



PREFACE

The report included here within is a summary of the Moʻokūʻauhau, Moʻolelo, Moʻokaʻi and Moʻowaiwai (see page iii.) of the Office of Hawaiian Affairs' (OHA) 511-acres Wahiawā Lands Conceptual Master Plan process. The document highlights the yesterday, today and tomorrow of the site to make recommendations to the OHA based on the history and cultural significance of the area, input from the community, manaʻo and experience from the Working Group, and the collective expertise of Kuhikuhi Puʻuone and its team of consultants.

PURPOSE

The purpose of this plan is to guide the long-range direction that the OHA shall pursue to steward their 511-acre property in Wahiawā surrounding the Kūkaniloko Birthing Stones. The Conceptual Master Plan, hereafter called "the Plan", will enable the OHA to identify potential strategic and programmatic partnerships to align resources, intentions, and collective impact strategies to implement the Plan over time.

Based on research, stakeholder engagement, and the expertise of all who participated, the Conceptual Master Plan provides:

- 1. An understanding of people and place:
 - i. Significant information relative to the historic and contemporary use and significance of the property;
- 2. An understanding that what the OHA does on its Wahiawā Lands will have an impact on the OHA's beneficiaries and community members on O'ahu and also across the pae 'āina (Hawaiian islands);
 - i. Recommendations of aligned and appropriate programmatic uses to implement on the property considering its significance/sacred nature and the needs of beneficiaries/community;
- 3. An understanding of what is needed to support the people, place and programmatic recommendations described above; and
- 4. A listing of infrastructural improvements and management actions that would support the proper stewardship of the property and the implementation of the programmatic elements referenced above.

THE PRODUCT

This document refines the Programmatic Charter for action planning at the 511-acre Wahiawā Lands parcel; it set the high-level direction which was approved and supported by the OHA's Committee on Resource Management on September 5, 2018 and by the OHA's Board of Trustees (BOT) on September 6, 2018 (See Appendix P for Action Item #1810).

Additional actions of the Conceptual Master Plan include, but are not limited to:

- » Phasing, Priorities, and Scheduling
- » Architectural and Engineering Designs
- » Obtaining Entitlements and Permits for Property Improvements
- » Amending Conservation Easement
- » The development of several plans and actions including:
 - > Vegetation Action and Management Plan
 - > Water Infrastructure Action and Management Plan
 - Business Plans for any recommended or potential business ventures
 - > The OHA's Governance Plan for the property

NAVIGATING THIS DOCUMENT

This document is a compilation of information based on research from the consulting team, interviews, and testimonies of kūpuna and field experts. This document begins with an introduction to the historical and sociological importance of the Kūkaniloko Birthing Stones, thus building the context for the Conceptual Master Plan. The following sections help create a foundation of information that relates to programming and planning for the site. The final section covers the overall Conceptual Master Plan and accompanying recommendations.

NOT INCLUDED IN THIS DOCUMENT

The following are out-of-scope items and are not included in this document:

- » This Conceptual Master Plan does not include detailed budget and cost estimates due to insufficient detailed information for architectural planning and construction cost estimation.
- » This Conceptual Master Plan does not include a market analysis study or any financial projections.
- » This Conceptual Master Plan does not provide details to any architectural or engineering design components, rather it provides guidance case studies and architectural examples that are intended to reflect suggestions that were made throughout the planning process.

NOTE ON HOW COMMON TERMS ARE REFERRED TO THROUGHOUT THE DOCUMENT:

Throughout the document the Conceptual Master Plan will interchangeably be referred to as "the Plan" and the "Conceptual Master Plan."

The "OHA's 511-acres Wahiawā Lands" is referred to as the "OHA's Wahiawā Lands" and the "511-acre parcel."

The "Kūkaniloko BIrthing Stones" is referred to as the "5-acre Kūkaniloko parcel," "5-acre parcel," and "Birthing Stones."

When speaking about the OHA's 511-acre Wahiawā Lands and the Kūkaniloko Birthing Stones together it is referred to as Kūkaniloko.



PRE-PROJECT PLANNING

The OHA recognized that planning for a significant area such as the 511-acres surrounding the Kūkaniloko Birthing Stones required a process that would delve into not only thoroughly understanding the place and the people who interact with it, but to truly explore the visions that the OHA's beneficiaries and community members have for the site. The OHA also recognized that by understanding the vision of the community and aligning it with the OHA's mission, that a solution of merit would arise.

OHA MISSION

To mālama Hawai'i's people and environmental resources, and the OHA's assets, toward ensuring the perpetuation of the culture, the enhancement of lifestyle and the protection of entitlements of Native Hawaiians, while enabling the building of a strong and healthy Hawaiian people and lāhui, recognized nationally and internationally.

The OHA put out a solicitation to find a team that could implement a planning process that would accomplish the goal and take the proper steps to plan for this property in collaboration with the OHA's Legacy Lands Program (LLP). At the end of the procurement process, Kuhikuhi Pu'uone Kūkaniloko (KPK) was selected and proceeded to assist the OHA with this meaningful task.

NOTE: For the purposes of this report, Native Hawaiian is defined in US Public Law 103–150 as "any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawai'i." The term Native Hawaiian is used interchangeably throughout this report with kānaka 'ōiwi, kānaka maoli and Hawaiian.





As one of the most sacred wahi pana, Kūkaniloko deserves the highest degree of respect and planning rigor. Any shaping of its future will require the vision and guidance of ancestral knowledge and the 'ike of Hawaiian resource management and land use. The OHA has engaged in a culture-driven planning processes to formulate this plan.

The process taken to engage the community was inspired by the chant E IHO ANA. Bring the people up into the highest levels to come up with a unified vision and goals.

E IHO ANA

Adapted from Hawaiian Antiquities by David Malo

E iho ana o luna E pi'i ana o lalo E hui ana nā moku E kū ana ka paia The high will be brought low The low will be lifted up The islands will be united The walls shall stand upright

Kuhikuhi Puʻuone Kūkaniloko is a Hawaiian strategic leadership team comprised of five organizations: DTL, WCIT Architecture, ʻĀina Archaeology, Hikaʻalani and Hui Kū Maoli Ola. All five firms are led by kānaka maoli. Additionally, this team was supplemented by individuals with planning, ecology, sustainability and financial expertise. The team's collective impact is founded on a shared vision of succession and genealogy in contemporary Hawaiian planning.

Kuhikuhi Pu'uone Kūkaniloko's role is similar to that of the ancient Kahuna Kuhikuhi Pu'uone. They were the genealogists of place and the shapers of space. They were important and trusted advisors to the ali'i and possessed a deep intimacy with, and understanding of, the natural environment. It was their kuleana to configure the built environment in ways that were pono.

While the stature and expertise of Kahuna Kuhikuhi Pu'uone will never be matched, Kuhikuhi Pu'uone Kūkaniloko aspires to serve wahi pana as they did—by managing the well-being of both 'āina and kānaka.

METHODOLOGY

Kuhikuhi Puʻuone Kūkaniloko strives for modern planning solutions grounded in the spirit of traditional kuhikuhi puʻuone practices to marry Hawaiian cultural concepts with contemporary design practices. The intent is to meet the contemporary needs of spaces by providing solutions based in Hawaiʻi's history, culture and practices.

The team's approach is based on the 'Āina/Kānaka methodology which is built upon the fundamental relationship between 'āina and kānaka, similar to traditional land management models. For Native Hawaiians, the importance of this relationship is told in the Kumulipo, one of the oldest and most widely acknowledged cosmogonic genealogies recounting the birth of the islands, chiefs, and people. This genealogy further denotes the familial and interdependence of the three and their importance in land management systems such as the ahupua'a. The team uses this tradition as the foundation of their planning practice, endeavoring to bring back the balance between 'āina and kānaka in modern contexts.

Kuhikuhi Pu'uone Kūkaniloko's approach is called Mo'o. It focuses on succession and allows them to incorporate the generations that came before, the current generation, and the generations to follow. In this approach there are four stages: mo'okū'auhau, moʻolelo, moʻokaʻi and moʻowaiwai. The moʻokūʻauhau, lineage of generations of knowledge, looks to all of the knowledge that make up the multiple genealogies that are crucial to the development of the project including, but not limited to, those of the OHA and Kūkaniloko. The mo'olelo, lineage of generations of narratives, is the next phase that takes this body of knowledge and collects any other critical narratives (i.e., community input and financial analyses) to set the road map for the planning. The mo'oka'i, lineage of generations of journeys, accomplishes the master planning. The mo'owaiwai, lineage of generations of valued practices, are outcomes of the master plan that will be embedded in Kūkaniloko for generations to come.

'Āina/Kānaka will be expressed by weaving together culture and planning in a complementary manner. Its design solutions will honor and tell the story of the rich history of the area while providing a canvas for Hawaiians and Hawaiii's people to express and define the Hawaiian culture of this age. The design solutions will define the place and functions while educating and enriching community members' knowledge and connection to the 'āina. The new fabric will provide places for the community to interact and thrive together in ways that are rooted in Hawaiian history, culture and practices. It will create space and place that resonates in the principle of 'Āina/Kānaka.

Kuhikuhi Puʻuone Kūkaniloko uses a system of collaborative working, similar to a Collective Impact Approach that will complement the OHA's style of project management. WCIT, DTL, and Wilson Okamoto have been working together regularly on joint venture projects for years, and have worked in various capacities with members of the OHA on several projects. WCIT and DTL have also worked with the members of 'Āina Archaeology, Hika'alani, and the specialist teams on several projects in the past. The team's values and goals are in many ways in alignment with the OHA's.

Kuhikuhi Puʻuone Kūkaniloko used various methods to monitor and support the aspects of Collective Impact Approach, such as establishing common agendas, fostering lines of consistent communication, defining common metrics, optimizing task distribution, and establishing a core team. Each aspect had multiple perspectives from the multiple disciplines represented on the team, allowing planning decisions to be tempered, and opportunities and challenges to be identified earlier in the process. The OHA's role as client and active participant was key; Kuhikuhi Puʻuone Kūkaniloko assisted in the OHA's efforts to engage with various key leaders of the OHA's departments, maintain lines of communication with dedicated project staff, and help focus on core themes and goals.

VISIONING

Hānau ka 'āina, hānau ke ali'i, hānau ke kānaka.

BORN WAS THE LAND, BORN WERE THE CHIEFS, BORN WERE THE PEOPLE.



Moʻokūʻauhau, a lineage of generations of knowledge, is the first stage. In this preliminary research phase information was collected about the people and the places associated with the project. The information was organized into three categories: yesterday, today and tomorrow. A special focus was paid to significant events, people and places that define the character of the project. The goal of this stage is to position the team with a baseline to begin the community outreach process.



Mo'olelo, a lineage of generations of stories, is the second phase. During this phase, knowledge leaders and stakeholders in the community were actively sought out. Stories of the people and the places were solicited to create a collective vision. The goal of this phase was to establish a healthy working relationship with the community that set the foundation for a rigorous community engagement process through discussions, interviews, and workshops.







Mo'oka'i, a lineage of generations of journeys, is the third phase. With the work completed in the first two phases, the physical planning efforts could begin. While planning work commenced, the community continued to be involved in the process to refine the cultural genealogy, themes and narratives. The rich information from the mo'okū'auhau and mo'olelo phases allowed the team to create a road map for The Plan to accomplish the objectives set forth by the OHA and the collective vision of the project.

Mo'owaiwai, a lineage of generations of valued practices, was the final phase of the project. In this phase, the Conceptual Master Plan was further developed and the community continued to be engaged. Due to the methodology employed in this planning process, this phase continues to realize the valued practices of kānaka as they steward their 'āina for generations to come.

KUHIKUHI PU'UONE



Many minds and hands played important roles in the preparation of this Plan. Likewise, a number of support documents were used in the development of this plan (many are noted as appendices).

PARTICIPANTS INCLUDED:

THOUGHT LEADERS

- 1. Keith Auwai
- 2. Hōkūlani Holt-Padilla

THE WORKING GROUP

- 1. Leilani Basham, PhD
- 2. Jesse Cooke, CPA
- 3. Susan E. Crow, PhD
- 4. Jo-Lin Lenchanko Kalimapau
- 5. Kuʻuipo Laumatia
- 6. Jonah La'akapu Lenchanko
- 7. Thomas Joseph Lenchanko
- 8. Noa Kekuewa Lincoln, PhD
- 9. Kukui Maunakea-Forth
- 10. Manulani Aluli Meyer, PhD

HAWAIIAN CIVIC CLUB OF WAHIAWĀ (HCCW)

- 1. Kupuna Keʻalohilani Johnson
- 2. Michelle Matsuoka
- 3. Winona Aguero
- 4. Amelia Kelly
- 5. Sheila Valdez
- 6. Uʻilani Akee
- 7. Kupuna Manuel El Togando
- 8. Michelle Cabalse
- 9. Kupuna Ray Loo

- 10. Jo-Lin Lenchanko Kalimapau, Treasurer
- 11. Kupuna Marie "Malia" Doo
- 12. Kupuna Henry Doo
- 13. Kupuna Pila Short, Sgt. at Arms
- 14. Vicki Pakele
- 15. Thomas J. Lenchanko
- 16. Krystal-Lee Tabangcura, Secretary
- 17. Kalae Balino
- 18. Hazel Galbiso
- 19. Kupuna Aloha Kekipi
- 20. Kupuna Roselani Hall, Founding Member, 1960
- 21. Juliet Kauhane
- 22. Kupuna Yvonne Leimomi Gasper
- 23. Noelani DeVincent, Vice President
- 24. Sheila Valdez
- 25. Amy Kelly
- 26. Anne Kauhane

NEIGHBORING LANDOWNERS

- 1. Myra Kaichi, ADC (State)
- 2. Eugene Takahashi, DPP (City)
- 3. Janis Wong, Dole
- 4. Dan Nellis, Dole
- 5. Mary Bellow, Poʻohala Farms Goat Dairy

76. Wayne Brumaghim



WAHIAWĀ NEIGHBORHOOD BOARD

'AHA HIPU'U

DAUGHTERS AND SONS OF HAWAIIAN WARRIORS -- MĀMAKAKAUA

COMMUNITY PARTICIPANTS (NAME AS SIGNED-IN)

O / · · · / · ·		111127133131423 114)			
1.	Maha	27. Shannon	53. Aloha Kekipi	77.	Holly Flores
2.	Alex	28. Kahea	54. Tom Lenchanko	78.	Julia Estrella
3.	Alison	29. Lena	55. Dane Sjoblom	79.	Alumki Akee
4.	Wayne	30. Tina	56. Wikuki King	80.	Joseph Mahoe
5.	Richard	31. Ouida	57. David Herrera		Alvina
6.	Kiilani	32. Dean	58. Loreen Herrera	81.	Don Glover
7.	Keola	33. Heidi	59. Kaui Racette	82.	Kwai Daugherty
8.	David	34. Jason	60. Yvonne Gasper	83.	Makani Ortogero
9.	Lisa	35. Leona	61. Krystal Clark		Clarke
10.	Tricia	36. Robert Oliveria, Jr.	62. Lisa Watkins-		Mort Daniels
11.	Lei	37. Noelani Devincent	Victorino		Manuel
12.	David	38. Yutaka Wada	63. Verile Ann Malina-		Cynthia Au
13.	Dan	39. Yukie Wada	Wright	87.	Winona Aguero
14.	Michelle	40. Samantha Scott	64. Tania Hoffgramm		Kuuipo
15.	Darienne	41. Renee Kamisugi	65. Uichi Pahele	89.	Trustee Ahu Isa
16.	Ray	42. Jo-Lin Kalimapau	66. Bob Lazo	90.	Duke Aiona
17.	Earl	43. Tina Deitschman	67. Jevis Scott	91.	Robert Mansfield
18.	Palaka	44. Kalei Rosa	68. Michelle Cabalse	92.	Daniel Au
19.	Kainoa	45. Ezra Manaea	69. Pila Short		
20.	Bruce	46. TJ Cuaresma	70. Uilani Akee		
21.	Marcus	47. Jonah Keohokapu	71. Christian Flores		
22.	Cynthia	48. Ursula Keohokapu	72. Amanda Langston		
	Don	49. Carolyn Steuer	73. Fran Palama		
	Lei	50. Kukui Maunakea-	74. Joslyn-Marie		
	Kuaipo	Forth	Kikila		
	Dillan	51. Paul Flores	75. Phillip Akau		
			76 Wayne Brumaghim		

52. Winona Aguero



KŪKANILOKO



TABLE OF CONTENTS

UI - INTRODUCTION	
Kūkaniloko History	1
The OHA Acquires Wahiawā Lands	3
THe OHA's Conceptual Direction for the Property	6
02 - MOʻOKŪʻAUHAU	
Genealogy of Kūkaniloko	12
PLACE – What the land and its names reveal	13
PEOPLE – Sacred Chiefs, Akua of the Land	30
PRACTICE – Birthing Site, Chiefly Center, Place of Refuge, Astronomical Significance	41
Timeline of Land Stewardship	48
Appropriate Cultural Protocols	51
Examples of Contemporary Cultural Practices	52
03 - MOʻOLELO ʿĀINA	
The OHA's Wahiawā Lands Planning OverArching Concepts	59
The OHA's Conceptual Direction - Proposed Land Uses for Wahiawā lands	59
Related Initiatives or Pertinent Information Review	65
Regulatory Framework	79
Existing conditions	84
Roadway System	90
Potable Water System	90
Sanitary Sewer System	91
Storm Drainage System	93
Electrical, Telephone, Cable, and Data (Roadway) System	95
Gas System	95
04 - MOʻOLELO KĀNAKA	
Community Engagement	101
Information GATHERING	103
Phase 1: Pre-Planning	104
Phase 2: Basis Complete + Start of Conceptual Master Plan	105

	Lālā ʻlke Pono a Kūkaniloko Working Group	106
	Creating a Guide for Planning and Development	
	Ke Kumupa'a / The Foundation	
	Phase 3: Mid-planning	
	Phase 4: Master Plan	
	Conceptual Planning AND Outreach Outcomes	
	Conceptual GOALS	
05	- CONCEPTUAL PLAN	
03	Design Narrative	124
	DRAFT Design Guidelines	
0.5		144
06	- MOʻOWAIWAI	
	Recommendations	
	Working Group Members	173
API	PENDICES	
	APPENDIX A: Glossary of Hawaiian Words	194
	APPENDIX B: Glossary of Terms	199
	APPENDIX C: Ka Hoku o ka Pakipika, He Inoa no Kunuiakea	207
	APPENDIX D: Pages 63-70, from "Kūkaniloko Ka Piko Aliʻi no Hawaiʻi"	211
	APPENDIX E: Pages 202-205, from "Kūkaniloko Ka Piko Aliʻi no Hawaiʻi"	219
	APPENDIX F: Project Site TMK Information	223
	APPENDIX G: 5-Acre Parcel Roadway Easement	228
	APPENDIX H: Honolulu Land Use Ordinance Subset of Applicable Information	229
	APPENDIX I: OHA 511-Acre Parcel: Zoning, Conservation Easement, & Covenants & Restrictions	248
	APPENDIX J: OUTREACH: Community Meetings	255
	APPENDIX K: OUTREACH: Stakeholder Meetings.	340
	APPENDIX L: OUTREACH: Working Group Programming	454
	APPENDIX M: Working Group Shared Information	729
	APPENDIX N: Master Plan Utility Study	748
	APPENDIX O: Case Study Research	772
	APPENDIX P: Committee on Resource Management Action Item #1810	851

Appendix Q: Applicant Selection Summary & Working Group Charter_____857

LIST OF FIGURES

01 - INTRODUCTION

	FIGURE 1: Aerial of Kūkaniloko site	1
	FIGURE 2: Neighboring Landowners Map	5
02	- MOʻOKŪʻAUHAU	
	FIGURE 3: Historical Map of Wahiawā and Wai'anae Uka. Bishop Museum. Sites of O'ahu	14
	FIGURE 4: Composite Historical Map of Schofield/Wai'anae/Wahiawā areas	15
	FIGURE 5: Plan Map of Kūkaniloko, Birthstone placement	24
	FIGURE 6: Boundaries of Kūkaniloko Birthstones State Monument (5-Acre Parcel)	25
	FIGURE 7: Photo of Kūkaniloko from the National Register Nomination Form	26
	FIGURE 8: Photo of Kūkaniloko today, from the March 18, 2017 site visit	26
	FIGURE 9: Map of Kūkaniloko Birthing Stones	27
	FIGURE 10: Photo of Kūkaniloko from the National Register Nomination Form	30
	FIGURE 11: An artist's depiction of the birthing process	32
	FIGURE 12: An artist's depiction of the birthing stones	36
	FIGURE 13: Image of the piko stone	46
	FIGURE 14: Picture of the piko stone and an image showing what the features on the stone represent	46
	FIGURE 15: Kūpuna hula nohoʻiliʻili on the Makahālau	53
	FIGURE 16: September 2000 on-site blessing of the Interpretive Signs for Kūkaniloko	53
	FIGURE 17: The relationships among the three stones and their association with stars	53
	FIGURE 18: The two narrow ends of the piko stone represent the two solstices	55
	FIGURE 19: The year 1300 AD was used to locate star positions from the point of view of Kūkaniloko	55
	FIGURE 20: The orange line runs from the piko stone to the birth stone	55
	FIGURE 21: The constellation Hinaia'ele'ele	56
03 -	- MOʻOLELO 'ĀINA	
	FIGURE 22: Map outlining OHA's Overarching Concepts	<u></u> 60
	FIGURE 23: Central O'ahu Sustainable Communities Plan, Urban Land Use Diagram	
	FIGURE 24: Central O'ahu District Map and Major Roadways	73
	FIGURE 25: Vehicular Circulation and Area Roadways	73



	FIGURE 26: Vicinity Map and Waste Water Treatment Plants (WWTP)	77
	FIGURE 27: Project site TMK Diagram	80
	FIGURE 28: Aerial Photograph	84
	FIGURE 29: City and County of Honolulu Zoning	86
	FIGURE 30: State Land Use Districts	87
	FIGURE 31: Agricultural Lands of Importance to the State of Hawai'i	88
	FIGURE 32: Land Study Bureau's Land Classification	89
	FIGURE 33: Existing Potable Water System	90
	FIGURE 34: Existing Sanitary Sewer System	93
	FIGURE 35: Existing Storm Drainage System	95
04	- MOʻOLELO KĀNAKA	
	FIGURE 36: Community Engagement Phased Process	103
	FIGURE 37: Community Outreach Timeline Diagram	104
	FIGURE 38: Keith Awai	105
	FIGURE 39: Hōkūlani Holt-Padilla	106
	FIGURE 40: Lālā 'Ike Pono a Kūkaniloko Working Group at the OHA Offices	108
	FIGURE 41: Lālā 'Ike Pono a Kūkaniloko Working Group at the 5-acre Birthing Stone Site	108
	FIGURE 42: Lālā 'Ike Pono a Kūkaniloko Working Group at the 5-acre Birthing Stone Site	109
	FIGURE 43: Lālā 'Ike Pono a Kūkaniloko Working Group at the 5-acre Birthing Stone Site	109
	FIGURE 44: Neighboring Land Owners' meeting	111
	FIGURE 45: Neighboring Land Owners' meeting	111
	FIGURE 46: Working Group Two-day Session	116
	FIGURE 47: Working Group Two-day Session	116
	FIGURE 48: Wahiawā Community Meeting #1	118
	FIGURE 49: Wahiawā Community Meeting #1	118
	FIGURE 50: Wahiawā Community Meeting #1	119
	FIGURE 51: Wahiawā Community Meeting #1	119
	FIGURE 52: Wahiawā Community Meeting #1	121
	FIGURE 53: Wahiawa Community Meeting #1	121
	FIGURE 54: Integrated Programming Diagram	123
	FIGURE 55: Vegetation Continuum Diagram	128
	FIGURE 56: Energy, Carbon, Nutrient, Flows and the Agro-Ecosystem Diagram	135



05 - CONCEPTUAL PLAN

	FIGURE 57: OHA's Wahiawā Lands Conceptual Site Plan	137
	FIGURE 58: Welcome Pavilion concept images	138
	FIGURE 59: OHA's Wahiawā Lands Conceptual Site Plan - Welina Zone	139
	FIGURE 60: OHA's Wahiawā Lands Conceptual Site Plan - Piko Zone	140
	FIGURE 61: The Welcome and Interpretive Center concept images	141
	FIGURE 62: Kupu/Nursery concept images	142
	FIGURE 63: OHA's Wahiawā Lands Conceptual Site Plan - Kupu Zone	143
	FIGURE 64: OHA's Wahiawā Lands Conceptual Site Plan	144
	FIGURE 65: 'Ōiwi land stewardship and crop production painting	145
	FIGURE 66: Example of vegetation debris used for composting	148
	FIGURE 67: Photos taken at Kūkaniloko Birthing Stones	150
	FIGURE 68: Ti leaf plant	152
	FIGURE 69: Recycled wood cladding	152
	FIGURE 70: Moss rock wall	152
	FIGURE 71: Agroforestry systems	154
	FIGURE 72: Constructed wetland for water retention and wildlife habitat	155
	FIGURE 73: Perimeter planting around wetlands	155
	FIGURE 74: Examples of native ferns and low shrubs at forest floor	158
	FIGURE 75: Precedent images for types of nodes, covered, open on all sides, or open-to-the-sky cleared vegetation areas	162
	FIGURE 76: Amphitheater with retailing walls	163
	FIGURE 77: Dry stack stone walls - Billy Fields	163
	FIGURE 78: Rock wall construction	164
06	- MOʻOWAIWAI	
	FIGURE 79: OHA's Wahiawā Lands Conceptual Site Plan	169
	FIGURE 80: Examples of pricing of product at Foodland	
	FIGURE 81: Students visiting a local aquaponics production facility	
	FIGURE 82: Modern hydroponics production facility	173
	FIGURE 83: Jesse Cooke, CFA	
	FIGURE 84: Jo-Lin lenchanko Kalimapau	
	FIGURE 85: Kukui Maunakea-Forth	
	FIGURE 86: Kuʻuipo Laumatia	

XII JAN 2019 | CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

FIGURE 87: Jonah La'akapu Lenchanko	175
FIGURE 88: Leilani Basham, Ph.D	176
FIGURE 89: Manulani Aluli Meyer, Ph.D	176
FIGURE 90: Noa Kekuewa Lincoln, Ph.D	177
FIGURE 91: Susan E. Crow, Ph,.D	178
FIGURE 92: Thomas Joseph Lenchanko	178





01 | INTRODUCTION





INTRODUCTION

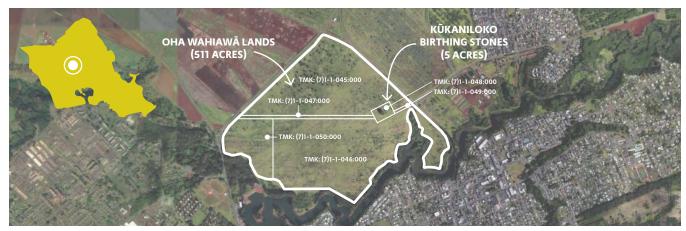


FIGURE 1: Aerial of Kükaniloko site

Kūpuna regarded Kūkaniloko as Oʻahu's geographic and spiritual piko. It is rightly viewed as one of the most sacred places in Hawaiʻi. Generations of aliʻi were born upon the site's birthstones and consecrated in the presence of the highest-ranking aliʻi. It is a place steeped in their mana. The aliʻi said to have been born at Kūkaniloko include: Kapawa, Laʻamaikahiki, Māʻilikūkahi, Kalanimanuia, and Kākuhihewa. The following section provides information on their legacies and the importance of their relationships to the moʻokūʻauhau for the Plan on the OHA's 511-acre property in Wahiawā.

KŪKANILOKO HISTORY

KAPAWA

Kūkaniloko was established by Nanakāoko (k = kāne) and Kahihiokalani (w = wahine) for the birth of their son Kapawa. Kapawa was the first chief to be set up as a ruling chief. Nanakāoko descends from the 'Ulu lineage, which is favored by Maui and Hawai'i chiefs as the genealogical link to Papa and Wākea, progenitors of the Hawaiian people, and proof of their royal status. Kahihiokalani descends from Māweke of the Nana'ulu lineage, favored by Kaua'i and O'ahu chiefs as their main genealogical line. The birth of Kapawa, therefore, bears significance as he represents a unifying of both the recognized and undisputed 'Ulu and Nana'ulu lines from which descend the highest ranking ali'i. Perhaps herein lies the inspiration for the creation of Kūkaniloko.

LA'AMAIKAHIKI

Moʻolelo (stories) regarding the birth and origins of Laʻa are extremely varied. One of these versions, recorded by nineteenth century Hawaiian scholar Samuel Mānaiakalani Kamakau, is as follows. Laʻa, later to be known as Laʻamaikahiki, was born to Ahukai (k) and Keakamilo (w) at Kapaʻahu in Kūkaniloko, Wahiawā, Waialua, Oʻahu. He was born in the time of Moʻikeha, a famous aliʻi who frequently traveled between Hawaiʻi and Kahiki, where his brother Olopana ruled as high chief. On one of these trips, Moʻikeha took Laʻa with him, as he was designated to be Olopana's heir to the kingdom.

Moʻikeha would eventually return to live on Kauaʻi, and when his son Kila reached adulthood, Moʻikeha sent him to fetch Laʻa from Kahiki to be a chief. Not only did this voyage require a great amount of effort and resources, but it also came as a surprise to Kila's older brothers who had assumed that the seat of power would naturally transfer to them. Why, then, might it have been so important that Laʻa become chief? One possible explanation is that Laʻa's birth at Kūkaniloko established him as having a higher rank than those chiefs living within Hawaiʻi at the time, making him the most desirable choice as aliʻi. The next known aliʻi to be born at Kūkaniloko is Māʻilikūkahi (k), descended from Laʻamaikahiki's son Lāulialaʻa.

MĀ'ILIKŪKAHI

Māʻilikūkahi was the son of Kukahiaililani (k) and Kokalola (w). At the age of 29, he was chosen by the people (chiefs, priests, and commoners) to reign as king of Oʻahu, replacing the deposed chief Haka who was infamous for his stingy ways. In order to consecrate Māʻilikūkahi to rule, elaborate ceremonies were performed that reenacted both the cutting of the piko and the circumcision – ceremonies usually reserved for the time of birth – for the purposes of cleansing the new chief.

At the start of Māʻilikūkahi's rule, the land divisions across Oʻahu were in a state of confusion. He immediately ordered the aliʻi to divide all of Oʻahu into moku, ahupuaʻa, ʻili kūpono, ʻili ʻāina, and moʻo ʻāina. Furthermore, he developed a tiered structure of aliʻi – from high chiefs to lesser chiefs to warrior chiefs – placed in charge of each land division. This geo-political system clearly defined the kuleana of individuals, families, and government officials and entities within specific sections of land, helping to maintain balance and order throughout. A ruler of incredible significance, Māʻilikūkahi's revolutionary contributions impacted the entire island chain and subsequent generations.

KALANIMANUIA

Kalanimanuia was born at Kapāʻahuʻawa/Pūʻahuʻawa at Kūkaniloko, and her piko was cut at Hoʻolonopahu heiau. Her parents were Kūkaniloko (w), the first Mōʻī Wahine of Oʻahu (probably named after the place) and Luaia (k).

