURITY

SECONDARY ENTRY

TMK: (3) 7-5-009:057

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

KUAKINI HWY (COUNTY)

CONNECT NEW SEWER MAIN TO EXIST. SEWER MANHOLE

SECURITY

MAIN ENTRY

LEGEND

- PROPERTY LINE
- LOT LINE
- EASEMENT
- PETITION SITE AREA
- NEW RETAINING WALL
- EXISTING SEWER LINE
- NEW SEWER MANHOLE
- PHASE I SEWER LINE
- PHASE II SEWER LINE
- PHASE III SEWER LINE

300 0 300 600

FIG 13b

SCALE: 1" = 300'

DATE: DECEMBER 15, 2023

PROJECT: 219061-01

PROPOSED WASTEWATER SYSTEM PH II

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN

CAD DWG: P:\2019\219061-01 UNIVERSITY OF THE NATIONS\CIVIL\CIVIL DWGS\EXIST & CONCEPTUAL FIGURES - STANDARD\219061-01 PROPOSED SEWER FIGURE.DWG DATE: 12/14/2023 9:32 AM

LEGEND:

- PHASE I
- PHASE II
- PHASE III

QUEEN KAAHUMANU HIGHWAY
HAWAII BELT ROAD (STATE)

LONG TERM STAFF DORMITORIES

EXIST. INACTIVE DEPT. OF WATER SUPPLY WATER RESERVOIRS ON TMK: 7-5-017:013 & 015

DWS WATER TANKS

HUALALAI VILLAGE
TMK: (3) 7-5-010:086

EMERGENCY ACCESS AND MAINTENANCE LIMITED ACCESS ENTRY

HUALALAI RD (COUNTY)

PARKING
DORMITORIES
DORMITORIES
PLAY FIELD
CAFE
PARKING
LOWER SCHOOL
PLAY FIELD
MEDITATION GARDEN
DORMITORIES
PARKING
INSTRUCTIONAL
DISCIPLE LEARNING CENTER
STUDENT RESOURCE CENTER
CHAPEL
HIGH SCHOOL
MIDDLE SCHOOL
PLAY FIELD
PRACTICE FIELD
GYM
LOCKERS ROOMS
AQUATICS CENTER POOL COMPLEX
COMMUNITY ATHLETIC COMPLEX
CROSS FIT GYM
TENNIS COURT
GO CALLS
PARKING
PARKING
PARKING
DISCOVERY CENTER
MULTIPURPOSE COMPLEX W/ AMPHITHEATER
THEATER

CONNECT TO PHASE II SEWER LINE

LOOP ROAD

PRIMARY ROAD

TMK: (3) 7-5-017:006
UNIVERSITY OF NATIONS

TMK: (3) 7-5-010:006

TMK: (3) 7-5-010:003
UNIVERSITY OF NATIONS

20-FT PRESERVATION BUFFER EACH SIDE FROM KUAKINI WALL

RESTORED POR. KUAKINI WALL

TMK: (3) 7-5-009:057

TMK: (3) 7-5-009:056

TMK: (3) 7-5-009:004

TMK: (3) 7-5-018:028

SECURITY

SECONDARY ENTRY

KUAKINI HWY (COUNTY)

SECURITY

MAIN ENTRY

S6 S8 S21 S14

LEGEND

- PROPERTY LINE
- LOT LINE
- EASEMENT
- PETITION SITE AREA
- NEW RETAINING WALL
- EXISTING SEWER LINE
- NEW SEWER MANHOLE
- PHASE I SEWER LINE
- PHASE II SEWER LINE
- PHASE III SEWER LINE

300 0 300 600

FIG 13c

SCALE: 1" = 300'
DATE: DECEMBER 15, 2023
PROJECT: 219061-01

PROPOSED WASTEWATER SYSTEM PH III

UNIVERSITY OF NATIONS
TMK: (3)7-5-010:003 & 085
KONA, HAWAII

G70
111 S. KING STREET, SUITE 170
HONOLULU, HAWAII 96813
808.523.5866
WWW.G70.DESIGN