Kalanimanuia succeeded her mother as Mōʻī Wahine of Oʻahu. With her husband Lupekapukeahomakaliʻi, she had four children; first was born Kūamanuia (k) who was raised in Waikīkī to be a haku aliʻi (overlord) there. The second born was Kaʻihikapuamanuia (k) who was raised in Honouliuli, 'Ewa to be a chief there. Third was Haʻo (k) who was raised at Waikele to be a chief there. The fourth was Kekela (w) raised by her parents at Maunakūʻaha, and whose bathing place was at Kahuawai at Kalauao. The reign of Kalanimanuia was one of peace and productivity.

KĀKUHIHEWA

Kākuhihewa was born at Kūkaniloko. Kaʻihikapuamanuia was his father and Kauanuiakānehoalani his mother. The parents were aliʻi kapu, aliʻi nīʻaupiʻo and piʻo chiefs, so the kapu of Kākuhihewa was multitudinous – kapu a mano a lehu. Kākuhihewa was said to have been born in the sleeping place consecrated by the kapu of Līloa, at which time his maternal grandfather Kānehoalani carried him into Hoʻolonopahu heiau.



Forty-eight chiefs, including Mākōkaau, Ihukolu, Kaʻaumakua, and Pakapakakuāua, observed the cutting of his navel cord, and the two drums 'Ōpuku and Hāwea were sounded to announce the birth of Kākuhihewa. When the kahuna had finished the rites of purification – the huikala, kai 'ōlena, lele uli, and lele wai rites – all defilements were cleared away.

Kākuhihewa was 39 years old when he inherited the rule from his father upon his death. Under Kākuhihewa, Oʻahu was renowned for its productivity through extensive cultivation. Chiefs from Hawaiʻi and Maui, hearing of Oʻahu's great prosperity, would come to live with Kākuhihewa because of the great abundance of food, fish and fresh water on his lands. He was known as an "aliʻi huhū ʻole, ʻaʻole hoʻomauhala" – a chief not quick to anger, one who did not cherish revenge or bear a grudge. His time as aliʻi, spanning roughly 50 years, is often referred to as a "golden age" for Oʻahu.

THE OHA ACQUIRES WAHIAWĀ LANDS

In 2012, with assistance from the Trust for Public Lands (TPL) and the State of Hawai'i, the OHA secured 511-acres (TMK: (7)1-1-045; 046; 047; 049; 050) of a 1,732-acre parcel in Central O'ahu, purchased from the Galbraith Estate (Pg 1, Figure 1). The 511-acres surrounds a 5-acre flag-lot (TMK: (7)1-1-048). The 5-acre parcel serves as the current buffer for the Kūkaniloko Birthing Stones, which is on the National Register of Historic Places, and is currently owned by the State of Hawai'i (The Department of Land and Natural Resources [DLNR], State Parks Division). Together, these 516-acres are located just north of Wahiawā town towards Hale'iwa.¹

In summary, the OHA's purposes, as mentioned below, for the acquisition of the 511-acre parcel are intended to guide the future uses of the area around the Kūkaniloko Birthing Stones such that they are consistent with Hawaiian cultural values. The scope of the OHA's Conceptual Master Planning project focuses on the 511-acre parcel, which is owned in fee by the OHA. However, the Plan also considers the 5-acre flag-lot which is owned in fee by the State of Hawai'i.

The following section contains more information about the 511-acre property and a summary of the OHA's work thus far.

LOCATIONAL INFORMATION

AHUPUA'A: Kamananui MOKU: Waialua MOKUPUNI: Oʻahu

WIND NAMES: Waikōloa (water pulling far), Waiʻōpua (water of cloud banks), Kēhau (dew, mist, dewdrop)

RAIN NAMES: Līhu'e (cold chill)

Peter Apo. "Preserving Kukaniloko, Most Sacred Of Hawaiian Places." Civil Beat News. 2016. Accessed October 14, 2016. http://www.civilbeat.org/2016/09/peter-apo-preserving-kukaniloko-most-sacred-of-hawaiian-places/.

JAN 2019

JAN 2019 | CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

ZONING

The City & County of Honolulu (C&C) has zoned the property as "AG-1 Restricted Agriculture." AG-1 is the most restrictive agricultural designation intended to protect and preserve important agricultural lands.

CONSERVATION EASEMENT

Ownership: Fee Simple
Hawai'i State Land Use District: Agricultural
Acquisition Cost Paid by the OHA: \$3 million
Acquisition Date: 2012

The OHA paid \$3 million, leveraging it with \$1 million from the Army, \$1 million from the TPL sources, and \$2 million from the C&C. The funds provided by the Army and C&C resulted in the creation of a conservation easement that accompanies the property. The conservation easement restricts the use of the property to minimize uses that conflict with agriculture and the military mission (training exercises and flight paths). For more detailed information, please see CONSERVATION EASEMENT, COVENANTS AND RESTRICTIONS in the Moʻolelo 'Āina Section (pg. 81) of this document and/or refer to Appendix I for the actual document.

The OHA's Land Designation: Legacy and Programmatic Property LLP manages the OHA's Legacy (L) and Programmatic (P) lands as defined below:

- (L) = Conservation and Preservation; Cultural Lands
- (P) = Agricultural; Educational; Health and Human Services; Community Lands

The 511-acre property in Wahiawā is considered a Legacy and Programmatic land holding to the OHA. Thus, the LLP focuses on the holistic value of the site (social, cultural, environmental and ecological) and considers revenue-generating components to support management, maintenance, and development efforts.

PURPOSES OF ACQUISITION

Per Action Item ARM/BAE #11-07 OHA's purposes of acquiring the property is as follows:

- 1. To protect Kūkaniloko by providing a buffer against future incompatible development in the area;
- 2. To explore the development of compatible agricultural uses and other programmatic initiatives;
- 3. To contribute to Hawai'i's food self-sufficiency, preservation of open space and watershed lands and overall community planning goals for central O'ahu.

NEIGHBORING LAND OWNERS/USES

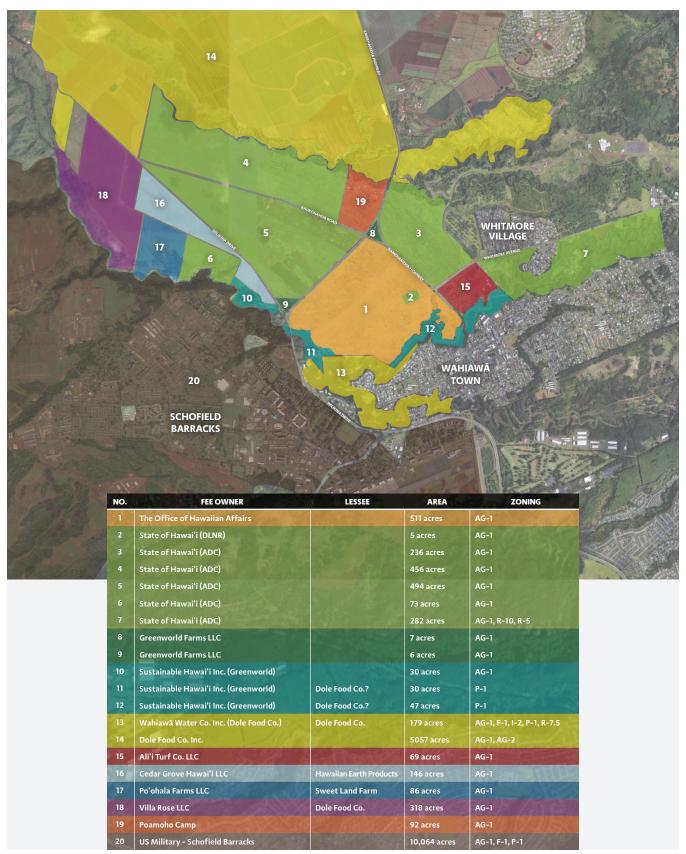
» Villa Rose » Cedar Grove Hawaiʻi » Aliʻi Turf

» Poʻohala Farms
» Sustainable Hawaiʻi
» Poamoho Camp

» ADC (State) » Greenworld Farms » US Military

KUHIKUHI PU'UONE





JAN 2019 | CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

THE OHA'S CONCEPTUAL DIRECTION FOR THE PROPERTY

In February 26, 2015, the OHA's LLP (then the Land and Property Management Program) presented a conceptual direction for the property that gained unanimous support by the Board of Trustees. This conceptual direction was informed by input provided by the Hawaiian Civic Club of Wahiawā (HCCW), long-time caretakers of the site. The conceptual direction aligned itself with the OHA's Mission, purposes of acquisition, and an understanding that planning for a property of this level of significance would require a unique approach. The premise was set that Kūkaniloko was extremely sacred, has a rich and valuable historical significance, and is a cultural kīpuka resource to the OHA's beneficiaries and the greater community for current and future generations. For more detailed information about these concepts, please reference the Moʻolelo 'Āina, Section 3 (pg.61) of this document.

Three primary land use concepts emerged as follows:

1) Ho'omana: Protection/Sanctification; 2) Ho'ona'auao: Education/Connection; and

3) Ho'oulu'āina: Agriculture/Ecological Rehabilitation/Soil Remediation.

PREVIOUSLY CONDUCTED STUDIES AND CONSEQUENT ACTIONS TAKEN

After obtaining support from the Trustees the LLP conducted a number of studies in preparation for master planning.

The studies and actions consisted of:

- 1. Created a Preservation Plan for the 5-acre parcel on which the Birthing Stones are located (currently owned by DLNR-State Parks Divison). The Preservation Plan sets the direction for actions that the OHA shall and may take to care for the historic site that is on both the State and Federal Register of Historic Places. The OHA officially submitted the Preservation Plan to the State Historic Preservation Division (SHPD) in December of 2017 and the OHA is awaiting any comments and/or approval.
- 2. Addressed outstanding issues relative to the Traditional Cultural Properties (TCP) study, originally completed in 2012. The TCP study contains a plethora of valuable information with regard to the history of the Kūkaniloko birthing stones and the surrounding area. The research documented in the TCP study helped to inform the Preservation Plan. The information the study provided will be a valuable resource for the OHA, the OHA's beneficiaries, and anyone who is interested in the Kūkaniloko Birthing Stones or the surrounding area. After additional analysis, it was determined that the OHA did not agree with specific portions of the study and has since corrected those specific issues by adding an "OHA Commentary" document to the TCP study. The TCP study will now be officially included (and thus published) as a part of the appendix of the Preservation Plan.
- 3. Created a draft Archaeological Inventory Survey Plan (AISP) for the 511-acre property. The purpose of the AISP: To plan in preparation to conduct an Archaeological Inventory Survey (AIS) that complies with the SHPD regulatory requirements in a way that documents the processes, procedures, and outcomes of how the OHA will conduct an AIS on the OHA's 511-acre parcel in Wahiawā (when required). The LLP worked with consultants, the OHA's beneficiaries, experts in the fields of archaeology and law, traditional cultural practitioners, and experienced land stewards to better

understand any requirements, typical practices, and issues that may be of concern to the OHA's beneficiaries and practitioners prior to the OHA taking any action. It was important for the OHA to understand this issue so that we can take action in a way that does not compromise cultural integrity; and sets an example for other landowners to follow. The OHA officially submitted the AISP to SHPD in March 2018 and the OHA is awaiting any comments and/or approval.

- 4. Conducted water, soil, and agricultural studies to inform the Plan. This included: a) an analysis of the OHA's water resource and filtration options; b) water infrastructure needs; c) recommendations for soil rehabilitation; and d) agricultural recommendations for the OHA to consider.
- 5. The OHA has secured water resources from the Agribusiness Development Corporation (ADC). The OHA worked to secure an agreement with the ADC such that the ADC will provide 1 million gallons of water per week (142,857 gallons per day) to the OHA. The OHA will need to pay for the cost of transporting the water (still to be negotiated) and provide water storage facilities to receive the water. Although the OHA anticipates a maximum water need of 1-1.5 million gallons per day under the most extensive agricultural models, it is the only feasible water source available to the OHA at this time.
- 6. The OHA has worked to construct an entry gate at the Kamehameha Highway access point to control vehicle access to the site and mitigate unsafe conditions.
- 7. The OHA has conducted houseless sweeps and has removed over 50 tons of trash and illegally constructed "dwellings" that previously existed on the 511-acre property. Additionally, the OHA has implemented regular security patrols to keep the property clear of illegal trespassing and illegal camping.
- 8. The OHA has cleared, and kept clear, invasive vegetation on approximately 23-acres of the 511-acre property where illegal trespassing and illegal camping were previously prevalent. Additionally, the OHA has maintained a firebreak around the 5-acre property where the Kūkaniloko Birthing Stones are located, inclusive of the easement road that traverses the OHA's 511-acre property to enable access to the site.
- 9. The OHA has conducted a property boundary survey to relocate and permanently mark the property pins. More than half of the property boundary survey was completed in collaboration with the houseless sweeps completed in 2018.

MASTER PLANNING

Based on the above, the OHA began its conceptual master planning process for the Kūkaniloko Birthing Stones and the surrounding 511-acre parcel. The OHA has also engaged in a comprehensive community engagement effort which included the formation of a Kūkaniloko Master Planning Working Group. The group included various community members with expertise in areas ranging from cultural and natural resource management, agriculture, archaeology, business and marketing, education, Hawaiian culture, environmental and property law, and other relevant fields. The Working Group's task was to advise the OHA in the development of a unique, innovative, exemplary, and culturally-focused Master Plan, which will harmoniously protect, preserve, and perpetuate the resources of Kūkaniloko and the surrounding properties.



02 MO'OKŪ'AUHAU





MO'OKŪ'AUHAU

This is the first of four phases in the planning process that sets the foundation for everything to follow. The value of exploring the genealogy and history of the place, people and place names that are significant to Kūkaniloko will ensure that the past is honored into the future. The research and moʻolelo shared in this section will be further developed by the community in the moʻolelo phase.

Literature describes Kūkaniloko as a land designated for ali'i kapu, those sacred chiefs descending from royal bloodlines. Although difficult to pinpoint an exact date, it is generally accepted that Kūkaniloko was established as a chiefly birthing site around AD 1000. As one of just two documented traditional birthing places for the highest ranking of ali'i, Kūkaniloko was pivotal to the establishment of Oʻahu's chiefdom, and its pōhaku (stone) bore witness to the birth of a number of sacred chiefs.

Considering the worldview of the traditional Hawaiian, the pōhaku are more than just stones. They are living beings with an essence, with mana. In an exchange documented by Lahilahi Webb in 1925, one informant shares his familiarity with some of these pōhaku. He knew them by name and described their relationship to each other, regarding them as people and not simply as inanimate objects. The mana of this place is understood only when people recognize that it is here that 'āina and kānaka resound together in harmony, reverberating from deep within. There is divinity in the union of nature and man, as the land itself becomes the womb that harnesses the energies of the life cycle and cries out across the generations.

Some of the main takeaways from this research maintain that Kūkaniloko is:

- » A place of refuge.
- » Situated within a larger chiefly center in the land area known today as Līhu'e.
- » A place for activities such as storytelling, distribution of lands, recalling traditions of the ancestors, reciting genealogies, practicing battle skills, wielding war clubs, thrusting spears, observation of omens, study of land features, study of the stars, playing konane (game of strategy), learning the mele (songs and chants) of the ancestors and chiefs, practicing sports that strengthened the body (running, learning to leap from cliffs, maika [stone] rolling, dart throwing, boxing, hand wrestling, sitting wrestling, shoulder wrestling, hand-to-hand fighting), cultivating food, and fishing.
- » An extremely sacred place. Not all activities are suitable in and around the Kūkaniloko birthing site. Participants in the 2011 TCP study agreed that appropriate activities should be conducted with cultural respect and sensitivity and in ways that don't negatively impact the site. Everyone who visits Kūkaniloko does so with a clear understanding of their purpose and chooses appropriate protocol based on that purpose.



GENEALOGY OF KŪKANILOKO

The origins of the Hawaiian world are perpetuated through moʻokūʻauhau – cosmogonic genealogies that record the sequential birthing of ancestors through a succession of paired progenitors.³ This moʻo, an unending genealogical lineage, is all encompassing. It interweaves past, present, and future in cyclical time. It binds ʻāina, akua (God), and kānaka together in a single familial system.

Every kānaka knew their place in the physical and spiritual realm because of their moʻokūʻauhau. They understood the relationship between humans and the environment; whereas humans are the youngest siblings born in a sequence that established the environment as the eldest and most sacred, followed subsequently by flora and fauna, and then the gods.⁴ In all its complexity, genealogy communicates the hierarchy of mana in the world.

He ipu hoʻoilina mai nā kūpuna mai.

An inherited container from the remotest ancestors.

Said of the womb, the container by which the family line continues. ⁵

The mother's womb is where all life begins. It feeds and nurtures; it protects. It is sacred. With reverence for the importance and mana of Kūkaniloko, famous birthplace of high ranking chiefs, it is likened to the womb. Kūkaniloko holds a cultural, historical, and spiritual identity for Hawaiians. It is a place through which genealogy has been passed, one generation to the next. It is a physical representation of moʻokūʻauhau. It is the ipu hoʻoilina from our ancestors.

Understanding Kūkaniloko and its evolution over time requires an intimate knowledge of multiple layers of history:

- » The natural landscape its characteristics, given names, and associated stories
- » The chiefs born there their genealogies, inherent mana, and significant achievements
- » The cultural practices how the indigenous people interacted with this land, what they chose to do here and why
- » The stewards of the land those whose responsibility it has been to care for this place

In the modern day pursuit of concrete answers and understandings, it is important to allow for the existence of multiple truths. Perhaps nowhere else is this theme more prevalent than in Hawaiian moʻolelo. Additionally, as kānaka in a contemporary world, some things may never reveal themselves to us, and we must accept they will remain in pō, in obscurity. Traditional Hawaiian worldview is grounded in the idea that not all knowledge is for everyone. Access to things of great significance is carefully regulated in order to preserve their mana.

³ Kelley Uyeoka et al, Kūkaniloko Ka Piko Ali'i no Hawai'i DRAFT Archaeological Preservation Plan for Kūkaniloko (2016), 61.

⁴ Ibid, 61

⁵ Mary Kawena Pukui, 'Ōlelo No'eau: Hawaiian Proverbs and Poetical Sayings (Honolulu: Bernice Pauahi Bishop Museum Press, 1983), 73.

KUHIKUHI PU'UONE

PLACE - WHAT THE LAND AND ITS NAMES REVEAL

Kūkaniloko is located in the moku of Waialua on the island of Oʻahu and sits in the saddle between the Koʻolau and Waiʻanae mountain ranges. It is located in the geographical center of Oʻahu and the inferred cultural significance of said placement is undeniable. The natural landscape of this saddle, referred to here as the Central Plateau, is rich with freshwater resources. Narrow gulches that crossed the plateau surface were major agricultural areas for kalo (taro) and 'uala (sweet potato) and could support a sizable population.⁶

Nineteenth century historical references place Kūkaniloko within the land divisions of Līhu'e, Wahiawā, Halemano. As with many other areas, however, specific land names and boundaries have shifted and been adapted over time to fit the needs of the people. Today, Kūkaniloko is recognized as belonging to Wahiawā in the ahupua'a of Kamananui. While much can be learned just by examining the natural features of the land itself, a more rich understanding of place may be gained through exploration of traditional Hawaiian literature. The names, songs, and stories associated with these places illustrate the land's unique characteristics and personality, as captured through a Native Hawaiian cultural lens. ⁷

MEANING OF NAMES

In the case of the traditional Hawaiian... almost every significant activity in his life was fixed to place. No genealogical chant was possible without mention of personal geography; no myth could be conceived without reference to a place of some kind; no family could have standing in the community unless it had a place; no place of significance, even the smallest, went without a name; and no history could have been made or preserved without reference, directly or indirectly, to a place. ⁸

Place, for Native Hawaiians, embodies the history of the people. The significance of place is transmitted across the generations through the act of naming. Native Hawaiians name what they value, and the names themselves become receptacles for their histories. They bring forth images of how the land appeared, its winds and rains, its smells, and how it was used. ⁹ Oli and mele have also long been a means of perpetuating traditional knowledge. Mary Kawena Pūku'i, premiere Hawaiian scholar of the twentieth century, writes, "Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love, and of celebration for any occasion that may arise." ¹⁰ Because Hawai'i was a purely oral society up until the early 1800s, mele were an ideal vehicle through which to preserve histories, observations, emotions, etc. as many poetic devices were used to help the composer and audience to quickly memorize them. ¹¹ Page 17 contains information pertaining to some of the places most frequently referenced in Hawaiian literature regarding Kūkaniloko and its surrounding lands. This is by no means an exhaustive list. It is only meant to provide a brief snapshot into some of the deeper traditions and significance of these places from a cultural perspective.

⁶ Uyeoka et al, Kūkaniloko, 21-29.

⁷ Ibid. 16.

⁸ George Kanahele, Kū Kanaka Stand Tall: A Search for Hawaiian Values (Honolulu: University of Hawaii Press and Waiaha Foundation, 1986), 175-176.

⁹ Ross Cordy et al, A Traditional Cultural Property Study of Kūkaniloko a Wahi Pana on the Central Plateau of O'ahu (2011), 60.

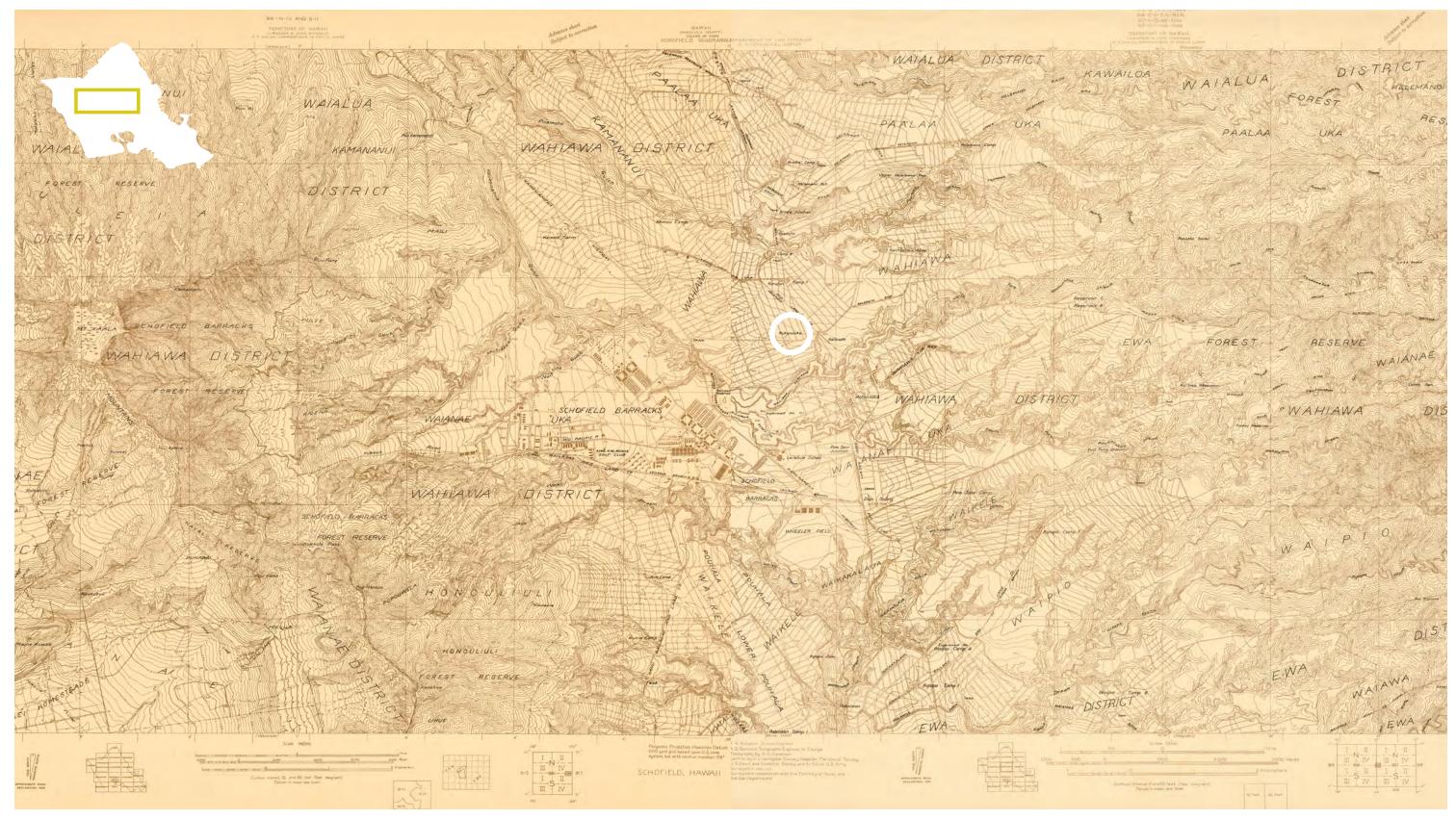
¹⁰ Mary K. Pukui, "Songs (meles) of old Ka'u, Hawaii," *Journal of American Folklore* (1949).

¹¹ Uyeoka et al, Kūkaniloko, 41.

FIGURE 3: Historical Map of Wahiawā and Wai'anae Uka. Bishop Museum. *Sites of O'ahu*.

CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS | DEC 2018

15



FIGURE~4: Composite~Historical~Map~of~Scholfield/Waianae/Wahiawa~areas.~United~States~Geological~Survey~Topographical~Quadrangle~Maps~at~1:31,650~scale,~1910-1933.http://magis.manoa.hawaii.edu/maps/digital/oahu.1910-1933.advanceprint.html

16 DEC 2018 | CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

THIS PAGE IS INTENTIONALLY LEFT BLANK



The following chart provides a high level summary of the place names that are discussed below:

PLACE NAME	LITERAL TRANSLATION	CLASSIFICATION
Halemano	many houses	plateau / wet region / stream / reservoir
Ka'ala	the fragrance	peak / summit
Kūkaniloko	translation not given	birthplace / refuge
Līhu'e	cold chill	ruling center / upland / land division / high plain
Wahiawā	place of noise	land section / ditch / reservoir / town
Waialua	two waters	moku

The place names are accompanied by the following information to help provide deeper context to the site and areas that are often historically associated with Kūkaniloko.

- literal translations of names are from either Place Names of Hawaii or The Hawaiian Dictionary
- land information is taken directly from Place Names of Hawaii
- 'ōlelo no'eau are from 'Ōlelo No'eau: Hawaiian Proverbs and Poetical Sayings
- mele and other notes are individually cited in the footnotes

KA'ALA

- Literal translation: the fragrance 12
- Land information: gulch and highest mountain on O'ahu, Wai'anae range
- Select 'ōlelo no'eau:

KA UA KOLOWAO O KA'ALA.

The Mountain-creeper rain of Ka'ala.

This rain is accompanied by a mist that seems to creep among the trees.

NANI KA'ALA, HE KI'OWAI NA KE KĒHAU.

Beautiful Kaʻala, a pool that holds the dew.

Praise of Mt. Ka'ala, on O'ahu, a depository for the dew.

^{*} For a more comprehensive table of important place names and pertinent information (including a map), see pages 34-39 of Cordy et al's Traditional Cultural Property Study.

¹² Henry Parker, *A Dictionary of the Hawaiian Language* (Honolulu: Board of Commissioners of Public Archives, 1922).



KE KAHA 'ŌHAI O KAIONA.

Kaiona's place where the 'ōhai grows.

Kaiona is a benevolent goddess whose home is Mt. Ka'ala and vicinity. The 'ōhai grew in profusion there. Because of her graciousness, Princess Bernice Pauahi Bishop was compared to this goddess in songs.

Select Mele:

'O Ka'ala kuahiwi mauna kehau Ke ōpū maila lā i Kamaoha Poluea iho la ilalo o Hale'au'au Ke kini ke kēhau anu o Kalena

Kaʻala, mountain enshrouded in mist Flourishing there in Kamaoha Dizzy below Hale'au'au In the thick, cold dew of Kalena 13

LĪHU'E

- Literal translation: cold chill
- Land information: former land division near Schofield Barracks, O'ahu
- Select 'ōlelo no'eau:

HAO NĀ KĒPĀ O LĪHU'E I KE ANU.

The spurs of Līhu'e dig in with cold.

Līhu'e, O'ahu, often gets very cold.

LĪHU'E HŌ'Ā WAHIE LĀLĀ KOA.

Līhu'e lights fires with koa branches.

Līhu'e, O'ahu, once had a grove of koa trees whose branches were used for firewood.

Select Mele:

Moehiolo ka nāulu wai o Līhu'e Ua lana piha aku la 'o Kūkaniloko.

The rain clouds tilt pouring water in Līhu'e It flows till it covers Kūkaniloko.

¹³ "Ka Moolelo o Hiiakaikapoliopele," *Ka Leo o ka Lahui*, March 24, 1893, Volume 2, Number 669. Translation by Hīka'alani (de Silva & Groves).

19



Other notes:

The winds of this area are notably the chilly Waikōloa, Wai'ōpua, and Kēhau winds. They sweep down from the mountain peaks, make the forest cold, cool the lands and people below in the central plateau, and often blow all the way down to the coast of Pu'uloa, the area currently known as Pearl Harbor. These winds also bring with them fragrances of ferns and dew that moistens the land. 14

Aloha ka hau o Ka'ala 'O ia hau halihali 'a'ala mau'u nēnē Honi ai ke kupa o Pu'uloa

Beloved is the dew of Ka'ala The dew which carries the scent of the nēnē grass For the people of Pu'uloa to inhale and enjoy¹⁵

WAHIAWĀ

- Literal translation: place of noise (rough seas are said to be heard here)
- Land information: land section in central O'ahu
- Select 'ōlelo no'eau:

'O Waialua kai leo nui Ia lono o ka uka o Līhu'e Ke wā lā Wahiawā ē Kuli wale ka leo o ke kai Kuli wale ka leo He leo no ke kai ē.

Waialua of the booming seas Heard in the uplands of Līhu'e Wahiawā is aroar The voice of the sea resounds The voice resounds A voice from the sea. 16

¹⁴ Cordy et al, Traditional Cultural Property, 163–164.

¹⁵ Hoʻoulumāhiehie, *Hiʻiakaikapoliopele*, 275 (Hawaiian), 256 (English).

¹⁶ Ibid, 171 (Hawaiian), 161 (English).

» Other notes:

20

The noise referenced in Wahiawa's name could be that of thunder, the breaking waves of the nearby north shore, or the drums of Kūkaniloko – or perhaps a combination of the three. From a Hawaiian viewpoint, the resounding voice of the environment adds mana and gives this area a divine nature.¹⁷

Martha Beckwith speculates as to why the plains of Wahiawā were chosen as both a royal birthing site and home to those sacred drums:

"The site chosen is one frequently visited by thunderstorms, whose manifestations were regarded as the voices of ancestral gods in the heavens welcoming an offspring of divine rank. The drums perhaps simulated the voice of deity." 18

HAI FMANO

- » Literal translation: many houses
- » Land information: stream in the Wahiawā and Hale'iwa areas
- » Select 'ōlelo no 'eau:

HALEMANO HONI PALAI O UKA.

Halemano smells the ferns of the upland.

At Halemano, Oʻahu, the breezes bring the fragrance of ferns from the upland.

» Select Mele:

'Ohu'ohu Halemano me ka lau lehua Ua kanu nā pua Kūkaniloko Ma loko mai 'oe me Li'awahine I ke kui 'ōhelo 'ai a ka manu

Bedecked is Halemano in lehua leaves
With flowers grown at Kūkaniloko
Do come in with Li'awahine
To string 'ōhelo berries well-liked by the birds ¹⁹

¹⁷ Cordy et al, Traditional Cultural Property, 260.

 $^{^{\}rm 18}$ Martha Beckwith, $\it Hawaiian\,Mythology$ (Honolulu: University of Hawaii Press, 1970), 377.

¹⁹ Kīhei de Silva, "Kākuhihewa" (2014).



WAIALUA

- » Literal translation: two waters ²⁰
- » Land information: O'ahu District that extends from Waimea Bay to Ka'ena Point
- » Select 'ōlelo no'eau:

A NUI MAI KE KAI O WAIALUA, MOE PUPU'U O KALENA I HALE'AU'AU.

When the sea is rough at Waialua, Kalena curls up to sleep in Hale'au'au.

Applied to a person who prefers to sleep instead of doing chores. A play on lena (lazy) in Kalena, who was a fisherman, and hale (house) in Hale au au.

I WAIALUA KA POʻINA A KE KAI. O KA LEO KĀ 'EWA E HO'OLONO NEI.

The dashing of the waves is at Waialua but the sound is being heard at 'Ewa.

Sounds of fighting in one locality are quickly heard in another.

» Select Mele:

A ea mai ke kai o Waialua,
Wawā nō 'ōlelo 'oko'a i pali,
Nūnū me he ihu o ka pua'a hae lā,
'Ako ka lau o ka nalu pi'i i ka pali,
Kū pali Kaiaka i ka 'ino,
'Ino ka lae o Kukuilau'ānia,
He maka-ni.
Makani me he ao lā ka leo o ke kai,
Kuli pā'ia wawā ka uka o Līhu'e,
Ō me he 'oko'a lā i ke kula,
Ke kula hahi a ke kai e halulu nei,
Halulu ma ke Ko'olau, Ho'olono 'Ewa,
'A'ole i 'ike i ka pō 'ana a ka nalu,
Kuhihewa wale no Wahiawā – ē.

Let the sea of Waialua rise,
Let the roar echo over the hills,
Rumble like the grunt of the wild pig.
Let the rising wave break the leaf from the cliff.
Kaiaka cliff stands above the storm,
Stormy is the cape of Kukuilauʻānia,
Windy indeed it is!

²⁰ John Clark, *Hawai'i Place Names* (Honolulu: University of Hawaii Press, 2002), 372.

22 JAN 2019 | CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

The voice of the sea rises upon the wind
Deafening those in the uplands of Līhu'e,
As it is borne over the plain,
The rumbling of the sea treading upon the plain
Rumbling over Ko'olau, 'Ewa hearkens
She has not seen the rising of the waves
And mistakes it for Wahiawā. ²¹

» Other notes:

In analyzing the mele above, Pukui suggests that "the sounds of Waialua's sea that reach Līhu'e and Wahiawā in these chants may actually be kaona for the drums of Kūkaniloko." ²²

KŪKANILOKO

- » Literal translationg: Unknown
- » Land Information: Birthing stones located in Wahiawā
- » Select Mele:

No Kūkaniloko koʻu aloha
Ke kupa noho kula aʻo Kalakoa
Kahi hānau hoʻi o nā aliʻi
Wohi hoʻi aʻo Hawaiʻi nei
Walea i ke kui lei 'Āhihi
Lei hoʻokipa no ka malihini
Paʻa mai uka i ka uhiwai
'O ke kēhau anu kō ke kuahiwi
Halihali mai ana i ke 'ala
Ke 'ala o [ka] maile Nohoanu
'Auʻau aku i ka wai o Kuaikua
Wai hoʻoheno a nā [a]liʻi

For Kūkaniloko is my love The Native born that dwells on the plain of Kalakoa Birthplace of the chiefs High ranking chiefs of Hawaiʻi

²¹ Samuel M. Kamakau, "Ka Moolelo Hawaii," Ke Au Okoa, September 23, 1869, Volume 5, Number 23. Translation from Kamakau, *Ruling Chiefs of Hawaii* (Honolulu: Kamehameha Schools Press, 1961), 423.

M. K. Pukui and A. L. Korn, *Echo of Our Song: Chants and Poems of the Hawaiians* (Honolulu: University of Hawaii Press, 1973), 33.



Wind that carries the fragrance
The scent of the maile Nohoanu
Bathe in the waters of Kuaikua
Cherished pool of the chiefs
Those descendants of Kākuhihewa ²³

» Other notes:

Kūkaniloko is also the name of an ancient chief.

As is common with most traditional Hawaiian place names, historical Hawaiian accounts offer no literal translation of the name Kūkaniloko. Pukui is also surprisingly silent regarding its possible meaning. Although included as an entry in *Place Names of Hawai'i*, no translation is offered. Turning to more modern analyses, many believe the name might refer to the sounds of the birthing activities that took place there. Samuel Elbert, close friend and colleague of Pukui, gave his literal translation of Kū-Kani-Loko as "Upright-Singing-Within." ²⁴

Some members of the HCCW have also offered their own personal interpretations of the name, inspired by renewed interest and kuleana in the area:

Kū - to stand firmly Kani - to sound or cry out Loko - from within (Lurlene Lee)

Kū – to anchor
 Kani – to cry out, labor pains
 Loko – naʻau, internal organ, the womb
 Kūkaniloko - To Anchor the Cry From Within
 (Somerset Makanaole)

 $K\bar{u}$ – to anchor Kani – to cry out Loko – the na'au of the womb where the baby was (within) (Anonymous) 25

²³ John Holani Hao, "He Mele no Kukaniloko," Ka Nupepa Kuokoa, May 28, 1925, Volume 64, Number 22. Translation by Hika'alani (de Silva & Groves).

²⁴ Cordy et al, "Traditional Cultural Property", 261.

²⁵ Ibid, 261-262.

The mana of this place is understood only when people recognize that it is here that 'āina and kānaka resound together in harmony, reverberating from deep within. There is divinity in the union of nature and man, as the land itself becomes the womb that harnesses the energies of the life cycle and cries out across the generations.

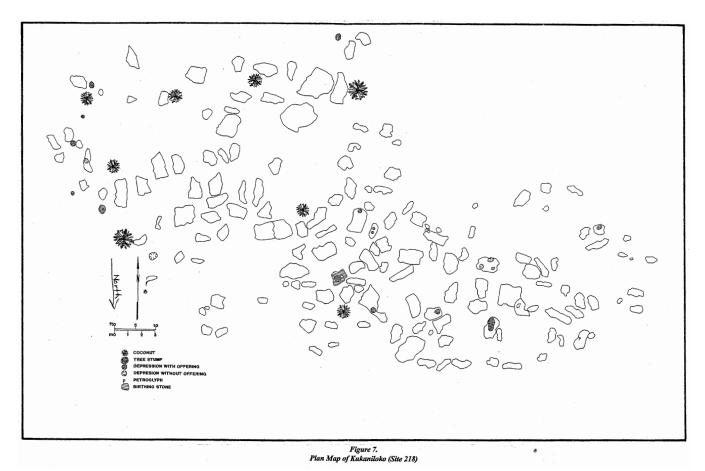


FIGURE 5: Plan Map of Kukaniloko, Birthstone placement. 19950901 Kukaniloko (by Yent) foldouts. Document from Nohopapa's files given to team by OHA.

BIRTHING STONES

Most of the 180 basalt stones situated in the 0.585 acre Kūkaniloko birthing site are large, highly weathered, and deeply imbedded in the red soil that characterizes the central Oʻahu plains. The stones appear to be naturally occurring here and are embedded in the ground to an unknown depth. It is unlikely that they join underground as a contiguous stone mass; they are actually boulders. Their sizes vary from 0.5 to 2 meters along the longest dimension, while their shapes range from round to rectangular to asymmetrical. Almost every stone has at least one large depression in its surface; many of the stones have several. These depressions were most likely originally natural, but undoubtedly were enlarged and made more symmetrical by the Native Hawaiians. Each successive depression measures about 0.25 meters across and may be up to 0.1 meter deep.²⁶

²⁶ "Kukaniloko," National Register (Nomination Form), 1972 & 1994.

PROPOSED KUKANILOKO BIRTHSTONE SITE PARCEL A

AND PERPETUAL NON-EXCLUSIVE ACCESS ROAD EASEMENT

STATE OF HAWAII DAGS - SURVEY DIVISION TAX MAP KEY 7-1-01: 4,8,25,26 Nov. 14, 1990 Wahiawa, Oahu, Hawaii Scale: linch = 200 feet



FIGURE 7: Photo of Kūkaniloko from the National Register Nomination Form



FIGURE 8: Photo of Kūkaniloko today, from the March 18, 2017 site visit.





THIS PRACE IS INTERTITIONALLY LET BLANK

Considering the worldview of the traditional Native Hawaiian, these pōhaku are more than just stones. They are living beings with an essence, with mana. In an exchange documented by Lahilahi Webb in 1925, one informant shares his familiarity with some of these pōhaku. He knew them by name and described their relationship to each other, regarding them as people and not simply as inanimate objects.

Kapanokalani was told this by his grandfather Wahinealii, that the proper site Kukaniloko was about a quarter of a mile (1320 feet) from the site of today that was enclosed by Mr. Goodale, now belonging to the Daughters of Hawaii society. Looking northward, the place now is all cleared of stones and planted with pineapples. He claims the principle High Chiefess in this enclosure is Kahamaluihi. It is a flat stone with many dents in it, more in a laying position, it seems this chiefess and a whole lot of others, all aliis, were going down to the stream to bathe. When they got this far, the drum sounded announcing the birth of the Alii at Kukaniloko. She laid down face up, and all the other aliis laid/staid there too. No one could go until all the ceremonies to the child [were] finished. A few feet from her are two men one mauka and makai. In front of Kahamaluihi are two women, high chiefesses, one mauka and one makai. Then a smaller stone, a hunchback boy, her kahili bearer (kahu) makai side. All the other stones scattered around her are all Aliis as well as those stones further off to the stone that we were told [is] the Kukaniloko stone. 27

In his 1933 publication, J. Gilbert McAllister recorded and documented various archaeological sites across Oʻahu. One point of interest is that in his description of the Kūkaniloko site, it seems that the pōhaku were much more visible then. In an excerpt from his letters written to colleagues, he also noted that, at that time, the birthing stones were entirely fenced off by barbed wire and that a key was necessary to enter. The key was kept by Webb, a member of the Daughters of Hawaiʻi Society who served as steward of the site.²⁸

There is now little to see at Kukaniloko. It is an enclosed area about one-half acre in size, with many large stones, some just visible, others protruding to a height of 3 to 4 feet, scattered about on a well-kept lawn. Tall trees border the site. To the old Hawaiians these stones were all named and represented alii, but now the only name remembered is Kahamaluihi, a flat stone near the center of the group. The old Hawaiians of today remember that in their childhood they were never allowed by their parents to approach even near the sacred birthplace, an indication of the great respect in which Kukaniloko was held, even a century after contact with Europeans and more than a half century after the coming of the missionaries.²⁹

McAllister's informants included Oscar Cox, John Holani Hao, and Daniel Hookala, the latter two being elderly men in the late 1920s-1930s. If they were in their 70s, this would suggest that Hawaiian residents of the Līhu'e/Wahiawā area were telling this to their children in the 1860s-1870s. This perspective of Kūkaniloko would appear to be one of resident kama'āina commoners, who still knew the importance of the place and considered it kapu to non-ali'i. ³⁰

²⁷ Lahilahi Webb, "Where Kukaniloko Was", 1925.

²⁸ Uyeoka et al, Kūkaniloko, 106.

²⁹ Gilbert J. McAllister, *Archaeology of Oahu* (Honolulu: Bishop Museum Press, 1933), 136.

³⁰ Cordy et al, Traditional Cultural Property, 309.



Another study of Kūkaniloko by Ed and Diane Stasack looked more closely at the many poho, or man-made basins, on the birthing stones. Such poho were found in other birthing-associated cultural sites in the islands, so these seem likely to have been present and served a particular function when Kūkaniloko was in use as a birthing site. Their positioning suggests that the stones of Kūkaniloko were in the same form and position then as they are today. ³¹

More information with detailed descriptions, locations, and photographs of specific pōhaku can be found in both the TCP study and the Draft Archaeological Preservation Plan, prepared for the OHA in 2011 and 2016, respectively.

PEOPLE - SACRED CHIEFS, AKUA OF THE LAND



FIGURE 10: Photo of Kūkaniloko from the National Register Nomination Form

Important periods in early Hawaiian history all hold deep connection to Kūkaniloko. One early writer gives the following descriptive account of its origin and purpose:

There were two famous places for the birth of children of tabu chiefs, viz: Holoholoku, at Wailua, Kauai, and Kūkaniloko at Waialua, Oahu. These birthplaces were thought to add some special divine gift to the sacred place already occupied by a tabu high chief.³²

Literature tells us that Kūkaniloko was a land designated for ali'i kapu, those sacred chiefs descending from royal bloodlines. Although difficult to pinpoint an exact date, it is generally accepted that Kūkaniloko was established as

³¹ Ibid, 210.

³² Lahilahi Webb, "Kukaniloko: Birthplace of Aliis, Oahu's Traditional Mecca of Ancient Times".

a chiefly birthing site around AD 1000. ³³ As one of just two documented traditional birthing places for the highest ranking of ali'i, ³⁴ Kūkaniloko was pivotal to the establishment of O'ahu's chiefdom, and its pōhaku bore witness to the birth of a number of sacred chiefs.

O Kukaniloko ma Wahiawa i Waialua, ua kapu kela wahi me ka ihiihi loa, aia malaila o Hoolonopahu kahi kapu me ka laa loa, he Waihau ia e moku ai ka piko o na'lii, aia ilaila o Hawea ka pahu kahiko i lawe ia mai na aina Kahiki mai, he hoailona alii no ka hanau ana, a me ka moku ana o ka piko, e kani halulu ana ka leo o ka pahu ua akaka, ua hanau ke alii a ua moku ka piko.

Kūkaniloko, at Wahiawā in Waialua, was a kapu and very hallowed place. Hoʻolonopahu was a sacred spot, a consecrated spot. It was the waihau heiau where the navel cords of the chiefs were cut. There the ancient pahu drum Hāwea, which had been brought from the lands of Kahiki, was sounded to announce the birth of a chief and the cutting of the navel cord. It is a symbol of royal birth and the cutting of the umbilical cord. ³⁵

As described in this passage by Kamakau, the sacred birthing stones of Kūkaniloko were intimately linked to Hoʻolonopahu heiau, a waihau or temple where non-human sacrifices (hogs, bananas, coconuts) were made to the gods. It was there that the legendary temple drum Hāwea was kept, along with its companion drum 'Ōpuku. Webb notes that these same two drums "were later brought into use on a similar occasion in honor of Kualii at the heiau of Alala in Kailua, Koolaupoko, Oahu." ³⁶

Some of Oʻahu's most celebrated chiefs were born at Kūkaniloko. The very first of these ali'i to be born at Kūkaniloko was Kapawa (kāne).

NOTE: For the purposes of this document, ali'i names are intentionally not translated. Zepherin Kepelino wrote in the 1860s that "to the Hawaiian the name is important," analyzing the meanings of names is full of problems. Literal translations can often be incorrect, particularly given the fact that older spellings from the 1800s lack the diacritical markings known as the 'okina and kahakō. The appendix in Pukui, Elbert, and Mookini's Place Names of Hawaii vastly expands on these issues. Also, over-interpretation of literal translations can frequently occur, and do. Meanings of names are complex. Rare cases exist where the original meaning is clearly retained in older records or in community knowledge directly from kūpuna. If this is not the case, then all translations and interpretations need to be viewed as hypotheses.³⁷

It was also intentionally decided not to assign approximate dates of rule to ali'i. Assigning time periods to these chiefs is problematic, particularly the further one goes back in time. Because genealogies are chronological, it is possible to

³⁴ Cordy et al, "Traditional Cultural Property", 220–221.

³³ Uyeoka et al, Kūkaniloko, 22.

³⁵ Samuel M. Kamakau, "Ka Moolelo Hawaii," Ke Au Okoa, October 21, 1869, Volume 5, Number 27. Translation by Pukui from Kamakau, Tales and Traditions, 136.

³⁶ Webb," Kukaniloko: Birthplace of Aliis".

³⁷ Cordy et al, "Traditional Cultural Property", 71–72.





FIGURE 11: An artist's depiction of the birthing process. 2001. http://kukaniloko.k12.hi.us/basic/cultural/cultural.html

produce estimates in years for when certain chiefs in these genealogies were living, and thus date associated historical stories. Typically, one assigns a fixed number of years per generation and then counts back by generation from a known individual's documented birth or death in the 1700s or 1800s. In the late 1800s, Abraham Fornander was one of the first to do this with Hawaiian genealogies, and he used 30 years per generation. At the start of the 1900s, the Polynesian Society decided to assign 25 years per generation, and some Bishop Museum researchers for many years used this estimate. Over the last 30 years, a few lead researchers in anthropology that have used oral histories have concluded that a 20 year count seems more accurate and better matches the archaeological record. These counts can yield very different estimates; in the case of this study, more than a 500 year difference for a single chief.

I Ō AI I'I

Aole ku like ke kiekie o na mea a pau i kapaia he Alii; a he huaolelo i kapa pinepine ia e na kanaka a pau ma ka mea o ka waha i ka olelo. Ua kapaia ka inoa Alii, mai ka mea kiekie, a ka mea haahaa. I ka manawa kahiko, ua maheleia no ke ano o na'lii, ma ke ano o ka hanau ana. Ua maopopo ka nuu i ku ai kela Alii, keia Alii, na makaainana me na kauwa.

The people called ali'i were not all equal in rank, ki'eki'e. This is just a word that people are accustomed to using – they give the name ali'i to all those from the very high to the very low rank. In olden times, the kinds of ali'i were classified according to their birth and the height at which each ali'i stood, ka nu'u i kū ai, that is, his status was clear.38

JAN 2019

preserved their sacredness in a manner unlike that of other ali'i stations:

Ua kapaia na Alii o Lihue o Wahiawa a me Halemano, he poe Lo Alii, no ka malama i ko lakou kapu alii, he poe kupuna alii kapu, he kapu ke kane, he kapu ka wahine, a huipu no laua i ko laua kapu alii, a hanau mai no ka laua mau keiki, a malama no i ko lakou kapu alii, a noho no i kuahiwi, a i nele ke aupuni i ke alii ole o ke aupuni, alaila, aia no malaila e loaa ai na'lii nui o ke aupuni, a i nele i ke alii wahine ole, aia no malaila e loaa ai na kupunawahine alii. E nana ia Kauakahiailani, ia Mailikukahi, ia Kalona, ia Piliwale, ia Kukaniloko, ia Paakakanilea, ia Kaau, ia Lale, ia Paoakalani, ia Pakapakakuaua, ia Nononui, ia Kokoloea a i ka nui loa hiki ole i ka helu ia o na'lii i kapaia na Lo Alii.

The chiefs of Līhu'e, Wahiawā, and Halemano on Oʻahu were called Lō chiefs, poʻe Lō Aliʻi ("people from whom to obtain a chief"), because they preserved their chiefly kapus. The men had kapus, and the women had kapus, and when they joined their kapus and children were born, the children preserved their kapus. They lived in the mountains; and if the kingdom was without a chief, there in the mountains could be found a high chief for the kingdom. Or if a chief was without a wife, there one could be found – one from chiefly ancestors. Kauakahiʻailani, Māʻilikūkahi, Kalona, Piliwale, Kūkaniloko, Paʻakakanilea (Paʻakanileʻa), Kaʻakaualani, Kaʻau, Lale, Paoakalani, Pakapakakuāua, Nononui, Kokoloea, and a great many others were Lō chiefs. 40

The following is one verse of a much larger name chant (see Appendix C) published in the Hawaiian language newspaper Ka Hōkū o ka Pākīpika in 1862. It begins by identifying place, calling out the names of Līhuʻe, Kuaikua, Waialua, Kūkaniloko, Wahiawā, and Halemano. ⁴¹ The mele proceeds to name a number of chiefs, many of whom Kamakau and Kepelino confirm are of the Lō Aliʻi station; ⁴² chiefs who were born of that very land and carry its mana and kapu in their blood. Some of the text below is quite obscure and may not be fully understood. But what can be understood is that there is great power that resides not only within these words but within this place, Kūkaniloko.

KAPAWA

No Lihue ka lani, no Kuaikua O Kapawa o ke lii o Wailua I hanau i Kukaniloko No Wahiawa ka kalani no Halemano No ka uka 'Aikanaka The chief is from Līhu'e, from Kuaikua Kapawa is the chief of Waialua Born at Kūkaniloko The chief is from Wahiawā, from Halemano From the uplands, 'Aikanaka

³⁸ Samuel M. Kamakau, "Ka Moolelo o Hawaii Nei," Ka Nupepa Kuokoa, August 5, 1865, Volume 4, Number 31. Translation by Pukui from Kamakau, Tales and Traditions, 39.

³⁹ Kamakau, "Ka Po'e Kahiko", 5.

⁴º Samuel M. Kamakau, "Ka Moolelo Hawaii," Ke Au Okoa, October 27, 1870, Volume 6, Number 28. Translation by Pukui from Kamakau, Ka Po'e Kahiko, 5.

⁴¹"He Inoa no Kunuiakea," Ka Hoku o ka Pakipika, January 16, 1862, Volume 1, Number 17. See Apendix C.

⁴¹ Ibid. 88

34 JAN 2019 | CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

Na paakani lea ka ke'lii From Pa'akanile'a, the chief descends

He poe hoali lau palai hilahila People who wave bashfully
Na Kalona nana o Piliwale From Kalona descends Piliwale
Na Ewa, na Kīkēnuia'ewa From 'Ewa descends Kīkēnuia'ewa

Na ka La'akapu o Laakona From La'akapu is La'akona

Na Kuihewa, nana Kakuhihewa From Kuihewa descends Kakuhihewa Na Manuia, nana Kalanimanuia From Manuia descends Kalanimanuia Na Lupe na Keahoka'akolukalani From Lupe, from Keahoka'akolukalani

Na Kualu, na Kahakoililani From Kualu, from Kahakoililani
O ku o ke kai mahunehune Extending out upon the scarce sea

Me he kai ea mai ana la ku

E ku aku au e nana ilaila

E ake no au e hea mai oe

Like the rising tides, appear

I stand and search there

Longing for your response

Alaila, hele pu aku kaua Then we shall go

Me ka milimili a ke lii o Kalani With the beloved one of the chiefs

Owau hoi – e. Here I am. 43

Kūkaniloko was established by Nanakāoko (kāne) and Kahihiokalani (wahine) for the birth of their son Kapawa. Nanakāoko descends from the 'Ulu lineage, which is favored by Maui and Hawai'i chiefs as the genealogical link to Papa and Wākea, progenitors of the Native Hawaiian people, and proof of their royal status.⁴⁴ Kahihiokalani descends from Maweke of the Nana'ulu lineage,⁴⁵ favored by Kaua'i and O'ahu chiefs as their main genealogical line.⁴⁶ The birth of Kapawa, therefore, bears significance as he represents a unifying of both the recognized and undisputed 'Ulu and Nana'ulu lines from which descend the highest ranking of ali'i.⁴⁷ Perhaps herein lies the inspiration for the creation of Kūkaniloko. (For more detailed information on Nana'ulu and 'Ulu lineages, see Appendix D)

O Kapawa ke keiki a Na[na]kaoko, ia ia ka hoomaka ana e hookaawale i wahi e hanau okoa ai na'lii, a ua kapaia kela wahi o Kukaniloko... Ia Kapawa ka malama ana mai, a me ka hoomanao ana o ka poe kahiko i kahi i hanau ai kela alii, keia alii, a penei:

O Kapawa o ke alii o Waialua

I hanau i Kukaniloko

O Wahiawa ke kahua

O Lihue ke ewe

O Kaala ka piko

......

O Kapukapuakea ka aa

O Kaiaka i Maeaea

Haule i Nukea i Wainakia

⁴³ Kamaikui, "He Inoa no Kunuiakea," Ka Hoku o ka Pakipika, January 16, 1862, Volume 1, Number 17.

⁴⁴ Uyeoka et al, Kūkaniloko, 67.

⁴⁵ Ibid, 71-74. See Appendix C.

⁴⁶ Ibid, 64.

⁴⁷ Abraham Fornander, Ancient History of the Hawaiian People to the Times of Kamehameha I (Honolulu: Mutual Publishing LLC, 1996), 28.



I Aaka i Haleu
I ka lai malino o Hauola
Ke'lii o Kapawa hoi no
Hoi no i uka ka waihona
Hoi no i ka pali kapu o na'lii
He kiai Kalakahi no Kakae
O Heleipawa ke keiki a Kapawa
He keiki alii no Waialua i Oahu.

Kapawa was the son of Nanakāoko, and with him began the setting apart of a special place for the birth of chiefs. This place was named Kūkaniloko... From Kapawa begins this memorializing by the po'e kahiko of the place where each chief was born, and so forth, thus:

Kapawa, the chief of Waialua
Was born at Kūkaniloko
Wahiawā the site
At Līhuʻe the placenta
At Kaʻala the navel cord
At Kapukapuākea (heiau) the caul
(Heiau) of Kaiaka at Māeaea
He died at Nūkea at Wainakia
Through (the surf of) 'Aʻaka at Haleʻū
Through the calm stillness of Hauola
The chief Kapawa was taken
Taken upland (in ʻĪao) for laying away
Kalāhiki is the "Watchman" of (the burial cave called Ka-pela-kapu-o-)Kākaʻe
Heleipawa was the son of Kapawa
A chiefly child of Waialua, Oʻahu. ⁴⁸

Few details are recorded regarding Kapawa's life. Kamakau does, however, shed a little light on the changing dynamic of the chiefly system throughout Hawai'i during Kapawa's lifetime and that of his son, Heleipawa.

O Kapawa oia ke alii mua i hoalii ia ma Waialua i Oahu, a ma keia alii, i kukuluia mai ke aupuni no ko Hawaii Pae Aina. I ka wa ia Heleipawa, ua kukuluia i Maui he Aupuni Alii; i ka wa a Luanuu, ua kukuluia o Kauai i Aupuni Alii. I ke au ia Heleipawa, ua malama ia ka la hanau, ka aina i hanau ai, kahi i waiho ai ke ewe a me ka aa, kahi i moku ai ka piko...kana mau hana kaulana, a me ka Hooilina e waiho ai na'Lii maikai me ke kaulana o ko lakou mau kupapau.

Kapawa was the first chief to be set up as a ruling chief. This was at Waialua, Oʻahu; and from then on, the group of Hawaiian Islands became established as chief-ruled kingdoms – Maui from the time of Heleipawa, son of Kapawa, and Kauaʻi from the time of Luanuʻu. In the time of Heleipawa, records began to be kept of the

⁴⁸ Kamakau, "Ka Moolelo Hawaii," October 21, 1869. Translation by Pukui from Kamakau, *Tales and Traditions*, 136-137.

chiefs; of the day of birth, the land where each was born, the places where the navel string and placenta were deposited, the place where the navel cord was cut, the famous deeds of each, and the burial place where each was laid. These places became famous as burial places of the bodies of chiefs who had ruled well.⁴⁹

Some researchers believe that the chief-ruled kingdoms mentioned above may be interpreted to mean that larger countries were established with a "ruling chief "over local chiefs - like the larger Oʻahu countries associated with Maweke's sons. If this was the case, then perhaps Kapawa and his family dominated one of the larger countries on Oʻahu." ⁵⁰

It is undeniable that Kapawa was an important ali'i based on his pedigree alone. As possibly one of the first chiefs to claim descent from both the 'Ulu and Nana'ulu lineages, the very first chief to be born at Kūkaniloko, as well as the first chief to be interred in the sacred burial caves of Kapelakapuokāka'e, Kapawa's mana, kūlana, and mo'okū'auhau was indeed given the utmost reverence.⁵¹ The next known ali'i to be born at Kūkaniloko was La'amaikahiki (k), descended from Heleipawa through Punaimua.



FIGURE 12: An artist's depiction of the birthing stones. 2001. http://kukaniloko.k12.hi.us/basic/cultural/cultural.html

Samuel M. Kamakau, "Ka Moolelo Hawaii," Ke Au Okoa, October 27, 1870, Volume 6, Number 28. Translation by Pukui from Kamakau, Ka Po'e Kahiko: The People of Old, (Honolulu: Bishop Museum Press, 1964), 3.

⁵⁰ Cordy et al, "Traditional Cultural Property", 129.

⁵¹ Uyeoka et al, Kūkaniloko, 73.



LA'AMAIKAHIKI

Mo'olelo regarding the birth and origins of La'a are extremely varied. One of these versions, recorded by Kamakau, is as follows:

La'a, also known as La'amaikahiki, was born to Ahukai (k) and Keakamilo (w) at Kapa'ahu in Kūkaniloko, Wahiawā, Waialua, Oʻahu. He was born in the time of Moʻikeha, a famous aliʻi who frequently traveled between Hawai'i and Kahiki, where his brother Olopana ruled as high chief. On one of these trips, Mo'ikeha took La'a with him, as he was designated to be Olopana's heir to the kingdom.⁵²

Moʻikeha would eventually return to live on Kauaʻi, and when his son Kila reached adulthood, Moʻikeha sent him to fetch La'a from Kahiki to be a chief. Not only did this voyage require a great amount of effort and resources, but it also came as a surprise to Kila's older brothers who had assumed that the seat of power would naturally transfer to them. Why, then, might it have been so important that La'a become chief? One possible explanation is that La'a's birth at Kūkaniloko established him as having a higher rank than those chiefs living within Hawai'i at the time, making him the most desirable choice as ali'i.53

The next known alii to be born at Kūkaniloko is Māilikūkahi (k), descended from Laiamaikahiki's son Lāulialaia.

MĀ'ILIKŪKAHI

O Puaa a Kahuoi ka makuakane, a o Nononui ka makuahine. Ua hanauia o Mailikukahi ma Kukaniloko, a ua kapaia he alii kapu no ka aina, no ka mea, ua hoolaa na'lii a me na kahuna, a me na makaainana, a ua hoohikiia hoi imua o ke Akua, me ka poniia hoi e na kahuna. O ke Alii e hanau i Kukaniloko, oia hoi ke Akua o ka Aina, oia no hoi ke Alii kapu.

Puaʻaakahuoi was the father and Nononui the mother of Māʻilikūkahi. He was born at Kūkaniloko and was named the ali'i kapu for the land because of his dedication by the chiefs and priests and people; he had been vowed as such before the gods and had been anointed by the kāhuna (priests). Chiefs born at Kūkaniloko were the akua of the land and were ali'i kapu as well.54

Māʻilikūkahi was the son of Puaʻaakahuoi (k) and Nononui (w).(Fornander's An Account of the Polynesian Race has conflicting information on Māʻilikūkahi's parents, which states that his parents are Kukahiaililani [k] and Kokalola [w]) At the age of 29, he was chosen by the people (chiefs, priests, and commoners) to reign as king of Oʻahu, replacing the deposed chief Haka who was infamous for his stingy ways. 55 In order to consecrate Mā'ilikūkahi to rule, elaborate ceremonies were performed that reenacted both the cutting of the piko and the circumcision - ceremonies usually reserved for the time of birth - for the purposes of cleansing the new chief.

⁵² Ibid, 78.

⁵⁴ Samuel M. Kamakau, "Ka Moolelo o Hawaii Nei," Ka Nupepa Kuokoa, August 26, 1865, Volume 4, Number 34. Translation by Pukui from Kamakau, *Tales and Traditions*, 53.

⁵⁵ Uyeoka et al, Kūkaniloko, 78.

JAN 2019

Ua laweia oia ma ka heiau o Kapukapuakea e poniia'i e na kahuna no ka noho Moi ana. A pau ka oihana kahuna, e like me ka hanau ana o na'lii, e laweia no iloko o ka heiau no ke okiia ana o ka piko. A pau ia oihana a ke kahuna, o ke okipoepoe ana aku kekahi oihana nui a ke kahuna no ke alii. O ka huikala ana ia oihana nui a ke kahuna. O ulonoku ka pule. A pau ia oihana a ke kahuna i ke alii, alaila ku ke alii i ka moku. Ua pili keia oihana Alii no na'Lii nui mai ka po mai, aole nae hoi no na alii kipi, a me na'lii koa i loaa ke Aupuni ma ka hooikaika – He mau Alii lakou no Pokani. Pela ko Mailikukahi ano o kona noho Aupuni ana, a noho Moi ana hoi maluna o ka aina.

He was taken to the heiau of Kapukapuākea at Paʻalaʻakai in Waialua and consecrated by the kāhuna to rule as mōʻī. At the end of this ceremony, he was taken inside the heiau for the ceremony of the cutting of the navel cord, just as at the birth of a chief. After that another important ceremony, that of circumcision, 'oki poepoe, was reenacted. This was to cleanse and purify him; 'Ulonokū was the prayer. When this ceremony was over, he was installed as ruler of the island, ke aliʻi o ka moku. This chiefly ritual pertained to high chiefs from remote times – mai ka pō mai. It was not performed for rebellious chiefs, however, nor for warrior chiefs who took the kingdom by force, obtaining their right to rule through force, but for "chiefs of Pōkano" (chiefs of unblemished bloodlines from remote times). That is the manner in which Māʻilikūkahi became ruler of the kingdom, and he ruled as mōʻī over the land.⁵⁶

At the start of Māʻilikūkahi's rule, the land divisions across Oʻahu were in a state of confusion. He immediately ordered the aliʻi to divide all of Oʻahu into moku, ahupuaʻa, ʻili kūpono, ʻili ʻāina, and moʻo ʻāina. Furthermore, he developed a tiered structure of aliʻi – from high chiefs to lesser chiefs to warrior chiefs – placed in charge of each land division. This geo-political system clearly defined the kuleana of individuals, families, and government officials and entities within specific sections of land, helping to maintain balance and order throughout. A ruler of incredible significance, Māʻilikūkahi's revolutionary contributions impacted the entire island chain and subsequent generations.⁵⁷

Kamakau describes the character of Mā'ilikūkahi's reign as one of peace and reverence.

Ua maluhia me ka makau ia ka Noho Aupuni ana o Mailikukahi. Ua oleloia keia Alii, he Alii haipule. Ua noho haipule na kanaka a puni o Oahu, me ka malu, ua oleloia o Mailikukahi - Aole oia i mohai i ke kanaka, i na heiau a me na Luakini. Pela ke ano o na'Lii o Kukaniloko. Aole poo kanaka o laila.

There was peace again on Oʻahu, with fear of the kingdom of Māʻilikūkahi. It is said of this chief that he was a religious chief. The people all over Oʻahu lived religiously and in peace. It is said of Māʻilikūkahi that he did not sacrifice men in the heiau and luakini. That was the way of Kūkaniloko chiefs. There were no sacrificial heiau, poʻo kanaka, there. ⁵⁸

⁵⁶ Kamakau, "Ka Moolelo o Hawaii Nei," August 26, 1865. Translation by Pukui from Kamakau, *Tales and Traditions*, 54.

⁵⁷ Uyeoka et al, Kūkaniloko, 82.

⁵⁸ Samuel M. Kamakau, "Ka Moolelo o Hawaii Nei," Ka Nupepa Kuokoa, September 2, 1865, Volume 4, Number 35. Translation by Pukui from Kamakau, *Tales and Traditions*, 56.



Māʻilikūkahi is also remembered for being an aliʻi who took the first-born male children of all families, whether of makaʻāinana or aliʻi lineage, to be raised and educated in his chiefly complex. The young boys were taught the art of spear throwing, among other skills, and comprised the army that defeated invading chiefs from Hawaiʻi and Maui who decided to bring war upon Oʻahu after hearing of the "high state of his kingdom." ⁵⁹

The next known aliit to be born at Kūkaniloko is Kalanimanuia (w), descended from Māilikūkahi through Kalonaiki.

KALANIMANUIA

Kalanimanuia was born at Kapāʻahuʻawa/Pūʻahuʻawa at Kūkaniloko, and her piko was cut at Hoʻolonopahu heiau. Her parents were Kūkaniloko (w), the first Mōʻī Wahine of Oʻahu (probably named after the place) and Luaia (k). Kalanimanuia succeeded her mother as Mōʻī Wahine of Oʻahu. With her husband Lupekapukeahomakaliʻi, she had four children; first was born Kūamanuia (k) who was raised in Waikīkī to be a haku aliʻi (overlord) there. The second born was Kaʻihikapuamanuia (k) who was raised in Honouliuli, 'Ewa to be a chief there. Third was Haʻo (k) who was raised at Waikele to be a chief there. The fourth was Kekela (w) raised by her parents at Maunakūʻaha, and whose bathing place was at Kahuawai at Kalauao. The reign of Kalanimanuia was one of peace and productivity.⁶⁰

He Alii maikai, ua noho oia ma Kalauao wale no. Ua noho na'lii me na makaainana a puni ka aina me ka oluolu. Aole auhau maluna o na kanaka a me na'lii, aole ikeia ke kaua ma kona Aupuni. Ua kauoha oia i na'lii me na makaainana e kukulu i ka heiau o ke Akua a me na mua i wahi e haipule ai na'lii me na kanaka i ke Akua. Nana no i hana ia Paaiau me Opu a me Kapaakea i mau loko ia nana; a nana no i hana i na loi-kalo nui ma Kalauao i mau loi ai nana. Ua momona ka aina a puni o Oahu i ka mahiai ia.

She was a good chiefess, and she remained in Kalauao when she became ruler of the kingdom. The chiefs and commoners lived in comfort all over the land. No taxes were laid upon the chiefs and their men, and no war was known in her kingdom. She ordered the chiefs and commoners to erect heiau to the gods, and also mua, men's 'chapels,' as places for the chiefs and their men to pray to the gods. She had Pā'aiau, Opu, and Kapa'akea fishponds made for herself; she also created the numerous taro patches at Kalauao for her own use. The island of O'ahu was made productive through cultivation. ⁶¹

Kalanimanuia passed away at her home at Kūkiʻiahu, Kalauao at the age of 91, ending her 65 year rule. 62

The last known ali'i to be born at Kūkaniloko was Kākuhihewa (k), grandson of Kalanimanuia through Ka'ihikapuamanuia.

•••••

⁵⁹ Uyeoka et al, Kūkaniloko, 82.

⁶⁰ Ibid, 84

⁶¹ Kamakau, "Ka Moolelo o Hawaii Nei," September 2, 1865. Translation by Pukui from Kamakau, *Tales and Traditions*, 57.

⁶² Uyeoka et al, Kūkaniloko, 84.

KĀKUHIHEWA

40

Ua hanau o Kakuhihewa ma Kukaniloko. O Kaihikapuamanuia ka makuakane, o Kauanuiakanehoalani ka makuahine. He mau Alii kapu na makua, a he mau Alii niaupio laua a he pio no hoi. Nolaila, he kapu ao, Kapu a mano a lehu ua kapu ia Kakuhihewa.

Kākuhihewa was born at Kūkaniloko. Kaʻihikapuamanuia was his father and Kauanuiakānehoalani his mother. The parents were aliʻi kapu, aliʻi nīʻaupiʻo and piʻo chiefs, so the kapu of Kākuhihewa was multitudinous – kapu a mano a lehu.⁶³

Kākuhihewa was said to have been born in the sleeping place consecrated by the kapu of Līloa,⁶⁴ at which time his maternal grandfather Kānehoalani carried him into Hoʻolonopahu heiau.

Na Kanehoalani i lawe iloko o Hoolonopahu. O Makokaau, o Ihukolu, o Kaaumakua, o Pakapakakuaua, he 48 poe Alii nana i oki ka piko o Kakuhihewa. Kani na pahu, elua o Opuku me Hawea, he mau pahu mawaekanaka no Kakuihewa. I ka pau ana o ka oihana a na Kahuna i ka huikala ana, kaiolena, leleuli, lelewai, pau ka hemuwa ka haumia.

Kānehoalani, his maternal grandfather, was the one who took him into Hoʻolonopahu heiau. Forty-eight chiefs, including Mākōkaau, Ihukolu, Kaʻaumakua, and Pakapakakuāua, observed the cutting of his navel cord, and the two drums 'Ōpuku and Hāwea were sounded to announce the birth of Kākuhihewa. When the kāhuna had finished the rites of purification – the huikala, kai 'ōlena, lele uli, and lele wai rites – all defilements were cleared away.⁶⁵

Kākuhihewa was 39 years old when he inherited the rule from his father upon his death. Under Kākuhihewa, Oʻahu was renowned for its productivity through extensive cultivation. Chiefs from Hawaiʻi and Maui, hearing of Oʻahu's great prosperity, would come to live with Kākuhihewa because of the great abundance of food, fish, and fresh water on his lands. He was known as an "aliʻi huhū ʻole, 'aʻole hoʻomauhala" – a chief not quick to anger, one who did not cherish revenge or bear a grudge. His time as aliʻi, spanning roughly 50 years, is often referred to as a "golden age" for Oʻahu.⁶⁶

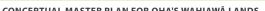
Ma loko o na mele o na'lii o Hawaii, o Maui, a me Kauai. Ua komo no Kakuihewa a me na'lii o Oahu i na mele kupuna. No kona Alii nui a me kona lokomaikai, a me kana mau oihana, nolaila ua kapa ia aku o Oahu 'ke one o Kakuihewa'... Ua hoopunahele o Kakuhihewa i na elemakule, a me na keiki a na makaainana, a me ka poe ilihune. Nolaila, ua kaulana kona inoa a hiki i ko kakou mau la e noho nei, ke kapa pinepine aku nei ka poe o keia manawa 'Oahu o Kakuhihewa.'

⁶³ Samuel M. Kamakau, "Ka Moolelo o Hawaii Nei," Ka Nupepa Kuokoa, September 23, 1865, Volume 4, Number 38. Translation by Hīka'alani (de Silva & Groves).

⁶⁴ Webb, "Kukaniloko: Birthplace of Aliis."

⁶⁵ Kamakau, "Ka Moolelo o Hawaii Nei," September 23, 1865. Translation by Pukui from Kamakau, *Tales and Traditions*, 68.

⁶⁶ Uyeoka et al, Kūkaniloko, 86.



In the mele of the chiefs of Hawai'i, Maui, and Kaua'i. [see Appendix C] Kākuhihewa and the chiefs of Oʻahu are included. Because of the benevolence of this ruler and because of his many works, O'ahu was called 'the sands of Kākuhihewa'... Kākuhihewa treated the old people, the children of the maka'āinana, and the destitute like favorites. His name has been famous down to our times, and Oʻahu is frequently referred to as 'Oʻahu-a-Kākuhihewa.' 67

PRACTICE - BIRTHING SITE, CHIEFLY CENTER, PLACE OF REFUGE, ASTRONOMICAL SIGNIFICANCE

BIRTHING RITUALS AT KŪKANILOKO

Kamakau offers the most detailed account of the birthing rituals that occurred at Kūkaniloko:

Ua hanaia o Kukaniloko e Nanakaoko me Kahihiokalani kana wahine i wahi e hanau ai ka laua keiki o Kapawa. Ua hoonohoia he lalani pohaku ma ka lima akau, a ma ka lima hema, e huli ana ke alo i ka aoao akau, a malaila e noho ai na'lii he 36, a he kuapuu ma uka mai. O Kukaniloko ka pohaku i ka hilinai. Ina e komo, a hilinai, a ka lele i na paepae, la hoouka na uha i na Liloekapu, a hanau ke keiki i ke alo. Ua kapaia kela he Alii, he akua, he ahi he wela.

I ka hemo ana o ke keiki, e lawe koke ia iloko o ka waihau o Hoolonopahu; malaila na'lii he 48, ia lakou ka hooponopono o ke keiki, a moku ka piko, aia ma ka aoao hema o Kukaniloko he segatia me hapa. Mai Kukaniloko aku ma ke komohana elua segatia, aia malaila ka pahu kapu o Hawea e kani ai. He hoailona no ke Alii. O na makaainana, aia ma ka hikina o ke kahawai o kela aoao o Kuaikua, he mano lakou; ma ka aoao ma ka hema, he ekolu segatia, malaila na kauwa. Aka, o na'lii e hanau mai i waho, a i ke kuapuu. He mau Alii no lakou, a i hanau i ke alanui, he Alii no; no waho.

Kūkaniloko was made by Nanakāoko and his wife Kahihiokalani as a place for the birth of their child Kapawa. A line of stones was set up on the right hand and another on the left hand, facing north. There sat thirty-six chiefs. There was a backrest, a kuapu'u, on the upper side, this was the rock Kūkaniloko, which was the rock to lean against. If a chiefess entered and leaned against Kūkaniloko and rested on the supports to hold up the thighs in observance of the Līloe kapu [the prescribed regulations for birthing], the child born in the presence of the chiefs was called an ali'i, an akua, a wela - a chief, a god, a blaze of heat.

When the child was born, it was immediately taken into the waihau heiau Ho'olono-pahu. There fortyeight chiefs ministered to the child and cut the navel cord. Ho'olono-pahu was a furlong and a half south of Kūkaniloko. Two furlongs to the west of Kūkaniloko was where the sacred drum Hāwea was beaten; it

⁶⁷ Kamakau, "Ka Moolelo o Hawaii Nei," September 23, 1865. Translation by Pukui from Kamakau, *Tales and Traditions*, 69–70.

indicated the birth of a chief. On the east of the stream on the side of Kuaikua were the makaʻāinana – a great many of them – and to the south, three furlongs distant, were the kauwā. However, chiefs who were born outside of Kūkaniloko or at the backrest [but not in the presence of the chiefs] were chiefs too. And if they were 'born on the highway,' they were chiefs also – 'outside' chiefs. 68

There is no further traditional written documentation regarding exactly how the stones were used during the birthing process. Below are twentieth century interpretations on the details regarding positioning of chiefesses and their retainers during childbirth.

» OSCAR COX, JOHN HOLANI HAO, DANIEL HOOKALA

On close inspection of one of the largest stones, one could make out depressions on its surface that crudely resemble a human body. Here the expectant mother would recline as the child was born, while an elaborate ceremony took place around her.⁶⁹

» TOM LENCHANKO

He identified a stone where the chiefess is said to have leaned back against and been supported on each side by the arms of attendants, whose arms rested in grooves on the rock.⁷⁰

» KALAMA MAKANEOLE AND ALICE GREENWOOD

They identified two stones, one large with an indentation "like a cradle, like a wash bay," with "another slim rock where your feet would push." This "pōhaku was big enough for two people to sit on! … Why? They said because the nurse goes from behind and pushes. Then the feet do not touch the ground."

» KATHERINE KEAOPOLOHIWA DREW

There was a flat rock near the stone Kūkaniloko where the child was immediately placed after its birth whilst the priests offered up a prayer.⁷²

If during the ceremony the babe cried, then it proved that the child was not a full chief; that within its veins was a strain of lesser blood.⁷³

» ANONYMOUS

It was noted that if the chiefess was having problems giving birth and needed to be in another position, she was moved to another stone.⁷⁴

⁶⁸ Kamakau, "Ka Moolelo o Hawaii Nei," August 5, 1865. Translation by Pukui from Kamakau, *Tales and Traditions*, 38.

⁶⁹ Cordy et al, "Traditional Cultural Property", 211.

⁷⁰ Ibid, 211.

⁷¹ Ibid, 211-212.

⁷² Ibid, 212.

⁷³ Report of Mrs. Emma Ahuena Taylor, 1925.

⁷⁴ Cordy et al, "Traditional Cultural Property", 212.



One poho was used to hold water from a nearby pond, water that was used to clean the baby and mother after birth.⁷⁵

» ANONYMOUS

Some poho may have held offerings, while others may have held the placenta, afterbirth fluids, birthing by-products, and navel cord.⁷⁶

» EMMA AHUENA TAYLOR

I noticed a cavity that had been dug out in the shape of a bowl on the side of Kūkaniloko and since the visit to this sacred spot I have learned from my mother, Mrs. Mary J. Montana [Montano] that this bowl was a receptacle for a hoʻokupu or offering.⁷⁷

In addition to the sacred birthing site including stones, heiau, and the location of the drums, there were probably "an unknown number of other features needed to perform the appropriate rituals and to support those attending to the birth." This is a point also made by Victoria Holt-Takamine, that Kūkaniloko "was not some place where you just gave birth and left. It was a whole complex where the women would stay there until they were ready to hānau, then stay there until the 'iewe was buried and piko fell off and was buried. It was a complex." ⁷⁸

CHIEFLY CENTER AT LĪHU'E

Written sources and community informants describe Kūkaniloko as situated within a larger chiefly center in the land area known today as Līhu'e. 79

Sources estimate that the chiefly center spanned a roughly circular area from Kūkaniloko around the Waialua Trail in the west, through the flats of Schofield Barracks and Wheeler, continuing through Wahiawā town. ⁸⁰ Līhu'e seems to have been a ruling center for the 'Ewa/Wai'anae/Waialua moku throughout most of the 1300s, with the senior line of Māweke living in the area by the end of that century. In the 1400s, O'ahu was unified as a single Kingdom under the Māweke line. Līhu'e remained the royal center (possibly one of several within the 'Ewa/ Wai'anae/ Waialua moku) until about AD 1600. ⁸¹

⁷⁵ Cordy et al, "Traditional Cultural Property", 212.

⁷⁶ Ibid. 236-237.

⁷⁷ Ibid, 319.

⁷⁸ Ibid, 217.

⁷⁹ Ibid, 395-397.

⁸⁰ Ibid, b.

⁸¹ Ibid. b.



This chiefly center was importantly linked to Kūkaniloko – indeed, Kūkaniloko was part of this center. The chiefs that used Kūkaniloko lived here. High ranking women before giving birth would likely have resided in these house yards until the time of birth approached, at which point they would have been moved to Kūkaniloko as community members have also noted. Further, these women would likely have remained at Kūkaniloko for a period of time after giving birth for immediate post-birth health care and possibly for several days of care and purification rituals. 82

Based on existing understandings of well-documented chiefly centers in the 1700s, Līhu'e "would have included house yards of the ruler, the high chiefs, their attendants and retinue, and of local commoners. The house yards of the high chiefs and ruler would have included small hale-sized heiau and larger mua (men's houses). The ruler's house yard would likely have been quite close to the main heiau in the chiefly center; it is assumed to be close to Kūkaniloko. This chiefly center would have included open grounds for gaming (e.g., maika grounds) and hula, and for training of warriors." 83 However, it is unlikely that such training occurred in the most sacred areas of these chiefly or royal centers (the areas of the luakini, pu'uhonua, etc.). "Rather they occurred in places within the ruler's or high chief's house yards, such as a Hale o Lono heiau (small house heiau) or in other domestic houses." 84

Although a detailed description of activities that took place specifically at the Līhu'e chiefly center has yet to be uncovered, it can be speculated as to what may have occurred there based on accounts of other chiefly centers. Here is one such account, explaining the wide array of activities at Kākuhihewa's chiefly center in Koʻolaupoko, Oʻahu:

Ma Alele i Kailua; kukulu iho la oia i hale Aupuni nona. He kanaha anana ka loa, he umikumalima anana ka laula, o Pamoa ka inoa o ua hale la. O ka hana nui maloko o keia hale, o ke kakaolelo, o [ke] kalaiaina, o ka haikupuna, o ke kuauhau, o ke kaa kaua, o ke kaa laau, o ka oo-ihe, o ke kilokilo, o ke kuhikuhi puuone, o ke Aohoku, o ke konane, o ke ao mele kupuna Alii a mele Alii, o ke kukini, o ka lelepali, o ka maika, o ka pahee, o ke kui, o ka uma, o ka honuhonu, o ka pinao, o ka mokomoko. O na hana hooikaika kino a pau, o ka mahiai, a me ka lawaia.

At 'Ālele in Kailua he built his 'government house.' It was forty fathoms long and fifteen fathoms wide; Pāmoa was its name. All these were done here: storytelling, distribution of lands, recalling traditions of the ancestors, reciting of genealogies, practicing of battle skills, wielding of war clubs, thrusting of spears, observation of omens, study of land features, study of the stars, playing konane [game of strategy], learning the mele [songs and chants] of the ancestors and chiefs, running, learning to leap from cliffs, maika [stone] rolling, dart throwing, boxing, hand wrestling, sitting wrestling, shoulder wrestling, hand-to-hand fighting, all kinds of sports that strengthened the body, cultivating, and fishing. 85

⁸² Ibid, 396.

⁸³ Ibid, 395.

⁸⁴ Ibid, 255.

⁸⁵ Kamakau, "Ka Moolelo o Hawaii Nei," September 23, 1865. Translation by Pukui from Kamakau, Tales and Traditions of the People of Old: Nā Moʻolelo a ka Poʻe Kahiko (Honolulu: Bishop Museum Press, 1991), 69.



Chiefly births at Kūkaniloko seem to have continued for only a few decades beyond 1600, until the birth of Kākuhihewa. Although it was not actively used for birthing from that point forward, Kūkaniloko remained a famed and sacred place. Kamehameha 'Ekahi even attempted to have Keōpūolani give birth at Kūkaniloko in 1797, but by that time the birthing area was described as having been in disuse. 86 Some believe that Kamehameha was not allowed to have a child born there because of the strict protocols and restrictions on the practices of human sacrifice.⁸⁷ Or perhaps it was because neither he nor Keōpūolani were of the Lō Ali'i line. Whatever the reason, Kamehameha's desire to have his child born at Kūkaniloko shows that Kūkaniloko and Līhu'e were clearly still important historical symbols and remembered in his time.

PLACE OF REFUGE

The Hale o Keawe was called Kaikialealea and was a pu'uhonua, or place of refuge. Similarly, Kaikiholu and Pakaalana on Hawaii; Kakae in Iao, Maui; Kukaniloko in Wahiawa, Oahu; and Holoholoku in Wailua, Kauai, were places to which one who had killed could run swiftly and be saved.88

While Kūkaniloko was clearly an area for birthing of the highest chiefs, 'Ī'ī also says it was one of O'ahu's pu'uhonua. He does not give an exhaustive list, and it is uncertain if Kūkaniloko was still a pu'uhonua in the 1700s, nevertheless this remains a striking statement made by someone who had lived in traditional times (serving Liholiho when both were boys). Furthermore, pu'uhonua around the time of European contact usually had an associated national heiau of great importance with the ruler's residence close by. A very important national heiau would have been expected at Kūkaniloko if it followed typical pu'uhonua patterns of chiefly centers.89

ASTRONOMICAL SIGNIFICANCE

Studies of the physical and cultural landscape of Kūkaniloko have revealed that this place held cosmogonic significance in ancient Hawaiian society. Geographically, it is positioned such that the first morning and evening rising of stars as well as all of the sunrises and sunsets of the eight sun stations (two solstices, two equinoxes, two solar zeniths, and two solar nadirs) are marked by specific points on the surrounding landscape from the viewpoint of Kūkaniloko. The names of those landscape markers may also indicate which star or sun station each is connected to, and what those stars and stations could have represented in traditional culture. These deeper connections not only illuminate deeper understanding of Kūkaniloko, but may also speak to indigenous philosophies, to concepts related to birth and death and the life between, to sociopolitical structure, and even to how land divisions were decided.90

Evidence of ancient astronomy can be found in the stones of Kūkaniloko themselves. The entire site is an oval

⁸⁶ Cordy et al, "Traditional Cultural Property", 257.

⁸⁷ Uyeoka et al, Kūkaniloko, 225.

⁸⁸ John Ti, Fragments of Hawaiian History, (Honolulu: Bishop Museum Press, 1959): 138.

⁸⁹ Cordy et al, "Traditional Cultural Property", 240.

⁹⁰ Uyeoka et al, Kūkaniloko, 55.



with its southeast end pointing to the December solstice sunrise and its northwest end pointing to the June solstice sunset. At the southeast end is the canoe-steering stone, also called the solstice-sighting stone, bearing navigational importance. The piko stone, sometimes called the compass stone, has a diamond-shaped surface with a fluted perimeter. On the surface of the stone are two sets of concentric circles each with a central hole. A line between the two holes runs exactly true north to true south. An imaginary line from the hole in the northern set of circles crosses to the birth stone and then on to Ka'ala. It is believed that this alignment is not coincidental. It intentionally connects man to the celestial bodies of the cosmogony, putting a royal child born of this land in symbolic contact with his or her lineage from the beginning of creation.91

Another important interpretation of the piko stone is that the two narrow ends of the stone represent the two solstices - June at the Tropic of Cancer and December at the Tropic of Capricorn. The widest part of the stone is the equator. The fluting along the edges of the stone's surface represents time and the journey of the sun between the solstices. The distance between any two consecutive peaks along the diamond is measured in time - 10 days, one anahulu. This interpretation shows that traditional astronomers paid close attention to the sun and to the relationship the calendar stars had with the sun, reflected in the ways the piko stone may have been used. 92

Astronomy also connects Kūkaniloko to other sites. Ulupō (inspiration from the po temple), Kane'ilio (Kane or Kane's dog, a guardian of the gate between pō and ao), Kāneana (a cave that is the womb of Papa), Kualoa (where young chiefs were raised), Mākua (progenitor and parent) Valley, and the Leina a Ka'uhane (the leaping place for souls) are among the culturally important places connected to Kūkaniloko through stars. 93



FIGURE 13: Image of the 'piko stone' showing the two concentric circle petroglyphs and a line drawn between the two center circles aligning to true north-south.

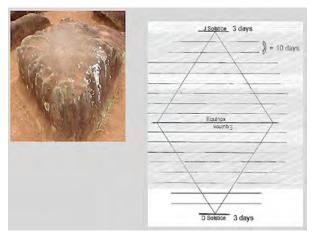


FIGURE 14: Picture of the piko stone and an image showing what the features on the stone represent.

⁹² Ibid, 59-60.

⁹³ Ibid, 55, 60.

THIS PRACE IS INTERTITIONALLY LET BLANK

KUHIKUHI PU'UONE KÜKANILOKO

TIME PERIOD	LAND STEWARD	Ħ	HIGHLIGHTS (key events, relevant Information)
Pre-1795	Ali'i of the region or island	* *	At times, an active chiefly center and birthing place for Oʻahu aliʻi through the time of Kākuhihewa Sacred site, famed throughout history
1795 - 1804	Ke'eaumoku ⁹⁴ Kahekili Ke'eaumoku	*	Maior cultivation of 'iliahi (sandalwood) on Oʻahu occurred within the Wahiawā /
000	(Ke'eaumoku Cox) 95	* *	Major cutavation of intain (sandalwood) on O and Occaried within the walliawa / Halemano area Some of the largest trees found there %
1824 – 1829	Piʻia and Laʻanui (appointed by Kaʻahumanu, Kuhina Nui) 97		
1829 – 1832	Ka'ahumanu (as Kuhina Nui) 98		
1832 – 1839	Kīna'u (as Kuhina Nui) 99		
1839 – 1848	Kamāmalu (as Kuhina Nui) 100		
1848	Government (Hawaiian Kingdom)	* *	In the 1848 Māhele, all lands from Kamananui to Kaʻena (including Kūkaniloko) were formally given to Kamāmalu She immediately transferred them back to the government as her one-third interest commutation for the moku of Waialua ¹⁰¹
1851	A. S. Cooke	*	Cooke purchases grant 606 (515 acres total, including the lands of Kūkaniloko) 102
1853	Artemas Bishop	* *	Bishop purchases grants 605 and 606, in addition to grant 604 which he purchased in 1851 (all lands in the surrounding Kūkaniloko area) 1625 acres in total ¹⁰³
1870	William Hillebrand	* *	Hillebrand purchases grants 604, 605, and 606 from Bishop ¹⁰⁴ Seems likely that lands were used for ranching ¹⁰⁵
1882	George Galbraith	* *	Galbraith purchases grants 604, 605, and 606 from Hillebrand Lands used for ranching by the elite of Hawaiian Kingdom Society until the early 1900s ¹⁰⁶
1900	J. B. Atherton and Waialua Agricultural Company (leaseholder) George Galbraith (titleholder)	* *	Galbraith leases lands around Kūkaniloko to J.B. Atherton, who assigned Kūkaniloko portion of lease to Waialua Agricultural Co. ¹⁰⁷ Galbraith fences in the Kūkaniloko parcel (current site of birthing stones), insisting on his deathbed that no one ever "touch or plow the land around it" ¹⁰⁸
1904 [TCP 317]	Hawaiian Trust Company, Ltd (trustees for the Galbraith Estate)	* * *	Upon Galbraith's death, William Goodale (plantation manager from 1898-1923) carries out Galbraith's wishes to protect the site Protected birthing stones from pineapple field land alterations Goodale contacts the Daughters of Hawai'i in 1918 and asks if they might be interested in restoring the site ¹⁰⁹
1925	Daughters of Hawai'i (leaseholder) George Galbraith Trust (titleholder)	* * * * *	The Daughters negotiate with Waialua Agricultural Company and Hawaiian Trust Company 110 Waialua Ag gives up lease of fenced 0.5 acres of land around birthing stones Hawaiian Trust deeds the area to the Daughters 111 Lahilahi Webb and Daughters of Hawai'i take two approaches to learning about Kūkaniloko: researching older records and talking with kūpuna from the area 112 After WWII, the Daughters are less active in their care and ask Waialua Hawaiian Civic Club to take over deed 113
1950	Waialua Hawaiian Civic Club (leaseholder) George Galbraith Trust (titleholder)	* *	Daughters give deed back to Hawaiian Trust Company ¹¹⁴ Waialua Hawaiian Civic Club takes over, keeps the area presentable at all times as a historic piece of Hawai'i ¹¹⁵
1960s	Hawaiian Civic Club of Wahiawā (leaseholder) George Galbraith Trust (titleholder)	* * *	This club is established to preserve and perpetuate the language, customs, traditions, foods, and sites of Hawaiian culture past and present; and to maintain and guard Kūkaniloko HCC of Wahiawā assumes duties of maintenance and preservation Push for federal protection of Kūkaniloko 116

Early 1970s	Hawaiian Civic Club of Wahiawā (leaseholder) George Galbraith Trust (titleholder)	* * *	1972: listed on the Hawai'i Register of Historic Places (*de-listed later that decade) 1973: listed on the National Register of Historic Places (*de-listed later that decade) "Friends of Kūkaniloko" is instrumental in working with the HCC of Wahiawā to ensure protection of the site under international law "8
1988	Hawaiian Civic Club of Wahiawā & Friends of Kūkaniloko (unofficial curator) Department of Land and Natural Resources (DNLR), State Parks Division (titleholder)	* *	DLNR State Parks Division acquires, by Governor's Executive Order, the 0.585 acre area containing Kūkaniloko birthstones Site area also includes an easement to the highway ¹¹⁹
1992	Hawaiian Civic Club of Wahiawā & Friends of Kūkaniloko (unofficial curator) DLNR State Parks Division (titleholder)	* *	Friendly condemnation was completed for the 4.5 acre buffer zone around the birthstones, expanding the parcel to its current size and configuration measuring approx. 5.0 acres plus the linear highway easement corridor (0.63 acres) Kūkaniloko officially becomes a state park ¹²⁰
Mid 1990s	Hawaiian Civic Club of Wahiawā & Friends of Kūkaniloko (unofficial curator) DLNR State Parks Division (titleholder)	* *	After acquiring the site, the State Parks Division begins developing interpretive and management plans for the site as a historic property Officially listed on State and National Registers of Historic Places as the "Kūkaniloko Birthstones State Monument" 121
1997 - 2008	Hawaiian Civic Club of Wahiawā (official curator) DLNR, State Parks Division (titleholder)	* *	State Parks enters into curator agreement with Hawaiian Civic Club of Wahiawā (including partner organizations Friends of Kūkaniloko and 'Ike ʿĀina) Interpretive plan completed in 1999 ¹²²
2012	Office of Hawaiian Affairs (official curator) Hawaiian Civic Club of Wahiawā (ROE-2015) DLNR, State Parks Division (titleholder)	* * * *	Noted by the OHA, the ROE (right of entry) allows the OHA to manage the site. DLNR still has jurisdiction to conduct management as well if they wish. The OHA purchases 511 acres surrounding Kūkaniloko The OHA requests transfer of land title of 5.0 acre parcel, not yet approved as of Sept. 2016 123 The OHA enters into ROE agreement with the Hawaiian Civic Club of Wahiawā in July 2015
2016	Office of Hawaiian Affairs (official curator) Hawaiian Civic Club of Wahiawā (ROE) DLNR, State Parks Division (titleholder)	*	The OHA begins Kūkaniloko Conceptual Master Planning process

THIS PRACE IS INTERTITIONALLY LET BLANK

APPROPRIATE CULTURAL PROTOCOLS

Note: As evidenced by the long line of genealogies associated with Kūkaniloko, the OHA does not intend to determine which Hawaiian protocols are appropriate as the OHA supports all beneficiaries and are aware of the diversity that exists. Rather, the following section is provided to shed light on the cultural protocols that have been openly shared with the OHA and Kuhikuhi Pu'uone Kūkaniloko (KPK). Though there may be discussions associated with this topic throughout the conceptual master planning process, it is understood by the OHA that a process to enable discussion about cultural protocols may be engaged in a separate and focused setting.

The majority of the OHA's beneficiaries interviewed in the 2011 TCP study shared that they engage in some type of cultural protocol when visiting Kūkaniloko. While the practices varied, all agreed that Kūkaniloko remains a sacred site that should be entered with reverence and respect. ¹²⁴

There were generally three types of protocols cited, in regard to entering the space: 125

- » Reciting one's mo'okū'auhau
- » Chanting an oli kāhea
- » Offering personal and quiet pule

Approaches to protocol vary greatly depending on the context of the visit as well as who is visiting. What is clearly important is that everyone who visits Kūkaniloko does so with a clear understanding of their purpose and chooses appropriate protocol based on that purpose. ¹²⁶

Because this is an extremely sacred place, not all activities are suitable in and around the Kūkaniloko birthing site. Participants in the 2011 TCP study agreed that appropriate activities should be conducted with cultural respect and sensitivity and in ways that don't negatively impact the site. ¹²⁷

About half of the informants in the TCP study felt commercial or tourist activities could be allowed at Kūkaniloko, but they also stipulated it must be carefully controlled, accommodate more appropriate cultural activities, and not have a negative impact on the area. Others felt public and commercial visitation must cease altogether, and individuals wanting to visit for culturally appropriate activities must contact proper Kūkaniloko representatives to schedule events. ¹²⁸ In regard to tourism at the site, one informant noted, "What is sacred to us becomes a spectacle to them," ¹²⁹ and that while some tourists are respectful, clearly the site needs better controls than are currently in place.

¹²⁴ Ibid, 197.

¹²⁵ Ibid, 197.

¹²⁶ Interview with Hīka'alani (Kīhei and Māpuana de Silva), December 9, 2016.

¹²⁷ Uyeoka et al, Kūkaniloko, 228.

¹²⁸ Ibid, 217.

¹²⁹ Ibid, 223.

52

While it can be challenging, limiting access is critical to the preservation of sanctity, and the protection of what is sacred is directly connected to cultural preservation. ¹³⁰ If anyone can go anywhere, how is the reverence for any sacred site held intact?

EXAMPLES OF CONTEMPORARY CULTURAL PRACTICES

Kūkaniloko remains a significant and relevant cultural site not only because of its rich and storied past, but also because of its continuous role as a sacred gathering place where Hawaiian traditional and customary practices still occur. ¹³¹ The Hawaiian Renaissance of the early 1970s saw a resurgence of pride in Hawaiian identity, language and cultural practices. One of the main expressions of this reconnection to identity was in the reclamation of sacred sites and, furthermore, exercising the ability to gather and practice on them. Kūkaniloko has become a premier site on Oʻahu for such activities.

The ceremonies that occur at Kūkaniloko today tend to be private in nature and are often conducted during "down times" when there is less tourist/visitor traffic to the site. ¹³² Below are some of the modern cultural practices that were documented to occasionally take place here.

SUMMER AND WINTER SOLSTICE AND EQUINOX

» Kūkaniloko has been used as a place to witness and honor important times of year such as the summer and winter solstices and the fall/spring equinox, as well as to observe other natural phenomenon associated with tracking the seasons. The Friends of Kūkaniloko and HCCW, for example, observe these ceremonies. ¹³³

VARIOUS OTHER CEREMONIES AND GATHERINGS

» Community members and families also gather frequently at Kūkaniloko for various ceremonies to give offerings to their kūpuna, the place and the ali'i that were born there. Many of these gatherings are personal, and the participants tend to keep the details of the ceremonies private. ¹³⁴

BURYING OF PIKO

» One informant of the 2011 TCP study cited that their family has genealogical connections to Kūkaniloko and buries their children's piko there. The informant did share that he/she was not sure if that was something practiced in the past, but he/she had made a personal decision to do so today. 135

.....

¹³⁰ Hīka'alani.

¹³¹ Uyeoka et al, Kūkaniloko, 197.

¹³² Ibid, 198.

¹³³ Ibid, 198.

¹³⁴ Ibid, 198.

¹³⁵ Ibid, 198.



weebly.com/hawaiian-civic-club-of-wahiawa.html.



FIGURE 15: Kūpuna hula noho 'ili'ili on the Makahālau. Hawaiian Civic Club of Wahiawā, http://kukaniloko. FIGURE 16: September 2000 On-site blessing of the Interpretive Signs for Kūkaniloko. Hawaiian Civic Club of Wahiawā, http://kukaniloko.weebly.com/hawaiian-civic-club-of-wahiawa.html.

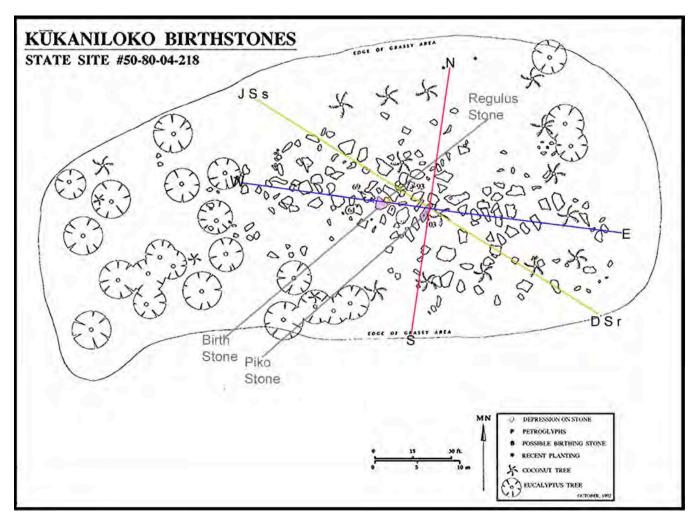


FIGURE 17: The relationships among the three stones and their association with stars. Martha H. Noyes, STARS AND STONES AT KUKANILOKO, October 2013, University of Wales Trinity Saint David, Graduate Program in Cultural Astronomy: Society for Hawaiian Archaeology Conference, p. 10.



MELE AND HULA

» In traditional and contemporary times, various mele have been composed in honor of Kūkaniloko and the ali'i born there. Hula is also another common form of tribute practiced today at Kūkaniloko. Kumu Hula interviewed shared background information on some of the hula they perform, as well as why they continue to visit the site. It is important to them to bring their hālau and learn more about Kūkaniloko as well as to offer hoʻokupu to this wahi pana. ¹³⁶

CULTURAL EDUCATION AND INTERPRETATION

- » Through their years of stewardship over Kūkaniloko, the HCCW and the Friends of Kūkaniloko have created curriculum and informational materials to educate different audiences about the site's cultural and historic value. They engage audiences of all ages and diverse groups including 'ohana, schools, hālau hula, community and civic clubs, researchers and scholars both local and international, health practitioners, and more. (For more detailed information about specific schools who engage in learning at Kūkaniloko, see Uyeoka et al, 202-205 in Appendix E) 137
- » In addition to on-site interpretation, HCCW created traveling educational displays that its members take with them to various presentations both in Hawai'i and beyond to increase awareness about this wahi pana. HCCW shares that it intends to utilize the site for teaching future generations about the history and significance of Kūkaniloko and to serve as an educational center where Hawaiians can be "taught in the traditional ways of our ancestors and certified as experts in the culture."

MĀLAMA 'ĀINA

» The Friends of Kūkaniloko organization has been actively engaged in efforts to care for and cultivate the site for over 50 years. It has engaged in the cultivation of Native and Polynesian-introduced plants, as well as regular removal of "wilted makana, ho'okupu, or fallen branches from trees; inspect(ion) for vandalism; and secur(ing) the site from both intentional and unintentional human actions that may cause physical damage." ¹³⁸

LUA PRACTICE

» Various lua groups and organizations visit Kūkaniloko at different times throughout the year to conduct various protocols, prepare for significant events, and other ceremonial purposes. Not all lua practitioners agree on whether or not this practice occurred in close proximity to Kūkaniloko in older times. 139

¹³⁶ Ibid, 199.

¹³⁷ Ibid, 201. See Appendix E

¹³⁸ Ibid, 205.

¹³⁹ Ibid, 206.



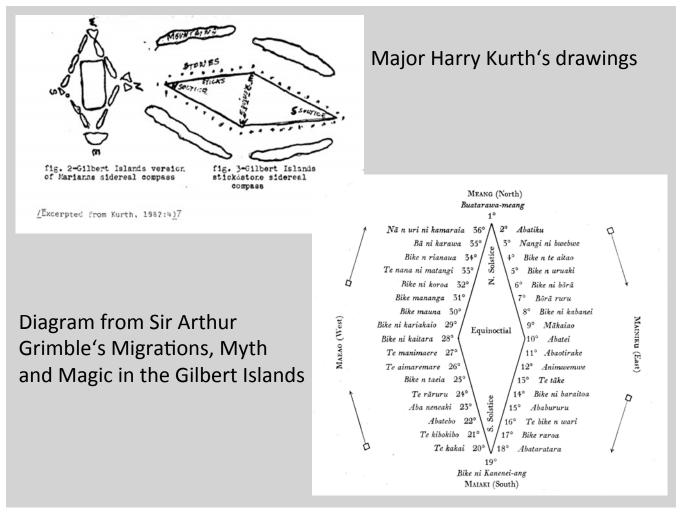


FIGURE 18: The two narrow ends of the piko stone represent the two solstices — June at the Tropic of Cancer and December at the Tropic of Capricorn. The widest part of the stone is the equator. Sir Arthur Grimble, Migrations, Myth and Magic from the Gilbert Islands, 1972, London: Routledge and Keagan Paul, p. 228.



FIGURE 19: The year 1300 AD was used to locate star positions from the point of view of Kükaniloko. Martha H. Noyes, STARS AND STONES AT KUKANILOKO, October 2013, University of Wales Trinity Saint David, Graduate Program in Cultural Astronomy: Society for Hawaiian Archaeology Conference, p. 1.



FIGURE 20: The orange line runs from the piko stone to the birth stone — due east in this picture. Martha H. Noyes, STARS AND STONES AT KUKANILOKO, October 2013, University of Wales Trinity Saint David, Graduate Program in Cultural Astronomy: Society for Hawaiian Archaeology Conference, p. 2.

56

FIGURE 21: The constellation Hinaiaeleele, roughly the same as the Western constellation Taurus, contains the star Aldebaran. William Westervelt, Hawaiian Legends of Old Honolulu, Boston: G.H. Ellis Press, 1915, p. 5.

CULTURAL ASTRONOMY

» The work of cultural astronomers including Rubellite Kawena Johnson, Doug Fernandez, Paul Coleman and Martha Noyes has identified the function and use of Kūkaniloko in observing natural phenomenon associated with tracking the seasons, as well as marking the passage of time, specifically witnessing important times of year such as the summer and winter solstices and the fall/spring equinox. Fernandez in particular notes another significant aspect of Kūkaniloko's location is that "all heiau on Oʻahu align with Kūkaniloko. This alignment is not necessarily through the sun and moon, but with the stars and constellations." ¹⁴⁰ Coleman also elaborated about the role of the piko (concentric circles) on the "Compass Stone." In Noyes' work, she explains her "complex methods and interpretation of the cultural landscape surrounding Kūkaniloko including the path of the sun, moon, stars and planets and their relationship to the landscape." ¹⁴¹

HAWAIIAN POLITICAL GATHERINGS

» The Kū i ka Pono march in 2005 was citied as a significant political gathering. Informant Vicky Holt-Takamine stated that "Kūkaniloko was chosen as the gathering place for this event because it is considered the piko of Oʻahu and it signified the rebirth of a movement and of the Hawaiian Nation." 142

¹⁴⁰ Ibid, 209

¹⁴¹ Ibid, 211.

¹⁴² Ibid, 212.

03 MO'OLELO | 'ĀINA





MO'OLELO | 'ĀINA

The following section is considered the basis for planning and contains information that was used in collaboration with historic and contemporary research/ethnography on the property's significance and use. This section includes: the conceptual direction that the OHA set forth as a primer to the conceptual master planningprocess; plans for the area set forth by the government; applicable regulatory information; and known existing conditions and site descriptions. Prior to reading this sections, it may be helpful to review the information in the Preface and Introduction section of this document.

THE OHA'S WAHIAWĀ LANDS PLANNING OVERARCHING CONCEPTS

The OHA's overarching concepts are intended to align with the purposes of the OHA's acquisition of the property and evolve to exemplify the holistic best use of the property. The intention is that the property becomes selfreliant, fiscally stable, regenerative with regard to resources (i.e. natural, cultural, educational, etc.), and enables programmatic uses that align with the OHA's vision, mission and strategic directives.

The OHA's overarching objectives are to:

- 1. Protect and preserve the sacred nature and cultural significance of Kūkaniloko located in the 5-acre parcel (the Birthing Stones) and its surrounding lands (the 511-acre parcel) based on the historic, current, and future Hawaiian perspectives.
- 2. Enable and support the ability of the the OHA's beneficiaries and the broader community to connect, interact, and symbiotically engage the site with purpose and understanding of its unique and sacred nature.
- 3. Enable appropriate and relevant educational / training opportunities; generate other resources for current and future generations to provide what they will need to lead and succeed based on what can be learned and exemplified through their integration and influence of the cultural nuances of the site.
- 4. Actively work on the ecological rehabilitation of the site and its resources; including but not limited to securing water and appropriate infrastructure, soil remediation, invasive species control, revegetation, native outplanting, etc. 143

THE OHA'S CONCEPTUAL DIRECTION - PROPOSED LAND USES FOR WAHIAWĀ LANDS

In 2015 and prior to this conceptual master planning effort, the OHA's Board of Trustees agreed that the OHA's Land

¹⁴³ State of Hawai'i: The Office of Hawaiian Affairs (OHA). Land and Property Management. "Reguest For Proposals: OHA RFP No. LPM 2016-02 for a Master Plan for Kükaniloko — Exhibit A." News release, March 11, 2016. Procurement: Solicitations & Awards. Accessed October 17, 2016. Page 1. http://190f32x2yl33s8o4xza0gf14.wpengine.netdna-cdn.com/wp-content/uploads/RFP-LPM-PP-2016-02-3.pdf. (reedited by OHA Feb 2017)

¹⁴⁴ Ibid, 2.

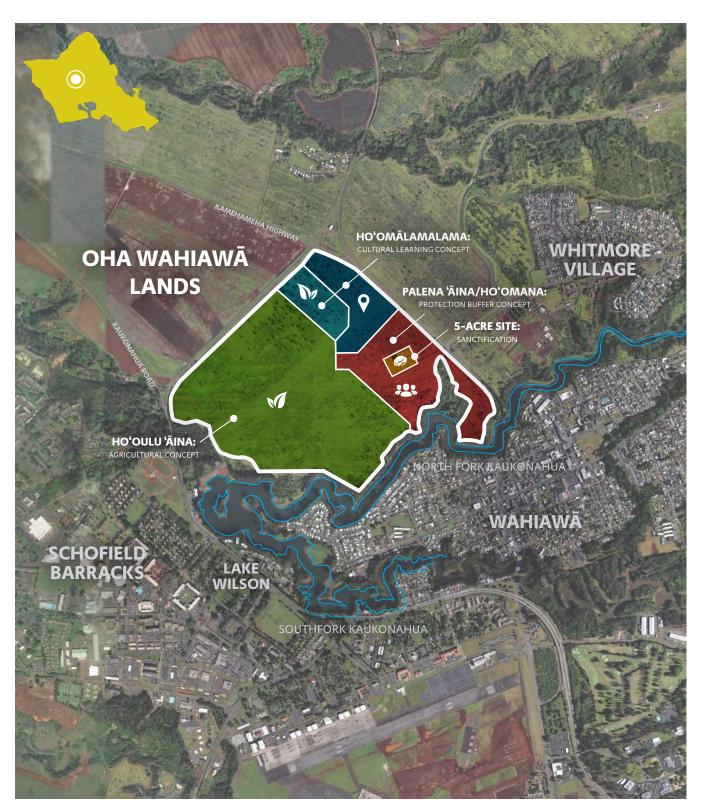


FIGURE 22: OHA's Overarching Concepts: Ho'omālamalama (Cultural Learning Concept), Palena Āina/Ho'omana (Protection Buffer Concept), Ho'oulu Āina (Agricultural Concept).



Division would move forward with the conceptual direction (summarized herein) which outlines potential land uses on the OHA's 511 acres in Wahiawā. The conceptual direction is intended to provide direction for the development of the property. The conceptual direction is based on years of research and interactions with community members who have ties to Kūkaniloko. 144

The conceptual direction communicates the OHA's intention by dividing the property into three general use categories: Hoʻomana -Protective Uses; Hoʻonaʻauao -Educational Uses; and Hoʻoulu ʻĀina - Ecological/Agricultural Uses. For simplicity, these conceptual use categories are shown on the preceding figure depicting their proposed locations within the 511- acre and 5-acre parcels. The intention behind each use category is anticipated to permeate throughout the property and will be codified within the conceptual master planning process. The overarching gist of the general uses or actions associated with the conceptual categories include:

- Access management (vehicular and pedestrian);
- Native Hawaiian traditional and cultural rights and practices;
- Educational and programmatic uses;
- Training and development;
- Securing water and developing the necessary infrastructure;
- Invasive species control; and
- Ecological and soil rehabilitation, and various forms of agriculture. 145

These conceptual categories shall be used to help develop the final recommended allowable uses for the 511-acre property and inform the physical location of the elements that can enable these uses.

The final allowable uses for the property shall be developed such that they are compatible with, incorporate and, where possible, exemplify Hawaiian cultural philosophies and practices (planning, programming, landscaping, agricultural practices, etc.), and are to be consistent and accomodating to the sacred and historical significance of the site. Additionally, the final allowable uses will need to be compliant with applicable laws and guidelines for the OHA to consider them for implementation.

Each use category is further explained in the following section. Under each category is a narrative that helps to communicate its intent as to which area the category will be applicable, whom the OHA may consider for collaboration, thoughts about how access may be governed, supported uses and finally, the ecology and agriculture portion helps to understand the vegetative stewardship philosophy for the site.



HO'OMANA - A PROTECTIVE CONCEPTUAL USE CATEGORY

AREA: This conceptual use category is intended to protect and enhance the sacred nature of the site. It is anticipated that this category will be minimally applied to the area that houses the Birthing Stones and other specified areas that warrant protection of this nature. Varying levels of management or development in these areas are anticipated to be allowed to enable the proper care and stewardship of these areas

COLLABORATION: The protective buffer zone will be one of the first categories to evolve via collaboration with lineal descendants, demonstrated caretakers, cultural practitioners, the OHA's beneficiaries, other community members, and various stakeholders. ¹⁴⁷

ACCESS: Access to the site may be limited to stewards, caregivers, those accompanied by a guide, and others who are specifically authorized. It is thought that direct access to the Birthing Stones, cultural sites and resources, buffer zones and surrounding areas may be limited/guided. Direct access to the Birthing Stones should be focused on education and programmatic purposes, enabling and supporting access for Native Hawaiian traditional and customary practices, and ensure that any visitors would be provided appropriate and consistent base information. ¹⁴⁸

CULTURAL PRACTICES, PROGRAMMATIC AND EDUCATIONAL USES: Intended uses and related activities may include: developing, maintaining and managing places for healing, connection, and reflection; providing outdoor venues for educational and programmatic uses; enabling and supporting uses such as education and training related to traditional and contemporary Hawaiian cultural schools of knowledge; Hawaiian culture-based experiences; and caring for the site in a manner that is consistent with traditional and contemporary Hawaiian philosophy, values, guiding principles and practices. ¹⁴⁹

ECOLOGY AND AGRICULTURE: Protection of nature and the environment shall include invasive species control. It will also include propagation/cultivation/outplanting of traditional plants, food plants, medicinal plants, utilitarian and other culturally significant plants, as well as select non-native species. The intent is for the planting process and outputs to be used for, or be aligned with, traditional and contemporary uses, soil remediation, ecological rehabilitation, reforestation, education, and agroforestry that exemplifies Native Hawaiian philosophy and practices. It is envisioned that the above will incorporate contemporary practices and technology where appropriate, and not compromise the aforementioned philosophy and intent of this land use category. It is imperative that the exploration of agricultural uses are aligned with and contribute to the protection of the cultural site, and that it is grounded and ever-evolving with the sacred nature and significance of the site in mind, inclusive of the Hawaiian people and the surrounding communities. It may also include the development of a stewardship center and/or other appropriate and necessary cultural and

.....

¹⁴⁶ Ibid, 2.

¹⁴⁷ Ibid, 2.

¹⁴⁸ Ibid, 3.

¹⁴⁹ Ibid, 3.



agriculturally-related infrastructure that may incorporate or blend into the remaining land uses. 150

HO'ONA'AUAO - AN EDUCATIONAL CONCEPTUAL USE CATEGORY

AREA: This category is intended to enable education in alignment with the sacred nature and the resources associated with the site. Varying levels of management or development in areas that utilize this category are anticipated to be allowed to enable the proper implementation of related activities. ¹⁵¹

The purposes of this conceptual use category are to:

- 1. Serve as an secondary protective zone;
- 2. Enable appropriate and informed/guided access to the site and/or the site's vicinity;
- 3. Provide a mechanism for culturally relevant and appropriate educational, economic, social and cultural returns/uses: and
- 4. Serve as a bridge (enable controlled and symbiotic integration) between the Protective and Ecological/Agricultural conceptual use categories. 152

ACCESS: Cultural learning and education would be the primary way to access the Kūkaniloko Birthing Stone site and other culturally significant sites on the property. This may manifest itself as an educational/ visitor center or something of this nature. Guided access could be provided to the Birthing Stones and/or specific surrounding areas for the OHA's beneficiaries, residents, and visitors who are otherwise untrained or unauthorized to access those areas on their own. This zone may serve as the primary vehicular access point for property and may also be considered as a focal point to facilitate and/or generate revenue from visitors who may participate in educational, experiential, or other activities that are consistent with Native Hawaiian cultural philosophies. 153

PROGRAMMATIC, EDUCATIONAL AND REVENUE GENERATING USES: All revenue generation associated with this project is initially intended to support and otherwise fund all planning, development, maintenance and management of the project and its social and programmatic components. As the project evolves, revenue generated from the project may be used, inpart, to help fulfill the OHA's vision and mission. Standardized information about the site can be shared with visitors, including information about site significance and appropriate behavior. Indoor and outdoor venues for cultural, educational and programmatic uses may be considered, provided that they align with the OHA's mission and strategic priorities. 154

ECOLOGY AND AGRICULTURE: The intention is to highlight the symbiotic and integrated relationship people have with the 'āina and the natural world around us. The initial thought is that this category will focus on cultural uses that are agricultural, programmatic and/or educational in nature. Uses associated with this

151 Ibid, 3-4.

¹⁵⁰ Ibid, 3-4.

¹⁵² Ibid, 3-4.

¹⁵³ Ibid, 4.

¹⁵⁴ Ibid, 4-5.



category may include: A botanical garden; the propagation/cultivation/outplanting of Hawaiian traditional and contemporary food, medicine, utilitarian, and other culturally significant plants for traditional and contemporary uses; ecological rehabilitation; reforestation; agroforestry that incorporates contemporary practices and technology without compromising Native Hawaiian philosophy and practice; landscaping; and cultural demonstration/implementation areas. ¹⁵⁵

Additionally, a specified portion of land may be used to develop and implement agricultural-educational models or pilot/test projects for both small and large-scale farming models and cottage industry scale applications. This may include some aforementioned uses, but should also include the exploration of agricultural uses that are aligned with, and ancillary to, the protection of the cultural site and its grounded and ever evolving sacred nature and significance to Native Hawaiians and the surrounding communities. Options may also include organic and/or culturally informed farming practices or trials. ¹⁵⁶

Other supporting uses to be conducted throughout [this] zone include invasive species control and soil remediation, focusing on the philosophy that the soil is an endowment. ¹⁵⁷

HO'OULU 'ĀINA - AN ECOLOGICAL/AGRICULTURAL CONCEPTUAL USE CATEGORY

AREA: This category is intended to draw from the traditional and contemporary Native Hawaiian philosophies, values, guiding principles, practices and symbiotic relationships ingrained in the agrarian aspects of the Native Hawaiian culture. The intent behind this category is to serve as an additional protective zone, to enable agriculture that is culturally sensitive considering its proximity to the Kūkaniloko Birthing Stones and aligned with the OHA's mission and overall direction, to provide a mechanism for culturally relevant and appropriate economic, social, and cultural returns/uses, and to serve as a bridge between the project and the greater agricultural movement that is currently being developed and implemented in the pae 'āina, and the greater Wahiawā area. These lands would exhibit exemplary Native Hawaiian relationships with the 'āina and serve as a model of what medium/large-scale Hawaiian farming can look like in close proximity to a significant cultural site. The vegetation and crops grown, or animals raised on these lands, are envisioned to provide both traditional and contemporary food, medicinal, and utilitarian crops that improve the health and livelihood of current and future generations of the OHA's beneficiaries and Hawai'i's communities. It is envisioned that the agricultural direction may include solution sets that consider value added products, specialty crops, large-scale models, and advanced and innovative methods of farming in alignment with the rest of this section. Varying levels of management or development in areas that utilize this category are anticipated to be allowed to enable the proper implementation of related activities. 158

ACCESS: This category is anticipated to enable agricultural use and management models that are consistent with the OHA's conceptual direction. The intents and purposes of the property and this category may

¹⁵⁵ Ibid, 4-6.

¹⁵⁶ Ibid, 5.

¹⁵⁷ Ibid, 5-6.

include, but are not limited to, agricultural management and uses, agricultural education and training, and the like. Should any cultural site be located within the boundaries of this land use category, the OHA may require access to be granted to care for the site and enable traditional and cultural practices as needed in alignment with the protective conceptual use category. ¹⁵⁹

PROGRAMMATIC, EDUCATIONAL AND REVENUE GENERATING USES: Agriculture that may occur on this site should be self-sufficient to the extent allowable, and should not be limited by the amount of infrastructure it would take to perform as an independent business or operation. Use of these areas should consider how the products would add value to agriculture across the pae 'āina in general and support any related ventures in the immediate vicinity. The use of this area may encompass, but is not limited to: the construction, maintenance and management of processing, storage, distribution, repair and other facilities and infrastructure necessary for agriculture; tool and machinery storage and repair facilities; pesticide and fertilizer storage and mixing facilities; fuel and hazardous material storage facilities; green waste management facilities; and agricultural and training facilities to enable partnerships with various educational organizations, other farms and farming businesses, and the community. ¹⁶⁰

ECOLOGY AND AGRICULTURE: Any agricultural model adopted should align with the agrarian aspects of the Hawaiian culture to remain innovative in nature and in consideration of its proximity to a significant cultural site. Should agricultural uses occur, they will be subject to protective agricultural covenants and restrictions, and considerations such as protective measures to ensure the sacred nature of the stones, and consideration of areas that are incorporating both the Protective and Educational categories. Consideration will be given to organic eco-farming, sustainable green farming, incorporating permaculture practices, maintaining genetic diversity, modern farming practices, proactive soil management, farming the landscape and wind breaks, animal husbandry, and nursery type. ¹⁶¹

RELATED INITIATIVES OR PERTINENT INFORMATION REVIEW

The following sections are excerpts from existing plans. New and/or updated plans are currently in the works and should be considered to inform the planning process, and reviewed in the process as updates become available. This Conceptual Master Plan for Kūkaniloko will be developed independently, however consideration will be given to how the Plan will fit into the fabric of the area as it relates to other current and future projects in the area.

CENTRAL O'AHU SUSTAINABLE COMMUNITIES PLAN - 2003

VISION FOR CENTRAL O'AHU'S FUTURE

VISION: The Central Oʻahu Sustainable Communities Plan is one of eight community-oriented plans intended to help guide public policy, investment and decision-making over the next 25 years. Each plan addresses one of eight planning regions of Oʻahu, responding to specific conditions and community

¹⁶⁰ Ibid. 7

¹⁶¹ Ibid. 7.

values of each region. Central Oʻahu is a Sustainable Communities Plan area. The Plan's vision statement and implementing policies support sustaining Central Oʻahu's unique character, lifestyle, and economic opportunities by focusing future residential development on master-planned suburban communities within an Urban Community Boundary, and on redevelopment around two transit centers in Waipahu. ¹⁶² By 2025, the Central Oʻahu Sustainable Communities Plan area is expected to experience moderate growth as existing areas zoned for residential development are built. Population is projected to grow from almost 149,000 people in 2000 to over 173,000 in 2025. Over 11,000 new housing units will be built since 2000 in master-planned communities. Significant job growth is also expected, rising from almost 39,000 jobs in 2000 to over 65,000 in 2025 (almost 10% of the total projected for Oʻahu). The bulk of the private non-construction job growth is projected to be in services, retail or transportation / communications / utilities (70%) with another 20% in industrial occupations. ¹⁶³

GROWTH AND PRESERVATION: Urban growth will be contained within a boundary which will protect prime agricultural lands for diversified agriculture and pineapple in the following areas: along Kunia Road, north of Wahiawā, surrounding Mililani, and on the Waipi'o Peninsula. In the following areas: Preservation of these prime and unique agricultural lands for use in diversified agriculture and pineapple will help retain open space and views, in addition to supporting economic diversification. Within the Urban Community Boundary, a regional system of open space and greenways will give Central Oʻahu the feel of a network of communities "within a garden," as opposed to an unbroken suburban sprawl from Wahiawā to Waipahu. Open space will be preserved in parks, golf courses, agricultural areas, deep ravines and wildlife habitats, which will also help to protect significant views. ¹⁶⁴ The Central Oʻahu Sustainable Communities Plan provides a vision for preservation, conservation, and enhancement of community resources. Natural resources will be conserved through retention of natural drainage ways, protecting valuable plant and wildlife habitats, and supporting efforts to minimize degradation of protections provided to the environment by the Conservation District. Cultural and historical resources will be preserved and enhanced by protecting panoramic views, retaining visual landmarks and significant vistas, and preserving significant historic and prehistoric features from Central Oʻahu's past. ¹⁶⁵

AGRICULTURAL LANDS: The closure of the Oʻahu Sugar Company in 1995 raised serious questions about how thousands of acres of former sugar lands in Central Oʻahu should be used in the future. The Central Oʻahu Sustainable Communities Plan protects the highest value prime and unique agricultural lands in Central Oʻahu from urban development. State agencies indicated that these prime and unique agricultural lands in Central Oʻahu should be retained in agriculture because they are among the best in the State, are supported by an extensive, well-developed agricultural infrastructure, and are near the major transportation hub for export markets. The State Department of Agriculture's November 1977 study, Agricultural Lands of Importance to the State of Hawaiʻi (Revised), indicates that the lands along Kunia Road, north of Wahiawā,

Department of Planning and Permitting (DPP), comp. "Development Plans: Revised Ordinances of Honolulu." Central O'ahu Sustainable Communities Plan, 03rd ser., 2 (February 18, 2003): 24–48.11. doi:https://www.honolulu.gov/rep/site/ocs/roh/SCP_Central_Oahu.pdf.

¹⁶³ Ibid, 24-48.17.

¹⁶⁴ Ibid, 24-48.17.

KUHIKUHI PU'UONE



LAND USE POLICIES, PRINCIPLES AND GUIDELINES

OPEN SPACE

- » To provide long-range protection for diversified agriculture and pineapple on lands outside the Urban Community Boundary, and for two agricultural areas located inside the Urban Community Boundary (Pine Spur and Honbushin).
- » To protect scenic views and provide recreation; define the boundaries of communities.
- » To provide a fire safety buffer where developed areas border "wild lands" either in preservation or agricultural areas and preserve natural gulches and ravines as drainage ways or storm water retention areas.
- » To connect communities through a network of greenways along transportation and utility corridors and drainage ways. ¹⁶⁷

AGRICULTURAL AREAS

- » Permit facilities necessary to support intensive cultivation of arable agricultural lands.
- » Permit facilities to support limited outdoor recreation use, such as camping, horseback riding and hiking in areas where agricultural use is not feasible.
- » Permit residential use only to the extent that is accessory to the agricultural use.
- » Site and cluster dwellings planned as part of an agricultural use to minimize use of productive agricultural land and to reduce infrastructure costs.
- » Design and locate buildings and other facilities accessory to an agricultural operation to minimize impact on nearby urban areas and roadways. ¹⁶⁸

HISTORIC AND CULTURAL RESOURCES

» Emphasize protection of key landmarks to help define Central O'ahu's unique sense of place. Existing visual landmarks should be protected, and creation of new culturally appropriate landmarks should be supported.

¹⁶⁵ Ibid, 24-48.19.

¹⁶⁶ Ibid, 24-48.24.

¹⁶⁷ Ihid 24-48 35



- » Preserve significant historic features from the plantation era and earlier periods.
- Ensure appropriate protection of Kūkaniloko as **determined through consultation with the Hawaiian Council of Elders** [document does not expand on who, exactly, this group is made up of nor any other information about their formation], the State Historical Preservation Office and others.
- » Where known archaeological and cultural sites have been identified, and impact mitigations approved as part of prior development approvals, these mitigations should be assumed to carry out the Plan vision and policies for preservation, and development of historic and cultural resources in Central Oʻahu. 169

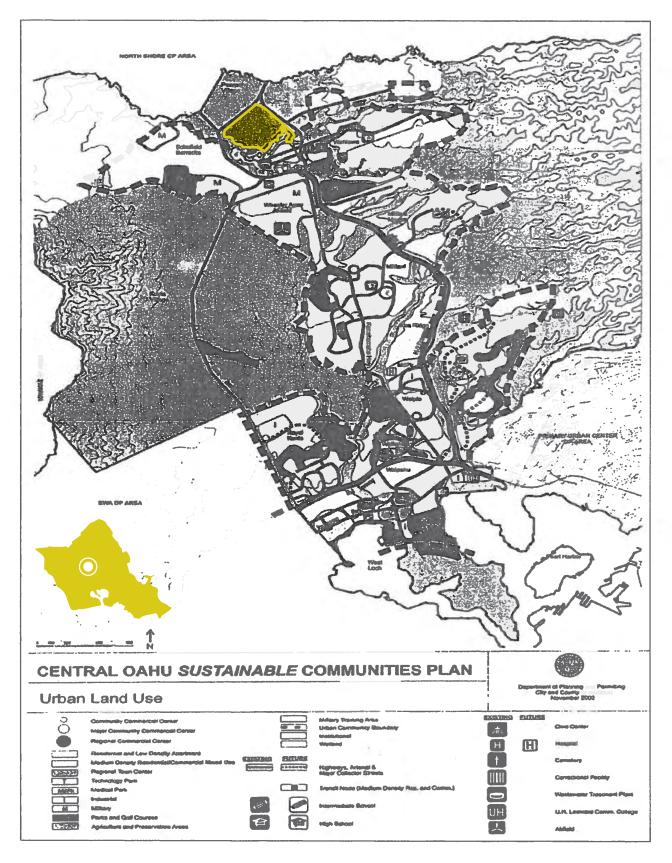
PLANNED COMMERCIAL RETAIL CENTERS

- » Dedicate planned commercial centers primarily to retail uses and to accessory office uses that provide services to the surrounding community. Residential and other uses which meet the social, cultural, recreational and civic needs of the surrounding community may be incorporated in such commercial centers.
- » Align the building mass of commercial centers in keeping with the urban and natural setting. In the case of major community commercial centers, minimize the visibility of large building volumes and expansive parking areas through site planning, architectural treatment of elevations and landscaping.
- » Design the architectural character of commercial centers to respect the surrounding urban and natural features, particularly when located adjacent to a residential area or significant natural or historic site.
- » Incorporate site design and facilities in commercial centers that promote pedestrian, bicycle and transit access. Pedestrian and bicycle access is more important for smaller, neighborhood centers, while transit access is more significant for community centers.
- » Design Community Commercial Centers to help create communities out of residential developments by serving as meeting places, and as recreational, social, cultural, and civic centers; the role town squares and main streets play in traditional towns.
- » Encourage gable and hip-roofs, using breaks in the roof line to reduce the apparent scale of large roof plates.
- » Orient buildings to pedestrians. Storefronts should face the street, and to the extent possible, be close to the sidewalk. Place parking and service areas behind the buildings or otherwise visually screened from streets and residential areas.
- » Design buildings to maintain a residential scale with height limits that allow for gable and hip-form roof elements. Limit total area for a lot or contiguous lots with common parking to 100,000 squarefeet.

......

¹⁶⁸ Ibid, 24-48.35.

¹⁶⁹ Ibid, 24-48.43.





- » Access parking and loading areas from a collector street.
- » Create at least one pedestrian access from the public sidewalk or other off-site pedestrian pathway to the entrances of establishments in the commercial center that does not require crossing a traffic lane, or parking lot aisle or driveway. Bicycle racks should be designed to provide security and be visible from the street entry.
- » Screen parking and service areas from the street and adjacent residential lots by planting trees and hedges along street frontages and property lines, and planting shade trees throughout the parking lot. Only low-level lighting or indirect lighting, if any, should be used in parking lots. All signage should be non-illuminated or indirectly illuminated. 170

PUBLIC FACILITIES AND INFRASTRUCTURE POLICIES AND PRINCIPLES

WATER ALLOCATION AND SYSTEMS DEVELOPMENT

- » The Board of Water Supply must indicate that adequate potable and non-potable water is available, or recommend conditions that should be included as part of the zone change approval in order to assure adequacy, before zoning approval is given for new residential or commercial developments in Central Oʻahu.
- » The watershed must be protected to maintain an adequate supply of good quality water and to retain sufficient acreage to ensure infiltration into groundwater aquifers.
- » The Board of Water Supply should coordinate development of potable water sources and allocation of all potable water intended for urban use on Oʻahu. State and private well development projects could then be integrated into, and made consistent with, City water source development plans.
- » Develop an adequate supply of non-potable water for irrigation and other suitable uses in Central O'ahu to conserve the supply of potable water. Activities on the surface of the land can have a detrimental effect on the quality of drinking water. Non-potable water used above the Pearl Harbor aquifer should be low in total dissolved solids to protect the quality of drinking water withdrawn from wells located down-gradient of Central O'ahu.
- » Sufficient water is needed to meet the diversified agricultural needs for 'Ewa and Central O'ahu, along with high quality recharge of the Pearl Harbor aquifer. The State Commission on Water Resource Management must consider all sources of water in making allocations.
- » The city will reclaim wastewater effluent and dispute non-potable water, provided that customers can be found for this source of non-potable water, and that no threat is posed to the quality of the potable water aquifer. ¹⁷¹

¹⁷⁰ Ibid, 24-48.69 - 70



The Department of Design and Construction estimates treatment/disposal capacity at the Honouliuli Wastewater Treatment Plant (WTP) will need to be increased from primary treatment of 38 million gallons per day (mgd) to 51 mgd by 2025 to meet projected population and economic growth in 'Ewa and Central O'ahu resulting from implementation of the revised Plans. In addition, the capacity of specific sewer lines and pump stations will need to be increased. ¹⁷²

The City's Wahiawā WTP is operating under a Consent Decree from the State Department of Health. Under the Consent Decree, the City has agreed to upgrade the WTP to tertiary treatment and deepen the outfall in order to continue discharging to Wahiawā Reservoir (Lake Wilson). The plant now treats approximately 2.0 mgd domestic wastewater collected from Wahiawā Town, Whitmore Village, and the Navy Naval Computer and Telecommunications Area Master Station communities. The City has upgraded the Wahiawā WTP to produce tertiary treated effluent. This highly treated water is charged into Wahiawā Reservoir through a new 24-inch outfall at a depth of approximately 40 feet below the water level. All wastewater produced by new developments in Central Oʻahu should be connected to a regional or municipal sewer service system. Where feasible, effluent should be treated and used as a source of non-potable water for irrigation and other uses below the Underground Injection Control (UIC) line of the State Department of Health and the "No Pass" Line of the Board of Water Supply. ¹⁷³

ELECTRICAL POWER DEVELOPMENT

The Hawaiian Electric Company (HECO) expects that increased electrical demand may create a need for additional power generation capacity before 2025. Overall economic development, the associated increase in electrical demand, the effectiveness of energy conservation and efficiency programs, and the development of new energy-related technologies will all play a role in determining how soon additional generation capacity will be required. ¹⁷⁴

SOLID WASTE HANDLING AND DISPOSAL

There are no landfills in Central Oʻahu because of concerns about the potential impacts on Oʻahu's water supply. The entire Sustainable Communities Plan area, with the exception of a small area bordering Pearl Harbor, is considered one of Oʻahu's most important groundwater recharge areas. While the City is augmenting the number and scope of its waste diversion programs, most of Central Oʻahu's solid waste will continue to receive final treatment and disposal either through incineration at the H-POWER plant or disposal at landfills in other areas. ¹⁷⁵

.....

¹⁷¹ Ibid, 24-48.88.

¹⁷² Ibid, 24-48.88-89.



WAHIAWĀ TOWN MASTER PLAN - 1994

WAHIAWĀ MASTER PLAN TASK FORCE

The purpose of the Wahiawā Master Plan Task Force (WMPTF) was to master plan Wahiawā Town and to raise issues regarding the Wahiawā District that might impact Wahiawā Town. The plan was to cover 20 to 50 years.

CIVIC CENTER

Wahiawā's civic center is located in a parcel of approximately 160,000 square feet of state-owned land. The civic center currently houses the Department of Human Services (DHS) and Department of Health (DOH). There is insufficient office space for government agencies and private community organizations offering services to Wahiawā Town. When a state or city program must rent office space, the money comes out of their budget, resulting in less money for program funds. "Our concern is that these programs may be moved to another town where space is more readily available." These programs and services are necessary for the well-being of Wahiawā Town. ¹⁷⁷

COMMUNITY SERVICE - EXPANSION AND STRATEGY

Community services are greatly appreciated by the community. Not only should these services be maintained and protected, everything possible should be done to ensure that they prosper and expand to meet the growing and diverse needs of Wahiawā. Wahiawā needs to address the growing problem of at-risk-youth in the area and their families. One action plan is to assess the services currently being provided, expand the services for at-risk youth by establishing a youth center in Wahiawā (modeled after the Boys and Girls Clubs) and staff this center with troubled youth and their families, working with local schools and police who can identify these individuals. ¹⁷⁸

ENVIRONMENT COMMITTEE - NATURAL ENVIRONMENT AND HISTORIC SITES

Wahiawā is an older rural town that has a rich history as well as unique historic sites. The open space surrounding Wahiawā Town support quality of life for its residents and creates beauty for us all. Wahiawā needs to preserve its open space to restore endangered native flora and fauna. ¹⁷⁹

Historic sites need to be identified and protected. A strong regional plan needs to be developed based on preservation of open space and historic sites by requesting the assistance of our elected officials. It is vital to keep an inventory of the historic sites in and around the Wahiawā District. Some identified sites:

¹⁷³ Ibid, 24-48.89.

¹⁷⁴ Ibid, 24-48.89.

¹⁷⁵ Ibid, 24-48.89

¹⁷⁶ Wahiawā Town Task Force. Task Force Report, Page 1.



WAHIAWA DISTRICT WAIALUA DISTRICT EAST RANGE WAHIAW EWA DISTRICT SCHOFIELD WHEELER 1 POAMOHO VILLAGE 2 NCTAMS-EASTPAC WHITMORE VILLAGE KUKANILOKO CITY & COUNTY TRANSFER STATION LAKE WILSON 7 TOWN CENTER 8 BOTANICAL GARDENS A WILIKINA DRIVE B KUNIA ROAD CITY & COUNTY COMMUNITY GARDENS KAMEHAMEHA HIGHWAY 10 NATIONAL GUARD ARMORY 11 LEILEHUA GOLF COURSE D H-2 E KAMANANUI ROAD KAUKONAHUA ROAD

FIGURE 24: Central Oʻahu District Map and Major Roadways. Wahiawā Town Master Plan, 1994.

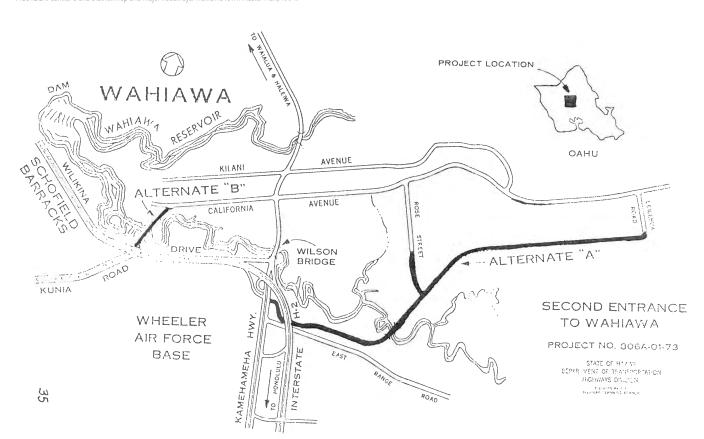


FIGURE 25: Vehicular Circulation and area Roadways. Wahiawā Town Master Plan, 1994.



Kūkaniloko, a site located north of Wahiawā which, in ancient times, was the birth site of high-ranking children; Hupeloa, a stone located at Kolekole Pass on Schofield Barracks; Pōhaku Hoʻola Kino, or "rock that gives health on the body," healing stones located at 108 California Avenue. With the phase-out of sugar and increasing urban development pressures, a unified effort to preserve the country is crucial. **The need to retain the rural character of Wahiawā lands is vital as a heritage resource that has scenic and open space importance for the State of Hawaiʻi and for future generations.** Meaningful job opportunities must be created without the loss of prime agricultural lands. Agricultural diversification is an alternative. ¹⁸⁰

LAND EXCHANGE

Wahiawā District needs to preserve its open space and protect and preserve Kūkaniloko. Land Exchange between the state lands in 'Ewa and the Galbraith lands north of Wahiawā will help maintain an open space between the Koʻolau and the Waiʻanae mountain ranges, and help to protect and preserve Kūkaniloko. Further action includes: requesting that the State of Hawaiʻi pursue a land swap of Galbraith land for state acreage in 'Ewa, between Hawaiian Trust Company and the State; requesting that the Federal Government designate Kūkaniloko as a National Historical Landmark Park; and requesting that the State to designate the Galbraith lands as conservation rather than agricultural. ¹⁸¹

In October 1993, a resolution urging the Department of Interior of the United States to create a National Park of Kūkaniloko and its surrounding area in Wahiawā, was adopted at the Association of Hawaiian Civic Clubs convention in Las Vegas, Nevada. ¹⁸²

The Historic Places Review Board, administered by the State Historic Preservation Division of the Department of Land and Natural Resources, reinstated the Kūkaniloko birthstones to the Hawai'i Register of Historic Places in April 1995. The community urged the state lands north of Wahiawā be designated conservation rather than agricultural, so in future years, if crop growing in that area is no longer feasible, then it could be turned into a wilderness park where native habitats can be retained, the watershed would be protected, and the lands maintained at a negligible cost to the environment. About 90% of Hawai'i's native flora and fauna is located nowhere else in the world. Additionally, more than 40% of the nation's endangered bird and plant species are endemic to Hawai'i. 183

LANDSCAPING AND TREES

Early records show that sandalwood was shipped to China in huge quantities and much of it was cut at Wahiawā. The largest trees were in Wahiawā and some were used as timbers to build the first Kawaiaha'o Church in Honolulu. Very few of these trees exist today. Educate the public and residents about the value of the trees and their meaningful connection to Wahiawā's past. ¹⁸⁴

......

¹⁷⁷ Ibid, 6-7

¹⁷⁸ Ibid, 7-9.

¹⁷⁹ Ibid, 14-15.

¹⁸⁰ Ibid, 15-16.

KUHIKUHI PU'UONE



INFRASTRUCTURE COMMITTEE

WATER & WASTEWATER

Effluents from the WWTP, Whitmore Village, and five treatment facilities at the Naval Communication Station are discharged into Lake Wilson. The Schofield WWTP effluents is discharged into the irrigation ditch of the Waialua Sugar Company. The City is in the process of looking at alternatives to divert effluent away from Lake Wilson. The military is participating in this study. There is a need to ensure that the water quality of Lake Wilson is protected from future sources of contamination. As of 1994, Wahiawā WWTP's daily flow of treated effluent was 1.7 mgd. During heavy rains, ground water seepage into older, leaking sewage pipes, and illegal runoff into broken or open clean out lines on private properties, increase peak flow at the Wahiawā WWTP to 9 mgd. Fresh water levels in underground aquifer systems are often at dangerously low levels. 185

RECREATION COMMITTEE

WAHIAWĀ RESERVOIR

Wahiawā Reservoir, comprised of 360 acres, surrounds much of the town of Wahiawā and is, perhaps, foremost of all the Island reservoirs both in size and fishing opportunity. Lake Wilson is the State's largest freshwater public fishing area. The growing human population is affecting the aquatic areas through increased use and introduction of various pollutants. 186

WAHIAWĀ TOWN URBAN DESIGN PLAN - 1998

HISTORICAL BACKGROUND

Wahiawā was founded in 1898 by farming families from California and quickly became the center of a thriving agricultural industry. The area's mild climate proved ideal for fruit production. In 1901, James D. Dole incorporated the Hawaiian Pineapple Company and began pineapple cultivation. Others followed suit. By 1903, Dole had built the first pineapple cannery in Wahiawā, which led to the area being dubbed the "Land of a Million Pines." The need for a permanent water supply for sugar production in the Waialua District led to the construction for an earthen dam downstream from the confluence of the south and north forks of Kaukonahua Stream. Built by Waialua Sugar Company in 1905 - 1906, the dam created Lake Wilson, the present day Wahiawā Reservoir.

¹⁸¹ Ibid, 14-15.

¹⁸² Ibid, 20.

¹⁸³ Ibid, 21.

¹⁸⁴ Ibid, 21-22.

¹⁸⁴ Ibid, 21-22.

76

By 1906, pineapple production has outstripped the capacity of the Wahiawā cannery. Consequently, Dole persuaded Walter Dillingham to extend the O'ahu Railway to Wahiawa. Both the railroad line and the construction of Dole's larger Iwilei cannery were completed in 1907. As more tracts of land were brought into production, Wahiawa's population and economy grew rapidly. Much of the population increase was absorbed by worker's camps scattered throughout the area.

In 1909, troops of the Fifth Calvary were the first to use Schofield Barracks. The military trade added to Wahiawa's pineapple prosperity. More military growth occurred after World War I, when infantry, artillery, and air service units were consolidated with garrisoned units to form a single command. By 1939, Schofield had become the largest Army base in the United States. 187

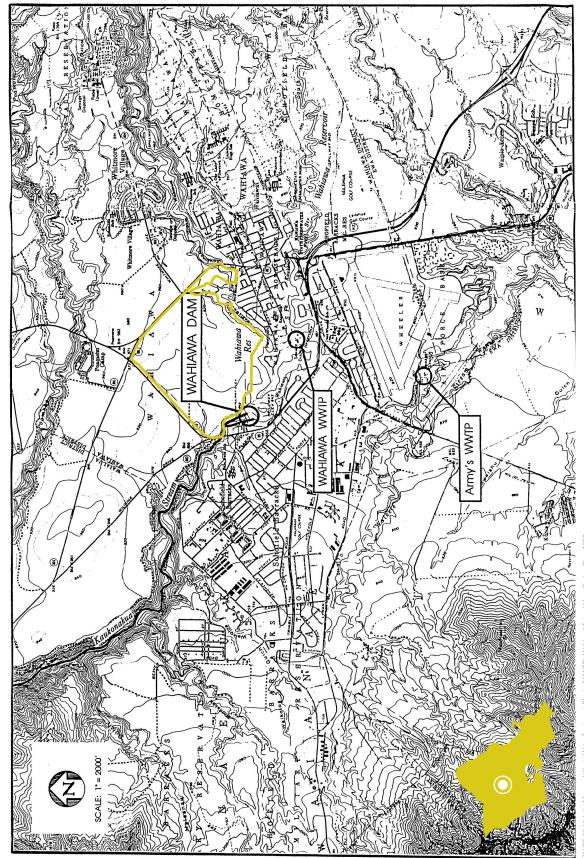
PLANNING APPROACH

The Central Oʻahu Development Plan (DP) area includes communities from Wahiawā to Waipahu. Central O'ahu's role in O'ahu's future development is to provide lands for diversified agriculture and residential development, new employment in existing commercial industrial areas, and to help alleviate urban development pressures on other rural and urban fringe communities. 188

- Special Area Plans: Wahiawā was identified through the Central O'ahu Development Plan revision process as an area that merited more detailed planning. This is being accomplished through preparation of a Special Area Plan which, for Wahiawā, has taken the form of this urban design planning process.
- Wahiawā Town Master Plan: the Wahiawā Urban Design Plan builds upon the foundation established by the Wahiawā Town Master Plan, but with a narrower focus on urban design. To the extent possible, it incorporates issues and concerns of the Town Master Plan that can be addressed through urban design.
- Community-Based Planning: the Wahiawā Urban Design Plan was formulated through a communitybased approach coordinated and supported by the City's Planning Department and its consultants. As a community-based effort, much of the impetus for the direction of the plan and its scope came from the Wahiawā Urban Design Plan Task Force.
- Goals, Objectives and Policies: maintain and enhance Wahiawa's plantation heritage and rural, smalltown atmosphere; enhance Wahiawa's role as a gateway between town and country; nurture pride among residents of Wahiawā for their town; enhance the town core as a setting for social, civic, and commercial interactions; encourage O'ahu residents to rediscover what Wahiawā has to offer; encourage more visitors to stop and examine what Wahiawā has to offer; and continue to serve the needs of military personnel. 189

¹⁸⁷ City and County of Honolulu Planning Department, and Wahiawā Urban Design Task Force. "Wahiawā Urban Design Plan." January 1998. Page 1. doi:http://wahiawacbdo.org/WahiawaUrbanDesignPlan.pdf.





GURE 26: Vicinity Map and Waste Water Treatment Plants (WWVTP). Wahiawā Town Urban Design Plan, 199



PLANNING OBJECTIVES AND ASSOCIATED POLICIES

KUHIKUHI PU'UONE

- Enhance Wahiawā's Points of Entry Along Kamehameha Highway to Reinforce a "Sense of Arrival" Along These Approaches: establish a scenic lookout with parking on the north approach to Karsten Thot Bridge overlooking Lake Wilson; relocate or construct new entry signage on the north approach to Karsten Thot Bridge and along the H-2 Freeway off-ramp approach to Wahiawā Bridge.
- Communicate Attractions That Wahiawā Offers to Visitors, The Military and Other Oʻahu Residents: provide information about Wahiawa's various attractions at businesses and other areas frequented by visitors, military personnel and residents, and provide appropriate street signage to locate these attractions. 190

¹⁸⁸ Ibid, 1.

¹⁸⁹ Ibid, 2-3.

¹⁹⁰ Ibid, 3.



REGULATORY FRAMEWORK

SITE LOCATION:

Wahiawā, Oʻahu, Hawaiʻi

Tax Map Keys: TMK: 7-1-001:048

TMK: 7-1-001:045 TMK: 7-1-001:046 TMK: 7-1-001:047 TMK: 7-1-001:048

TMK: 7-1-001:049

TMK: 7-1-001:050



FIGURE 27: Project site TMK Diagram.

ZONING

The C&C of Honolulu has zoned the property as "AG-1 Restricted Agriculture." AG-1 is the most restrictive agricultural designation; intended to protect and preserve important agricultural lands. The purpose of the City's agricultural AG-1 zoning district is to conserve and protect important agricultural lands for the performance of agricultural function by permitting only those uses which perpetuate the retention of these lands in the production of food, feed, forage, fiber crops and for horticulture.

I AND USE DESIGNATIONS

Information obtained from the C&C of Honolulu GIS mapping system indicates the project site is within an Agricultural State Land Use District and is designated as Zone AG-1 by the City (see Figure 29 and Figure 30). The entire project area is also classified as "Unique" agricultural lands by the Agricultural Lands of Importance to the State of Hawai'i (ALISH) classification system (see Figure 31); while the Land Study Bureau classified the project site as "Good" land (see Figure 32).

The purpose of the State Agricultural District is to maintain a strong agricultural economic base, to prevent unnecessary conflicts among incompatible uses, to minimize the cost of providing public improvements and service, and to manage the rate and location of development. Only accessory agribusiness activities which meet the above intent shall be permitted in this district. "Unique" agricultural land is land other than "Prime" agricultural land and is used for the production of specific high-value food crops. The land has the special combination of soil quality, temperature, humidity, sunlight, air drainage, elevation, aspect, moisture supply, or other conditions, such as nearness to market, that favor the production of a specific crop of high quality and/or high yield when the land is treated and managed according to modern farming methods. In Hawai'i, some examples of such crops are coffee, taro, rice, watercress and non-irrigated pineapple. The Land Study Bureau of the University of Hawai'i compiled an

inventory and evaluation of the State of Hawai'i's land resources during the 1960's and 1970's. The Bureau grouped all lands in the State into homogeneous land types with similar overall quality in terms of agricultural productivity, and classified the lands with an Overall Productivity Rating ranging from "A" (very good) to "E" (not suitable).

HONOLULU CITY AND COUNTY LAND USE ORDINANCE

ALLOWABLE USES

Please refer to Appendix H for the Charts that are reorganized from the Land Use Ordinance (LUO) to categorize uses with approval requirements. ¹⁹¹ Use definitions per LUO are also compiled. ¹⁹² Some uses in the LUO are not defined and will require clarification.

AG-1 ZONING, BUILDING HEIGHTS AND ENVELOPES (PER LAND USE ORDINANCE)

Per the LUO, the standard parameters for building are as follows:

ENVELOPE (OVERALL) 192 193

- » Front Yard: 15'
- » Side Yard: 10'
- » Height: 25'
- » Height setbacks: sec. 21-3.50-4(c) (for agricultural structures) for each additional 2 feet of height above 15' (not to exceed 100'), structure must be set back 1 foot. (See diagram in Appendix H) 194

BUILDABLE AREA (OVERALL) 195 196

- » Property Area: 511 ac.
- » Maximum building area (non-agricultural structures): 10% = 51.1 acres (2,225,916 sf) buildable
 - > Agricultural clusters: 1 per 15 ac. = 34 clusters
 - > Farm dwellings: 1 cluster per 5 ac. = each cluster with 3 farm dwellings = 102 farm dwellings total

CONSERVATION EASEMENT, COVENANTS AND RESTRICTIONS

The creation of a Conservation Easement over the OHA's 511 acres was intended to protect agricultural land from future development, the OHA's interests with regard to culturally significant sites and functional agriculture, while addressing the military's concern about new residential development hindering their operations.

¹⁹¹ City and County of Honolulu: Office of Council Services, ed. "Chapter 21 LAND USE ORDINANCE." August 29, 2016. doi:https://www.honolulu.gov/ocs/roh/193-site-ocs-cat/975-roh-chapter-21.html. Master Use Table, Chapter 21, Article 3, Table 21-3.

¹⁹² Ibid, Definitions, Chapter 21, Article 10, Section 21–10.1.

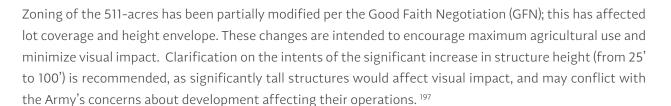
¹⁹³ Ibid, Ag Development Standards, Chapter 21, Article 3, Table 21–3.1.

¹⁹⁴ Ibid, Agricultural Districts, Chapter 21, Article 3, Section 21-3.50-21-3.50-4.

¹⁹⁵ Ibid, Height Setbacks, Chapter 21, Article 3, Figure 21–3.1.

¹⁹⁶ Ibid, Ag Development Standards, Chapter 21, Article 3, Table 21–3.1. ¹

KUHIKUHI PU'UONE



ENVELOPE (OVERALL) 198 199

- » Front Yard: 15'
- » Side Yard: 10'
- » Height: 100' per Easement (typical AG-1 height, per LUO: 25')
- » Height setbacks: sec. 21-3.50-4(c) (for agricultural structures, no change) for each additional 2 feet of height above 15' (not to exceed 100'), structure must be set back 1 foot. (See diagram) ²⁰⁰

BUILDABLE AREA (OVERALL) 201 202

- » Property Area: 511 ac
- » Maximum building area (non-agricultural structures): 10% = 51.1 acres (2,225,916 sf) buildable
 - > Agricultural clusters: 1 per 15 ac. = 34 clusters
 - > Farm dwellings: 1 cluster per 5 ac. = each cluster with 3 farm dwellings = 102 farm dwellings total
 - > Studies will be needed for agriculture cluster configurations, depending on master plan.
- » Maximum impermeable footprint: 6% = 30.66 acres $(1,335,549 \text{ sf})^{203}$
 - This GFN requirement is in addition to the LUO requirements, but is similar to open space rules found in other land uses (ex. Residential Mixed-Use). The intent (in this case) is to preserve the maximum area for functioning agriculture land, while minimizing visual impact from neighboring locations and within the site.
- » Impermeable surfaces Include buildings, roads, footpaths, pads, etc.
 - Future designs can explore permeable roads and paths (e.g. Products like grass-crete, invisible surfaces, gravel, etc.) to possibly exempt those areas. Such areas would need to be identified and verified with the various reviewing agencies. ²⁰⁴

¹⁹⁷ Ibid, Agricultural Districts, Chapter 21, Article 3, Section 21–3.50–21–3.50–4.

⁹⁷ Ibid, Good Faith Negotiations, Kūkaniloko — Exhibit C.

¹⁹⁸ Ibid, Ag Development Standards, Chapter 21, Article 3, Table 21–3.1.

¹⁹⁹ Ibid, Agricultural Districts, Chapter 21, Article 3, Section 21-3.50-21-3.50-4.

²⁰⁰ Ibid, Height Setbacks, Chapter 21, Article 3, Figure 21–3.1.

²⁰¹ Ibid, Ag Development Standards, Chapter 21, Article 3, Table 21–3.1.

²⁰² Ibid, Agricultural Districts, Chapter 21, Article 3, Section 21–3.50–21–3.50–4.

²⁰³ Ibid.

²⁰⁴ Ibid.



- » To attain 10% of buildable area, but stay withing the 6% of impermeable coverage, structures can be multi-storied, as long as they are within the building envelopes. ²⁰⁵
 - Multiple floors may make sense for some uses (farm dwelling clusters, office spaces) but not for others
- » Regarding raised structures to allow permeability to ground level:
 - > In current policy, the structure's footprint holds precedent, regardless of space whether below the structure is permeable or not; therefore structures with non-permeable roofs would most likely count towards the site's non-permeable footprint. Assumptions are based on previous conversations with the C&C Department of Planning and Permitting on other projects with similar structures.
 - Naised structures would improve rainwater retention and increase opportunities for shade. Vehicles and equipment could also be stored under structures, thereby reducing visual impact; this would address some of the intents of the GFN. ²⁰⁶
- » Regarding rooftops used for agriculture and green roofs (which should reduce water runoff and therefore improve permeability) there is no current policy that details this ruling.
 - > This would satisfy the intent of maximizing the area for functioning agriculture. 207
 - Regarding the possibility of grass and agricultural roofs being exempt from the non-permeable surface calculation, because there is no precedent for this calculation, this would be looked at by the agencies on a case-by-case basis, and would require more detailed site plans, building plans, supporting data and diagrams showing various methods of water retention to prove the proposal would indeed improve water permeability and/or retention. While these are good strategies for the project and would be recommended, the determination of what strategy to implement is uncertain. ²⁰⁸
 - > Further in-depth studies with supporting data would help convince the agencies to accept these proposals.

²⁰⁵ Ibid.

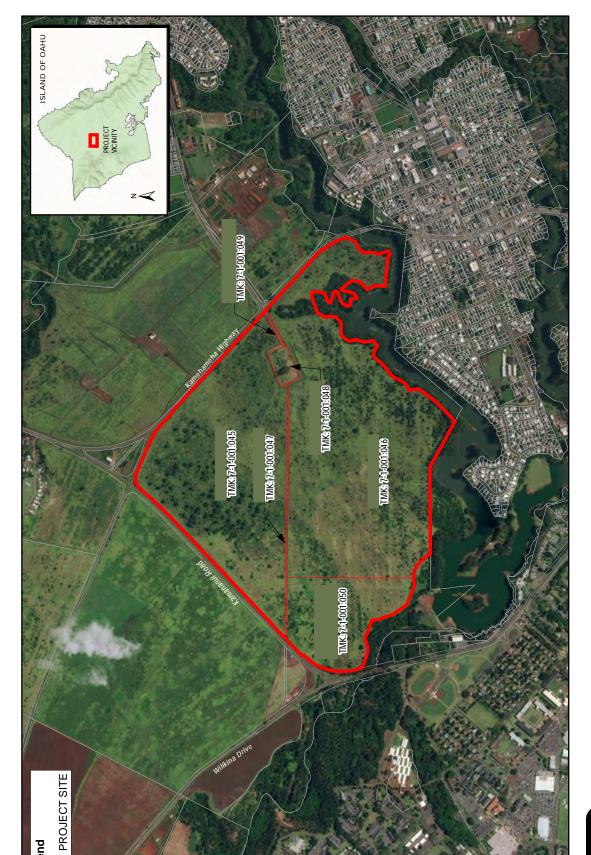
²⁰⁶ Ibid.

²⁰⁷ Assumptions made by WCIT Architecture.

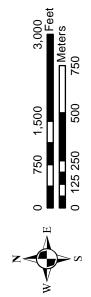
²⁰⁸ Ibid

AERIAL PHOTOGRAPH EXISTING CONDITIONS REPORT

JAN 2019



Legend





EXISTING CONDITIONS

This Existing Conditions Report (ECR) presents the existing conditions for the infrastructure and utility systems of the OHA's Wahiawā Lands surrounding the Kūkaniloko Birthing Stones. The ECR covers the existing roadway system, the potable water system, the sanitary sewer system, the storm drainage system, the electrical/telephone/cable and data systems, and the gas system in the vicinity of the project site. This report is based on available information as of March 2017, provided by Wilson Okamoto Corporation of Honolulu.

PROJECT SITE DESCRIPTION

Kūkaniloko Birthing Stones are currently located on a 5-acre site identified as Tax Map Key (TMK): 7-1-001:048 (Kūkaniloko Parcel). The ECR study area also includes five surrounding TMKs: 7-1-001:045, 7-1-001:046, 7-1-001:047, 7-1-001:049, and 7-1-001:050 for a total project site area of 516-acres (see Figure 28). The project study area is bound by the Kaukonahua Stream to the south and Schofield Barracks to the south and southwest. Kamehameha Highway, Kamananui Road and Wilikina Drive create the site boundaries to the east-north-east, to the west-north-west, and to the west, respectively.

SITE ACQUISITION

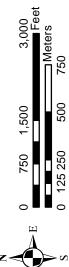
In 2012, the 511-acres surrounding the Kūkaniloko Birthing Stones were purchased by the OHA in order to ensure the future uses of Kūkaniloko Birthing Stones and the surrounding area is consistent with Hawaiian cultural values. The objectives of this acquisition were to: (1) explore the development of compatible agricultural uses and other programmatic initiatives; (2) contribute to the improvement of Hawai'i's food self-sufficiency, preservation of open space and watershed lands, and overall community planning goals for central Oʻahu; and (3) protect Kūkaniloko by providing a buffer against future incompatible development in the area.

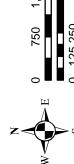
JAN 2019

TMK: 7-1-001: 045 TO 050

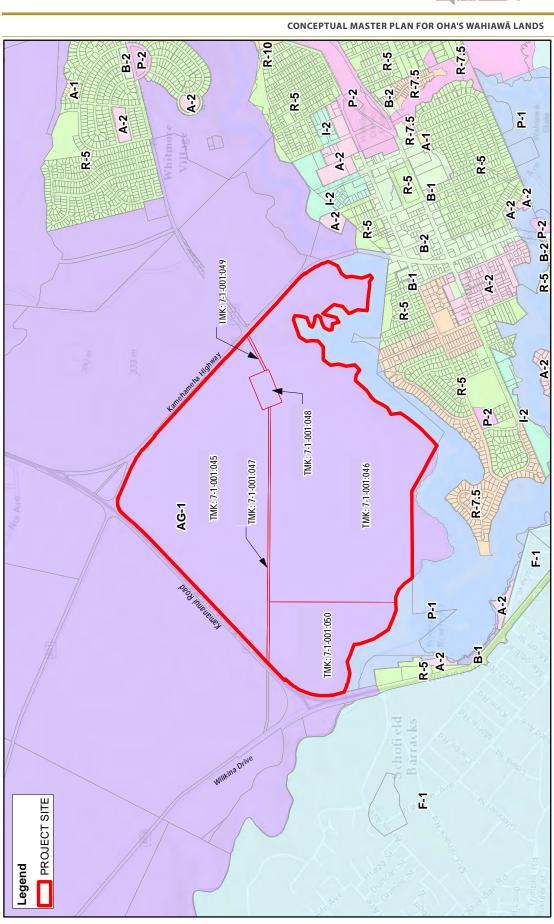
KŪKANILOKO EXISTING CONDITIONS REPORT

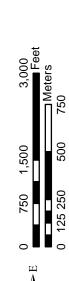




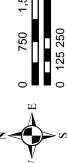




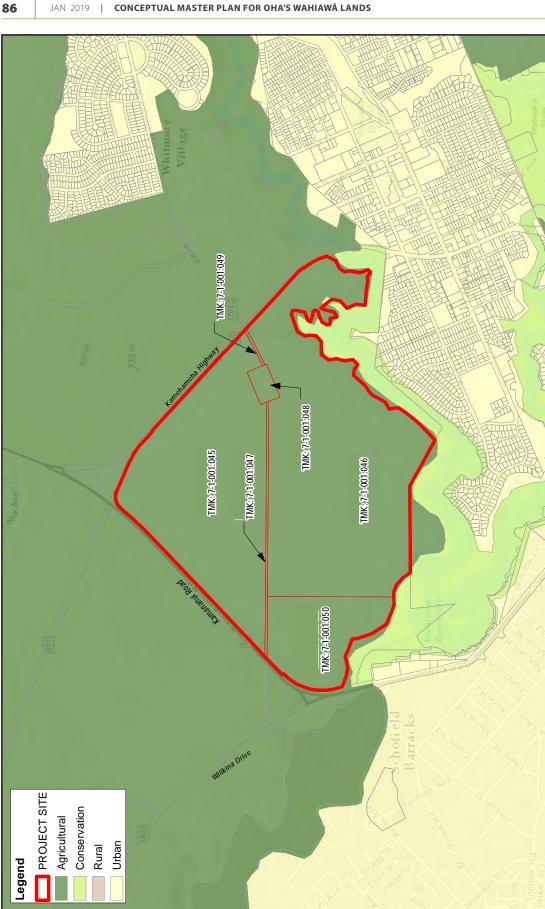










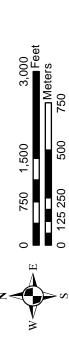


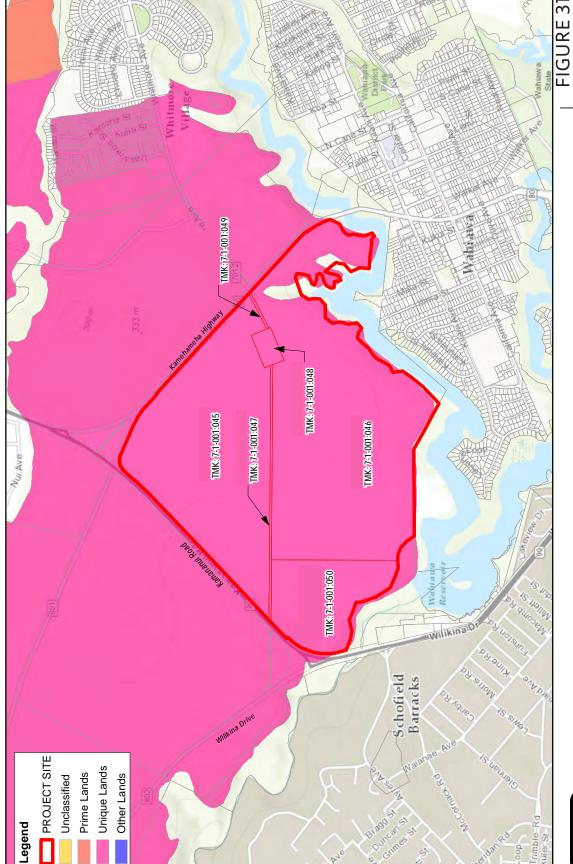
CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

JAN 2019

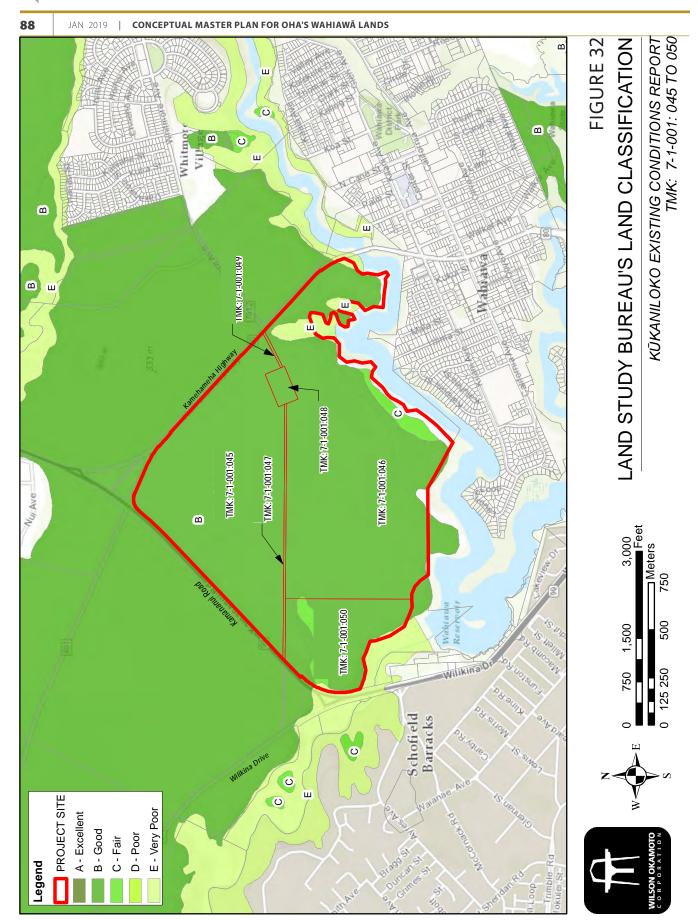
KŪKANILOKO EXISTING CONDITIONS REPORT TMK: 7-1-001: 045 TO 050

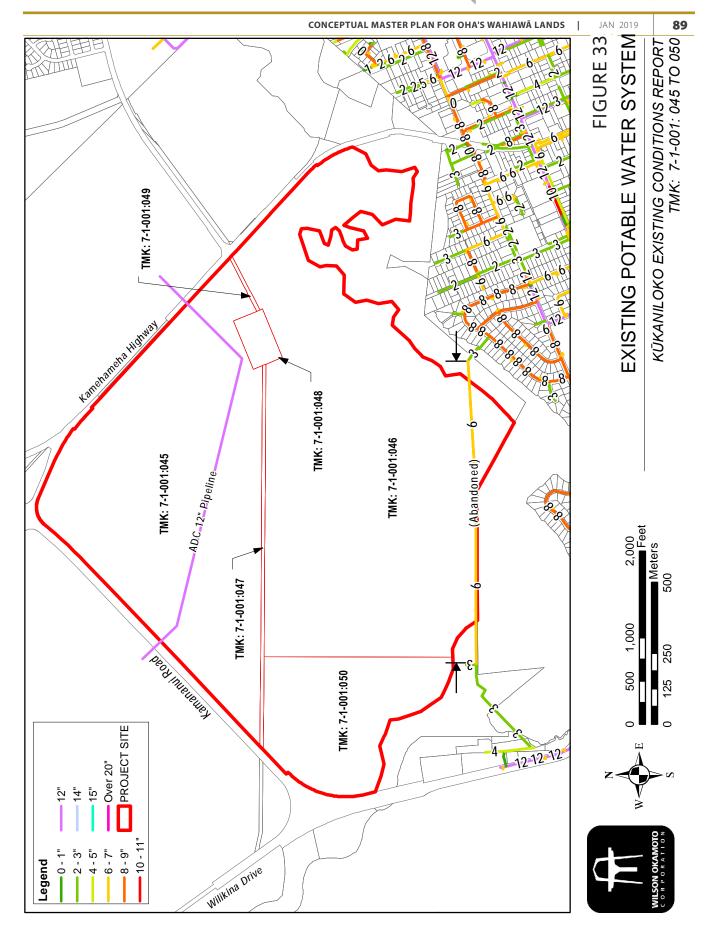
AGRICULTURAL LANDS OF IMPORTANCE TO THE STATE OF HAWAII











KUHIKUHI PU'UONE



ROADWAY SYSTEM

EXISTING CONDITIONS

Information on the roadway system for the project is based on the existing conditions of Kamehameha Highway, Wilikina Drive and Kamananui Road. Vehicular access to the project site is an existing dirt road off of the intersection at Kamehameha Highway and Whitmore Avenue. Kamehameha Highway is a two-lane, two-way road, and serves as the main access route to the North Shore of O'ahu from Central O'ahu, and is located to the east of the project site. Kamehameha Highway is owned and maintained by the State of Hawai'i Department of Transportation (HDOT). Kamehameha Highway runs north past the dirt road entrance to the project site until it intersects with Kaukonahua Road, along the eastern boundary of the project site. Kaukonahua Road is also a two-lane, two-way road and connects the Kamehameha Highway with Wilikina Drive to the west of the project site.

The northern boundary of the project site is denoted by the alignment of Kamananui Road. Kamananui Road is a two-lane, two-way road that provides access to Schofield Barracks from Kamehameha Highway. The road runs from east to west where it intersects with Wilikina Drive running from north to south. Wilikina Drive forms the western boundary of the project site and is a two-lane, two-way road for about 2,250 linear feet until it opens up into a fourlane, two-way road near the entrance of Schofield Barracks.

POTABLE WATER SYSTEM

EXISTING CONDITIONS

Information obtained from the Honolulu Board of Water Supply distribution maps indicated that there is a six-inch abandoned water line running through the southern tip of the TMK:7-1-001:046 Parcel (see Figure 33). Although the six-inch abandoned water line runs through the site, should it be reactivated it may not be sufficient to service the entire project site. At this time, it is unclear if there is an easement for this pipe. The nearest connection point capable of servicing the entire site is the twelve-inch line ending in the middle of Wilikina Drive to the south-west of the overall project site, nearest to the TMK:7-1-001-050 Parcel.

The State of Hawai'i Agribusiness Development Corporation (ADC) was created in 1994 to facilitate and provide direction for the transition of Hawai'i's agricultural industry from sugar and pineapple to diversified crops. Information on the ADC Wahiawā Irrigation System is based on consultations with ADC completed on January 25, 2017. Currently, ADC's potable water line runs through the Kūkaniloko site, entering from Kamananui Road. The water line then runs towards the 5-acre Kūkaniloko Parcel, where it is then redirected to ADC's property across of Kamehameha Highway from the Kūkaniloko site. The source of the potable water is a deep water well and, thus, has a high cost associated with its use due to pumping requirements. The water is free; however, the cost is attributed to delivering the water to the site. ADC has requested more information on the proposed development in order to begin servicing the project site. The information requested includes proposed site storage capacity, anticipated water usage, and the overall proposed development plan of the Kūkaniloko site and its surrounding areas.



SANITARY SEWER SYSTEM

EXISTING CONDITIONS

Information obtained from the City and County of Honolulu GIS mapping system indicated that there are no existing sewer laterals on the 5-acre Kūkaniloko parcel or on the surrounding parcels of the OHA's Wahiawā lands. The nearest existing sewer main to the 5-acre Kūkaniloko parcel is at the intersection of Kamehameha Highway and Whitmore Avenue (approximately 1,000 linear feet from center of the 5-acre Kūkaniloko parcel).

The existing sewer main at the intersection of Kamehameha Highway and Whitmore Avenue is a 15-inch gravity sewer line that services the Whitmore Village subdivision to the northeast of the Kūkaniloko site. From the intersection, the system flows along Kamehameha Highway towards Wahiawā town, going under the Kaukonahua stream until the intersection of Kilani Avenue and Kamehameha Highway. At the intersection, the system takes a right turn to follow the Kilani Avenue centerline to the intersection of 'Ilima Street and Kilani Avenue. The sewer main then follows 'Ilima Street south to California Avenue which is then collected at the Wahiawā Wastewater Treatment plant at the west end of California Avenue. The sewage is then treated at the plant before being released into the Wahiawā Reservoir.

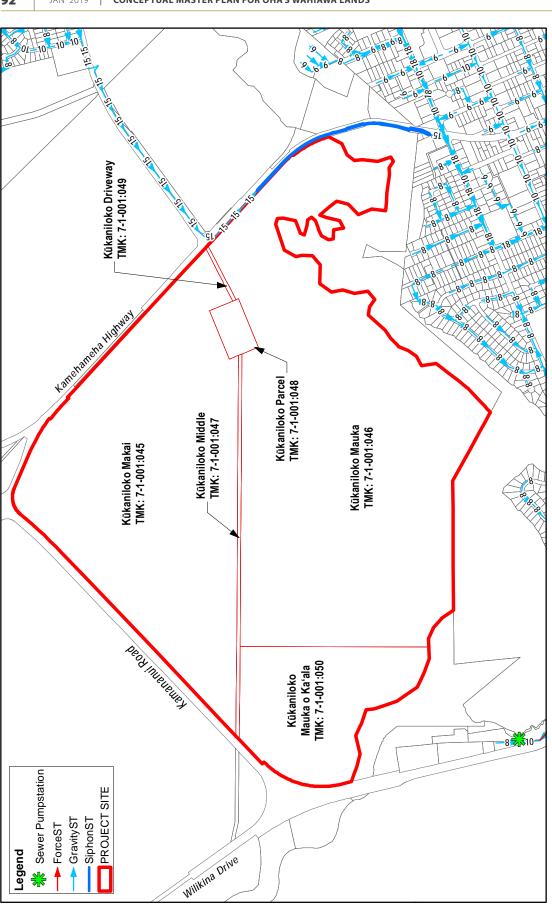
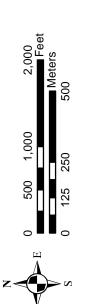


FIGURE 34 EXISTING SANITARY SEWER SYSTEM

KÜKANILOKO EXISTING CONDITIONS REPORT TMK: 7-1-001:045 TO 050







STORM DRAINAGE SYSTEM

EXISTING CONDITIONS

Information on the storm drainage system for the project site is based on the City and County of Honolulu GIS map system. Currently, there is no existing storm drainage system within the project study limits. Overall, the project site area tends to slope down towards the Kaukonahua Stream to the south, which is classified as a Class 2 State receiving water by the State of Hawai'i Department of Health (DOH).

Class 2 State receiving waters are defined to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping and navigation. The uses of Class 2 receiving waters are all uses compatible with the protection and propagation of fish, shellfish and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the highest degree of treatment or control compatible with the criteria established for this class.

Based on the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), Community Panels 15003C0120F and 15003C0210F, the project site is located in Zone D. The Zone D designation is used for areas where there are possible, but undetermined, flood hazards, as no analysis of flood hazards has been conducted. Zone D areas are often undeveloped and sparsely populated, however it should be noted that new development in these areas may increase the possibility of property damage from flooding.

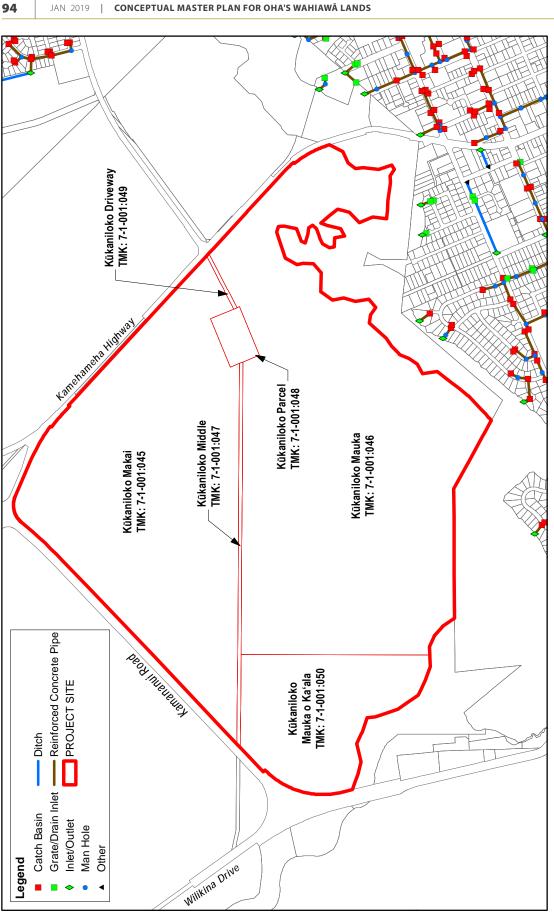


FIGURE 35 **EXISTING STORM DRAINAGE SYSTEM**

KÜKANILOKO EXISTING CONDITIONS REPORT TMK: 7-1-001: 045 TO 050





2,000 Z,000 Meters

1,000

200

500

250

125





ELECTRICAL, TELEPHONE, CABLE, AND DATA (ROADWAY) SYSTEM

EXISTING CONDITIONS

Electrical, telephone and data line access to the internet and cable television (CATV) service for the project area will be provided by Hawaiian Electric Company (HECO), Hawaiian Telcom, and Spectrum (previously Oceanic Time Warner Cable), respectively. Consultation was undertaken with HECO in December 2016 to determine the availability of electrical service for the proposed project.

Existing utility poles and overhead utility lines are located along Kamehameha Highway on the eastern boundary of the project area which is in the closest proximity to the 5-acre Kūkaniloko parcel. Existing utility poles and overhead utility lines are also located further along the northeastern boundary of the site, along Kaukonahua Road. In consultation with HECO it was determined that requisite electrical power will be available for the project site. Upgrades to the electrical infrastructure in the area in order to service the project site will need to be analyzed as definitive information on the proposed use of the project site is provided. Within the project site, there are about five existing overhead transmission utility lines that cross the western portion of the project site. The existing overhead transmission utility lines run from the intersection of Kamananui Road and Wilikina Drive to where it crosses over Kaukonahua stream towards Wahiawā.

GAS SYSTEM

EXISTING CONDITIONS

Information on the gas system capabilities for the project site and the surrounding areas is based on the consultation with the Hawaiʻi Gas Company. From the consultation, it was determined that there is currently no existing gas utility at the Kūkaniloko parcel or the 511-acre parcel. The nearest tank is located on Wilikina Drive, in the parking lot of the Kemo'o Farms Bar & Grill to the southwest. Gas utility may be requested at this site and will require further coordination with the Hawai'i Gas Company.





04 MO'OLELO | KĀNAKA



MO'OLELO | KĀNAKA

The previous sections discussed the place, plans and efforts set forth for the OHA's Wahiawā lands, and compliance related information that is intended to guide the use of the lands. The evolution of the property, its historic and cultural importance, and the legacies of the ali'i who were born there were also introduced. This section describes why the OHA is approaching the planning process in this way, and how the overall planning process was structured.

First, this section will review high-level information about the OHA and how the 511-acre Wahiawā lands fit into the organization.

Next, this section will discuss pertinent details of the planning process, such as the project's Working Group and their recommendations.

OHA'S VISION

OHA's vision is to

"Ho'oulu lāhui aloha, To raise a beloved nation" and is derived from the thoughts and leadership of both King Kalākaua and Oueen Lili'uokalani. 209

OHA realizes that it takes a village to raise a child, and it takes many villages to support a nation. As a relatively new land owner, it is important that the OHA approach land management and development in a way that aligns with their vision. Thus a collective impact mindset was imparted in the participatory planning efforts for one of the most important places to the Hawaiian people.

OHA MISSION

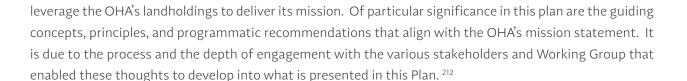
To mālama Hawaiʻi's people, environmental resources and the OHA's assets toward ensuring the perpetuation of the culture, the enhancement of lifestyle and the protection of entitlements for Native Hawaiians, while enabling the building of a strong and healthy Hawaiian people and lāhui, recognized nationally and internationally. 210

The LLP manages all of the OHA's "Legacy and Programmatic Lands," which fall under the OHA's Land Assets Division created in 2014. The 511-acre property is considered to be both a Legacy and a Programmatic landholding. Legacy Lands are categorized as preservation lands and/or cultural lands. Programmatic Lands are categorized as agricultural, educational, health and human services, and community lands. Further, this plan represents the vision that the OHA's Land Assets Division and its Legacy Lands Program has to

²⁰⁹ "Strategic Plan & Focus," The Office of Hawaiian Affairs (OHA), , accessed January 10, 2017, http://www.oha.org/strategicplan.

²¹⁰ Ibid.

²¹¹ Ihid



OHA'S ROLE

The OHA serves as advocates, researchers, asset managers and community engagers on behalf of its beneficiaries to improve conditions for all Native Hawaiians through systemic change.

- » ADVOCACY: means making changes to laws, policies and practices which broadly impact the priorities the BOT has approved in the OHA Strategic Plan. This includes monitoring activities to identify harmful policies and laws to Native Hawaiians, establishing advocacy initiatives to change laws, improving the conditions for Native Hawaiians through policies and practices, and engaging in community outreach to mobilize the community.
- » RESEARCH: means to compile and gather data to identify gaps and important issues, inform advocacy efforts and ensure actions and initiatives are based on the best information available.
- » ASSET MANAGER: means to fulfill the OHA's trust by analyzing opportunities, making critical decisions, and maximizing the value of the OHA's portfolio and other investments.
- » COMMUNITY ENGAGEMENT: means creating two-way communication channels that share stories of the lāhui with the goals of connecting the OHA with Hawaiian communities and the general public, and mobilizing communities for the betterment of the lāhui. ²¹³

In this case, as Land Asset Managers, the OHA is looking at the holistic value of Kūkaniloko and focusing on the opportunity to address otherwise fleeting social and ecological returns on investment. Due to the significance of the place, the kuleana and mana associated with it, the legacies of the ali'i who were born there, and the historic use of the property, it is more important "to do the right thing" as opposed to doing "what others do with similar properties." Thus, you will find that the financial returns on investment are subordinate to the others. This was done purposefully based on the understanding of place, people, carrying capacity and potential. Thus, this plan outlines what can be done, and future action and business plans will provide the basis on how to achieve the goals of this plan in a fiscally responsible manner without compromising the integrity of this place, a wahi kapu. ²¹⁴

²¹² Information provided by the Office of Hawaiian Affairs.

²¹³ Ibid.



FIGURE 36: Community Engagement phased process

COMMUNITY ENGAGEMENT

From February 2016 through August 2018, the *Kuhikuhi Pu'uone Kūkaniloko (KPK)* followed a pre-established Community Engagement Plan to guide the OHA's outreach and collect input from its beneficiaries and other stakeholders. Objectives of the Plan were threefold and organized into four (4) phases that reflect key milestones within the conceptual master planning process.

OBJECTIVES

- 1. Collect and incorporate a broad range of community input into the Kūkaniloko Conceptual Master Plan.
- 2. Develop and maintain an iterative process with key stakeholders and experts that are selected to inform the development of the Kūkaniloko Conceptual Master Plan.
- 3. Update stakeholders on the status of the planning process at the following key milestones: Completion of the basis of planning, mid-planning, and draft Conceptual Master Plan.

To accomplish these goals through the two-year planning process, three groups with stakeholder interests were identified. These stakeholders were separated into two rounds of civic engagement meetings held in beginning and end of the planning process. The purpose of these meetings was to inform these stakeholders about the planning process, share key findings, present the OHA's three general use categories, and Conceptual Master Plan recommendations.

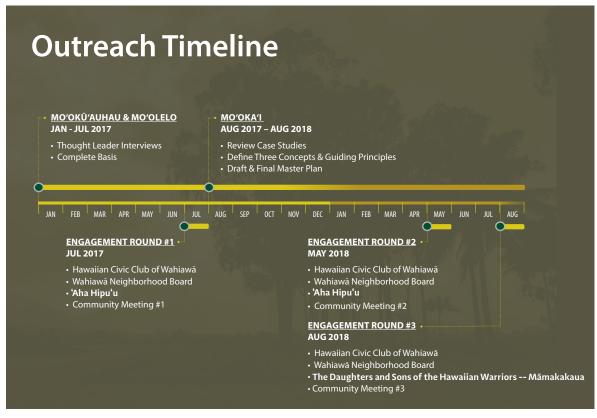
Three rounds of community meetings were also hosted to accomplish the same meeting objectives. The timeline above illustrates meetings were held.

The team engaged over 200 people through discussions with two community thought leaders, a focus group meeting with surrounding land owners, nine presentations to key stakeholders, three larger community meetings for the public to attend, and monthly meetings with a 10-person Working Group (detailed below) who were dedicated to the development of this Plan. A summary of the input collected from these efforts can be found in Appendix L. A list of each meeting date is included below (aside from the monthly Working Group meetings).

²¹⁴ Information provided by the Office of Hawaiian Affairs.



DATE	GROUP
6.19.17	Wahiawā Neighborhood Board
7.5.17	Wahiawā Landowners
7.12.17	Hawaiian Civic Club of Wahiawā
7.13.17	Community Meeting #1
7.17.17	'Aha Hipu'u
5.9.18	Hawaiian Civic Club of Wahiawā
5.21.18	Wahiawā Neighborhood Board
5.24.18	Community Meeting #2
7.16.18	'Aha Hipu'u
8.11.18	The Daughters and Sons of the Hawaiian Warriors Māmakakaua
8.21.18	Community Meeting #3
9.05.18	OHA CRM Presentation





INFORMATION GATHERING

Gathering information from community followed the four-step Conceptual Master Plan process outlined in the Community Engagement Plan and detailed in the consecutive pages. How the community's input was extracted and incorporated into the Plan will be explained in the Organizing Information and Conceptual Planning and Outreach Outcomes section of this report (pg. 122).

One of the first steps was to get a preliminary feel of what was envisioned for the property. Along with internalizing the contents and extensive historical background of the site found in the Draft Preservation Plan, Traditional Cultural Property Report, and other available information; interviews with some of the "thought leaders" in the Hawaiian community were conducted. In general, the thought leaders provided comments on managing access, perpetuating culture, cultural education, and protecting the place for current and future generations to engage. More information can be gleaned from excerpts of the thought leader discussions as documented below.

PHASE 1: PRE-PLANNING

Two "thought leader" discussions were held with Keith Awai of Oʻahu on January 9, 2017 and Hōkūlani Holt-Padilla of Maui on April 13, 2017. Both are knowledgeable and well-respected kūpuna and practitioners who were consulted to include their vision and consideration for Kūkaniloko's Conceptual Master Plan.

KEITH AWAI - Biography

Keith Awai was born in Honolulu and raised in Hale'iwa, where his family goes back eleven generations. Keith graduated from Kamehameha Schools in 1971 and went on to attend Brigham Young University Lā'ie (then known as Church College of Hawaiʻi). While at Kamehameha, Keith studied hula under the late Aunty Nona Beamer and afterward with the late Aunty Sally Moanikeala Wood Naluai, the first kumu hula of the Polynesian Cultural Center (PCC). Following an 'ūniki ceremony in 1981 by Aunty Sally, Keith founded Hālau Kawaipu'ilani in Hale'iwa. He also worked as the Cultural Specialist at PCC for 44 years before retiring in March 2016. Keith's mother Kanani Awai is a kupuna in residence for Waimea Valley and the Department of Education. Keith's late father



FIGURE 38: Keith Awai

worked for Senator Gerald Hagino, and was involved in correcting historical errors in reports concerning the Galbraith Estate. Some say that the correction of inaccuracies, such as the assertion that Kapi'olani gave birth at Kūkaniloko, helped clear the way for the successful purchase of Galbraith lands.

KEITH AWAI - Vision for Kūkaniloko

"My vision for Kūkaniloko deals more with the Japanese and letting locals and others join in. Because hula is so big in Japan, my initial vision is to design a venue for hula hālau to take their students. Perhaps it's a



building to show the history of Kūkaniloko with pictures and sketches (a typical historic museum). Offer guided tours and presentations including a depiction of someone giving birth. Hula classes can be offered where mele that mention Kūkaniloko are shared, or even have a contest to compose. A shop that sells cards and items centered around Kūkaniloko would also be nice".

HŌKŪLANI HOLT-PADILLA - Biography

Hōkūlani Holt-Padilla was born in Honolulu and grew up between Waikīkī, Waimānalo and Maui. Raised primarily by her maternal grandparents, Hōkūlani was strongly influenced by her grandmother who was a Kumu Hula. Her grandmother had seven daughters and eight sons, three of which became Kumu Hula, including her mother. Hōkūlani's sister, cousin, and son are also Kumu Hula.

After graduating from Kamehameha Schools, Hōkūlani moved to Maui in 1975. There, she started teaching hula and shortly thereafter formed her hālau, Pā'ū o Hi'iaka which recently celebrated 40 years.

In her professional career, Hōkūlani previously worked for the Department of Education's Artist In The Schools Program, served as principal for Pūnana Leo o Maui, was the cultural and education



FIGURE 39: Hōkūlani Holt-Padilla

manager for the Kahoʻolawe Island Reserve Commission, and served as the first cultural programs director for the Maui Arts and Cultural Center.

She currently serves as Director of Ka Hikina O Ka Lā at UH Maui to encourage Hawaiian learners to major in STEM and Hawaiian Studies.

HŌKŪLANI HOLT-PADILLA - Vision for Kūkaniloko

"As an educator and cultural practitioner, my vision for Kūkaniloko would be in keeping with these passions. I don't want to see the site changed too much, or the environment altered by walling it in. However, I would want to see it brought back to its cultural use. If it is restored for cultural use, does that mean we allow people who can prove their genealogical connection to give birth on the rocks? That could be problematic.

"However, I'm still kānalua (undecided) about this because sometimes under the guise of education, I've seen inappropriate behavior occur and things happen. Perhaps the surrounding area can be used for education and culture. Therefore, I'm leaning towards leaving the site as it is because we know what's there today and that's what's survived here."



LĀLĀ 'IKE PONO A KŪKANILOKO WORKING GROUP

As thought leaders were being engaged so, too, was a process to secure a Working Group that would be dedicated to assisting the OHA in the development of a Conceptual Master Plan for the 511-acre parcel. This was one of the most significant components of the Community Engagement Plan and required monthly meetings with the group. The kuleana of the Kūkaniloko Conceptual Master Planning Working Group ("Working Group") was to advise the OHA on its plans for the 511-acres surrounding the Kūkaniloko Birthing Stones.

The Working Group, who later renamed themselves as the "Lālā 'Ike Pono a Kūkaniloko Working Group," was comprised of 10 members with expertise in cultural and natural resource management, agriculture, archaeology, business and marketing, education, Hawaiian culture, and other fields of study such as environmental and property law.

To convene the group, a notice of open enrollment for the Working Group was announced in the November 2016 issue of *Ka Wai Ola*, on the OHA's website and social media pages. Applications were collected through an online registration process at https://ainaarch.regfox.com/kukaniloko. The application process closed on January 3, 2017 with a total of 27 applications received (26 applicants applied online and 1 delivered their hand-written application to the OHA Land Assets Division). All applications were reviewed and scored per the parameters clarified in the Kūkaniloko Master Plan Working Group Charter and Appointment Criteria Work Sheet.

Of the 27 applicants, nine individuals were recommended for placement on the Working Group. These individuals represent diverse communities, have an array of cultural expertise, educational backgrounds, and experience useful to providing support in the development of the Kūkaniloko Conceptual Master Plan.

When one member could not fulfill the Charter expectations early in the process, two additional members were selected under the same process and criteria, rounding out the group to 10.

Copies of the Applicant Selection Summary and Charter detailing the kuleana of the group and signed by each member are included in Appendix Q.

The advisory group met monthly to formulate a shared vision, goals and objectives that enhanced the value of their contributions to the Conceptual Master Plan. The group advised the OHA in the development of a unique, innovative, exemplary, and culturally-focused Kūkaniloko Master Plan that would harmoniously protect, preserve, and perpetuate the natural and cultural resources of Kūkaniloko for today's and future generations.

Two private guided site visits and community workdays at Kūkaniloko provided an opportunity for the group to connect, mālama the site during their monthly workdays, understand the sheer scope of the project, and define physical elements and programming.

JAN 2019





FIGURE 40: Lālā 'Ike Pono a Kūkaniloko Working Group at the OHA Offices.



FIGURE 41: Lālā 'Ike Pono a Kūkaniloko Working Group at the 5-acre birthing stone site





FIGURE 42: Lālā 'Ike Pono a Kūkaniloko Working Group at the 5-acre birthing stone site



FIGURE 43: Lālā'lke Pono a Kūkaniloko Working Group at the 5-acre birthing stone site



PHASE 2: BASIS COMPLETE + START OF CONCEPTUAL MASTER PLAN

To begin Phase 2 on July 5, 2017, key neighboring landowners were engaged to discuss any plans, priorities, or issues that might impact the Kūkaniloko Conceptual Master Plan. Wahiawā landowners and tenants surrounding the OHA's 511-acres were invited to a meeting to share the Conceptual Master Plan timeline and process, build relationships and gather feedback. Following the presentation, the OHA opened the floor for the six attendees to ask questions, share their plans, and look for areas of synergy and opportunities to collaborate. The overall tone of the meeting was very positive and the group was interested in collaborating and leveraging existing relationships and resources for the benefit of Wahiawā and the State.

Concurrently, the first of three sets of community meetings were held to introduce the project, the planning team, and the process to the previously mentioned stakeholders to document some of their preliminary mana'o about the OHA's three conceptual direction themes (Ho'omana, Ho'ona'auao and Ho'oulu 'Āina). At this presentation/meeting, three questions were asked of the group(s) and facilitated in small group table discussions. The three questions were:

- i. What does Ho'omana mean to you?
- ii. How could the OHA's lands be used for cultural education?
- iii. What could agriculture look like on the lands surrounding Kūkaniloiko?

IN SUMMARY THE RESPONSES WERE AS FOLLOWS:

Overall, stakeholders were supportive of maintaining the Conceptual Directions of:

1. Protection of the stones

Participants supported keeping the stones in their original state, maintaining an on-site presence with security, erecting natural barriers to regulate access, and installing interpretative signage. These items were a priority.

2. Accessibility for cultural education

It was mentioned that site programming should be available to all ages, from keiki to kūpuna, and reserved for kama'āina and especially Native Hawaiians. While visitors were mentioned as being able to use the site for cultural education, others felt that Native Hawaiians should be given a priority and also warranted access to certain areas designated for cultural practitioners.

Astronomy, lua, hula, oli, healing, traditional agriculture, preservation, birthing practices, genealogy, historical stories, la'au lapa'au, sustainability, and other hands-on learning were some of the programming and educational opportunities that people listed as important.

Facilities that people wanted to see included a learning center, Hawaiian hale, classrooms, meeting rooms, overnight accommodations, and other spaces to host small and large groups.





FIGURE 44: Neighboring Land Owner's meeting



FIGURE 45: Neighboring Land Owner's meeting

JAN 2019

3. Promotion of agriculture on the 511-acres of land surrounding the Kūkaniloko Birthing Stones

Responses included a preference to feature local, native, and Polynesian-introduced agriculture instead of monoculture crops. Forestry and reforestation were highlighted to occur in the first phase, especially with the need for water being a critical first step before agriculture will thrive.

CREATING A GUIDE FOR PLANNING AND DEVELOPMENT

Building upon the first round of community feedback, the Working Group further explored the OHA's place-derived, priority themes. The result of this effort was the establishment of a Kumupa'a (foundation) and set of principles and guidelines. As recommended by the Working Group, these values must serve as the filter for the planning process and a foundation to stand upon for further development and the implementation of the Plan. The guiding statement, focus categories, and principles and guidelines are as follows:

KE KUMUPA'A / THE FOUNDATION

This place is a wahi kapu with mana that has existed since time immemorial and will exist for time eternal. It is an ecosystem of connectivity between 'āina and kānaka. Thus, actions occurring here shall be guided by the following categorical concepts and supporting principles and guidelines:

I. HO'OMANA

LĀLĀ 'IKE PONO A KŪKANILOKO

Recognizing, increasing, and connecting to the purpose of Kūkaniloko

PURPOSE

To understand, care and be inspired by the life, function and resources of this wahi kapu.

PRINCIPLES AND GUIDELINES

- A. Care for all resources and manage access and uses accordingly.
- B. Recognize the sacred nature of Kūkaniloko as a significant place of healing, birth, transformation, mana, and cultural revitalization.
- C. Honor all who have come before and maintain and expand connections specific to Kūkaniloko as a wahi kapu and puʻuhonua.
- D. Inspire and connect to the purpose of Kūkaniloko with all projects and plans.
- E. Perpetuate all three aspects: ho'omana, ho'ona'auao, and ho'oulu 'āina as a simultaneous and whole process detailed for resonance and clarity.



II. HO'ONA'AUAO

WAHI MANA PILI PONO

Cultivate, engage and increase wisdom

PURPOSE

To safeguard, enhance and amplify Hawaiian cultural knowledge.

PRINCIPLES AND GUIDELINES

- A. Provide holistic, inter-generational, 'āina-based education that incorporates 'ike kūpuna.
- B. Practice appropriate cultural protocol and pono behavior in all educational pursuits.
- C. Open space, 'āina-based learning, and site-specific mo'olelo connect people with place.
- D. Develop ancestral learning, teaching and evaluation practices that amplify cultural knowledge to assure its continuity. Heal the land, to grow the practitioner. Grow the practitioner to heal the land.
- E. Perpetuate all three aspects: ho'omana, ho'ona'auao, and ho'oulu 'āina as a simultaneous and whole process detailed for resonance and clarity.

III. HOʻOULU 'ĀINA

O'AHUNUI A LA'ILA'I

Care, engage and nourish land and people

PURPOSE

To inspire and be inspired by the growth of the land and the people.

PRINCIPLES AND GUIDELINES

- A. Create economic, educational, cultural and physical resources.
 - i. Continuity is assured through seed collection and sharing.
 - ii. Grow food and 'ōiwi leadership.
- B. Perpetuate Hawaiian practices and philosophy.
 - i. Grow lei plants, lauhala, traditional foods and medicines.
 - ii. Prioritize sites of cultural practice and plant accordingly.
- C. Utilize sustainable, ecological and culturally informed agricultural practices.
 - i. Contribute to habitat restoration and ecological rejuvenation.



- ii. Inspire Hawai'i, and other oceanic and indigenous communities, by demonstrating pono and coherent agricultural practices.
- D. Connect local agricultural communities to stimulate a community of Hawaiian mahi'ai and aloha 'āina practitioners.
 - Share knowledge, resources and products with other cultural sites.
 - ii. Develop a shared kuleana with other communities, projects, schools and agencies.
- E. Perpetuate all three aspects: ho'omana, ho'ona'auao, and ho'oulu 'āina as a simultaneous and whole process detailed for resonance and clarity.

CASE STUDIES

Case studies and research were shared with the Working Group. The purpose of the exercise was to provide a range of local and global examples of existing and proposed projects to generate ideas for landscaping and supporting infrastructure appropriate for the 511-acre property surrounding the Kūkaniloko Birthing Stones Site. The case studies exhibit a wide breadth of projects, scales and users. Each project ranges in its relevance in an attempt to identify alignment with the project. Many components of the case studies demonstrate design and programming components of projects that have positively impacted culture, community, environment and economy. A complete copy of the case study research is located in Appendix O of this document.

PHASE 3: MID-PLANNING

After the Working Group set the tone with the foundational thoughts inherent to the Kumupa'a and principles and guidelines, two full-day sessions were held incorporating multiple exercises to better define the project work breakdown structure. This helped to guide the discussions toward more tangible programmatic recommendations and the things that would be required to realize the recommendations.

The process began by brainstorming a list of project deliverables, organizing the deliverables into "like-themes" and then defining physical elements and infrastructure associated with those deliverables to produce an 'ohanacentered, community-based, educational and entrepreneurial production. The four major focus categories that emerged from this exercise were identified as:

- 1. Cultural Landscape
- 2. Vegetation
- 3. Education (Learning Center)
- 4. Revenue Generation

Organized into focus teams based on areas of expertise and passion, the Working Group members met to further break down each topic into smaller, more manageable pieces of work. Where necessary, Working Group members tapped subject matter experts to validate the accuracy and completeness of the deliverables.

At the March 2018 monthly meeting, members were asked to report back and describe each activity, program and feature of deliverable category. Consecutive meetings were used to find similar elements, adjacent physical features, and integrated programming that could be grouped together. What transpired from these discussions was a series of bubble diagrams used to map out the inter-related nature of the four categories that cascaded from the three themes of the Conceptual Direction.

In May 2018, the civic groups and larger community reconvened for a recap of the first round of community engagement. This was followed by an update from the Working Group (described later in this section). The larger group broke into three stations to give their comments and feedback on the conceptual direction categories.

In summary, some of the key takeaways of these exercise were:

Regarding the Cultural Landscape

- A. Understanding the "traditional footprint" of the area will inform the types of activities that can occur and where, or more importantly, where not to conduct certain activities or take certain actions. A map of pre-existing walls that was shared with Working Group member Tom Lenchanko by a kūpuna who is no longer living may help to inform this process.
- B. It is important to remember how these lands were utilized. Kūpuna knew that these lands had mana and had demonstrated its success for generations. Thus, it is inherent to the land and similar prosperity will come as a result of similar activities. Understanding the role that the land played in the scheme of things will inform the Plan of its natural carrying capacity.

Regarding Vegetation

- A. As the health of the land is related to the health of its people it's imperative that the land is healed and the adverse impacts that have occurred over time are mitigated. Thus, it is important to have the native forest regeneration component incorporated into the Plan.
- B. The idea of a vegetation continuum also surfaced establishing the importance of everything from native reforestation, useable reforestation, agro-forestry, "dirt farming," demonstration plots, and even high-tech agriculture as well. Native Hawaiian traditional farming practices be incorporated and highlighted where possible.
- C. There was also a push to focus on soil remediation since soil is an endowment for future generations, and in order to have a plan that is holistic, it must consider what is under the ground.



FIGURE 46: Working group two-day session.



FIGURE 47: Working group two-day session.

116

D. The way that Native Hawaiians relate to their environment and how they take care of land and the ecological elements help to define who they are. Thus, the idea of reforestation and agriculture serves as the way to demonstrate and integrate the concepts of protection and education on this particular site. To clarify, it is not the most important thing that will happen there, rather, the most important things shall manifest as byproducts of caring for the ecological and agricultural aspects of the land.

Regarding Education (Learning Center)

- A. Create an official place of entry that would allow for the proper protocol to be conducted including a site orientation; site that enables "Welina" or a purposeful welcome away from the stones that serves as the place where a site interpretation could be conducted. This will allow for undisturbed care and maintenance of the site while still allowing alternative access and education away from the stones. People would meet, park and gather there to begin their experience. There, the elders of the area could interact with visitors, especially the children, to heighten their awareness and overall engagement with the site.
- B. An interpretive center was also highly desired to share the details of the site's history, significance and to tell the stories of the place. It would have multi-disciplinary structures, serve as a "home-base" for stewardship and security, and be the ultimate alternative to visiting the actual stones, thus giving them the option to go "unvisited."
- C. An amphitheater to enable traditional uses, education and performances to occur was also highly recommended. Additionally, multiple (formal/non-formal) spaces serving similar purposes would also be built throughout the property.
- D. All of these spaces would enable meaningful access to the site, support traditional and cultural uses/ engagement with the site, help to manage access, and provide returns on investment that would deliver much of the intention of the OHA's vision and mission statements.

Regarding Revenue Generation

- A. It was more important to refine the scope of work, program, and charter for what needed to happen on the property and why. Until this could be determined, it would be difficult to refine how revenue could be generated on the property in a way that would be appropriate and supportive of the desired social and ecological returns on investment.
- B. The group looked into business models for high-tech agriculture, organic farming and agro-forestry. The group also looked at market and distribution trends, and infrastructure that would be necessary to support them.
- C. Ideas around leasing space for third-party users (schools, etc.), charging visitation fees or requesting donations, establishing strategic and programmatic revenue-based partnerships, and creating retail options on the site were also discussed.



FIGURE 48: Wahiawa Community Meeting #1



FIGURE 49: Wahiawa Community Meeting #1





FIGURE 50: Wahiawa Community Meeting #1



FIGURE 51: Wahiawa Community Meeting #1

JAN 2019



Equipped with this information, KPK went back to the same civic groups and larger community in May 2018 to provide an update of preliminary concepts for feedback. A recap of the first round of community engagement was shared, followed by an update of the Lālā 'Ike Pono a Kūkaniloko Working Group (described later in the report) and three breakout stations depicting the bubble diagrams were made available for the attendees to comment upon.

PHASE 4: MASTER PLAN

The third community meeting was conducted on August 21, 2018 and was the final opportunity for the community to review and comment on the OHA's Conceptual Master Plan recommendations before going before the Board of Trustees on September 6, 2018. The agenda provided a recap of the entire planning process, a presentation of the three zones of planning (Welina, Piko, Kupu) through inspirational images, and list of recommendations going forward. The comments and outcomes from this meeting helped to reinforce the process and direction developed by the Working Group.

CONCEPTUAL PLANNING AND OUTREACH OUTCOMES

With numerous opportunities for outreach and feedback over the last two-and-a-half years, the discussions were rich with interpretation, often philosophical, and more grandiose than this Plan's programs and programming elements could solve for immediately or on its own. As the Working Group and community members were asked to dream big, regardless of funding, they produced a guiding charter for the site, envisioned to be implemented over the next 100 years. The outreach outcomes that rose to the top as priorities are best represented by the vision and narrative below.

VISION

KŪKANILOKO KAʿĀNANIʿAU IS AN ECOSYSTEM OF CONNECTIVITY BETWEEN OUR ʿĀINA AND PEOPLE. THE PIKO FOR THE LĀHUI AND A WAHI KAPU TO HONOR OʻAHU'S ROYAL LINEAGE, KŪKANILOKO WILL INSPIRE AND EDUCATE FUTURE 'ŌIWI LEADERS TO HO'OMANA, HO'ONAʿAUAO, AND HO'OULU 'ĀINA.

Overall, the sentiment for Kūkaniloko is that it be a place of reflection, internalization, inspiration, learning and reawakening. Upon arriving at this wahi kapu, visitors must leave the outside world behind them as they slowly transition into a sacred space of reflection and learning.

GUIDING THEMES

The following Guiding Themes (with high-level description of their intent) were created to further support the vision and be in alignment with the Kumupa'a and supporting principles and guidelines found on page 112.





FIGURE 52: Wahiawa Community Meeting #1



FIGURE 52: Wahiawa Community Meeting #1



1. INTEGRATED PROGRAMMING

As many strands of olonā are woven together to create strong cordage, so shall it apply to the elements of this plan. Though the actions that stem from Hoʻomana, Hoʻonaʻauao, and Hoʻoulu ʿĀina have their own set of strengths and value on their own, when braided together, working as a unit, and integrated with each other, their respective strengths and values are leveraged and exponentially increased. This leveraging is required to deliver the intended returns on investment outlined in this Plan. Thus, the elements of the physical and programmatic functions shall work together as a unit to collectively deliver the desired outcomes. The following statement comes from the Working Group and supports the above narrative:

The three themes of the Plan (Ho'omana, Ho'ona'auao, Ho'oulu 'Āina), as first approved by the OHA's Trustees in 2012, were supported by the Working Group members and other key stakeholders who participated in the ongoing community engagement outreach. For the Working Group, they consistently advocated for protection and education as the priority and then agriculture will follow and support the other two themes. More importantly, all programs shall be integrated with each other as illustrated by the following venn diagram, which like a cross section of a 3-stranded braid is woven together to form a solid core.

2. EDUCATION AND ENGAGEMENT CONTINUUM - 'lewe to Iwi and 'Aumākua: Prenatal to Bones in the Ground and Those in the Ancestral Realm

The concept is that the approach to education shall align with the human life cycle relative to the Earth's life cycle. Human life cycles are relatively short and information gained needs to be transmitted to future generations to understand the lessons learned over time. This has been the way of Native Hawaiians and is integrated with new understanding. This practice assists those going forward to learn from and honor the past, and build upon strong foundations. Thus, generationally integrated education supports a traditional model of learning and integration that will help to grow people, place, food, environment and natural/cultural resources.

There are four philosophies that guide this concept:

- A. Ma Ka Hana Ka 'Ike: To learn by doing and practicing;
- B. A'o Aku, A'o Mai: Reciprocal Learning (Elders, Parents, Children);
- C. Ali'i Grooming: Teaching for leadership based on the place and its history; and
- D. Affirmation: A place where the outcomes of learning are conferred.





FIGURE 54: Integrated Programming Diagram. Image courtesy of The Office of Hawaiian Affairs.

THE FOLLOWING SUPPORTIVE THOUGHTS WERE SHARED BY THE WORKING GROUP:

"Visitors should understand the history of the site and what it means to be Hawaiian; beneficiaries should be able to come here to reinforce what being Hawaiian means to them, walking away with feelings of confidence and self-worth; The place should demonstrate aloha and teach valuebased practices that will encourage people to take what they learned at this piko and go back to their home and practice it wherever they are from. The traditional way of thinking and doing should inspire and reawaken those who visit Kūkaniloko, shift paradigms and compel people to keep coming back for more; through tangible experiences and less obvious method of teaching, Kūkaniloko will be place to gain exposure and hopefully build future leaders who can become certified experts in various disciplines at Kūkaniloko.[sic]"

3. HUB AND SPOKE FUNCTIONALITY

Just as the OHA cannot and does not accomplish its vision and mission on its own, nor shall this site. Rather, it is envisioned to become a hub or "piko" in alignment with its geological position, historic use and significance. This piko is envisioned to connect to other efforts on O'ahu and across the pae 'āina to bridge movements and leverage resources and initiatives to implement meaningful action.

Supportive thoughts from the Working Group include: The spirit of Kūkaniloko lives on through this hub and spoke model to illustrate the relationship that Kūkaniloko should have across Oʻahu and the pae 'āina. The idea here is that people will come to Kūkaniloko to gain knowledge and experience, and then take that 'ike back to their moku, ahupua'a, and 'ili to educate and expand its reach.



For example, stewards working to protect and maintain other important wahi pana across the state and other aligned efforts include the Hawaiian Civic Club of Wahiawā, Kōkua Kalihi Valley and Protect Kahoʻolawe ʻOhana. These caretakers and other sites (such as Kūpōpolo Heiau, Waimea Valley and the Laʻilaʻi Stone) can be sources of inspiration and collaboration for future efforts to deliver the programmatic functions discussed in this plan.

The mana'o expressed below by Tom Lenchanko of the Working Group articulates the goal to restablish the cheifly center at Kūkaniloko to build future leaders:

"Kūkaniloko would be a place to get exposure to some of the things being shared in the plan and could serve as an example of what could happen in your respective places. All you have to do is come here, get a ticket, and go on the journey. It might not just be one day, it could be a lifetime. We are giving dreams to people who want to know/learn about Hawaiʻi. Experts in every field will be waiting here to train the future leaders of our nation. Come and get certified at Kūkaniloko." - Tom Lenchanko

4. VEGETATION CONTINUUM

Diverse vegetation functions are critical to the concept of the vegetation continuum. It encompasses all of the ecological and agricultural functions that align with this Plan. People's interaction with the continuum will allow them to experience the educational aspects of the Plan, which will simultaneously enable the realization of the protective elements. Additionally, components of the vegetation continuum have the potential to be a promising business model for the OHA to consider. The vegetation continuum aligns with the visions and goals of the proposed programmatic uses at Kūkaniloko.

CONCEPTUAL GOALS

With a kumupa'a to build from, the Conceptual Master Plan embodies mana, aloha and traditional views through three major conceptual goals with their accompanying recommendations for programming or further actions. The names for the concaptual goals were created by Working Group member Jonah La'akapu Lenchanko referencing the site, stone and place name.

HO'OMANA

Protect the Birthing Stones by managing access, passing on the stories of people and place, and increasing meaningful connections between kānaka and 'āina through education, interaction and stewardship of the land informed by kūpuna.

Access management recommendations include:

> Creating a "home base" from which community-based stewards and security can operate. Community-based leadership and stewardship will be a key component of protecting and bringing reverence to the site.



- Educating community and visitors about the place, how to behave while visiting, and require them to be escorted by a docent or approved individual/group.
- Ensure access for practioners (individuals/groups), those with established kuleana, and those with familial connections to the site.
- Create onsite alternative access locations to facilitate learning about the site without actually visiting the stones to limit access for cultural purposes.

Kukui Maunakea-Forth explains the sanctification of Kūkaniloko and its value as a spiritual piko for Hawaiians across the pae 'āina.

"I might not be able to walk the land with my kūpuna. It will be different, new land. The moʻokūʻauhau will never leave that land, even though it's transformed. It's the same principle. You cannot ratchet it out of its function as a piko. What it catalyzes in Wai'anae is amazing and I may never step foot on this site again, but I get it. I get why I have to do my work at home. That's what that site offers me, just knowing it's there. Knowing its place in my spiritual universe as my piko. I get it and then I can go do my work. And how many people are looking for that, kanaka or not?" - Kukui Maunakea-Forth

INVASIVE SPECIES CONTROL AND SOIL REMEDIATION

Clearing the land of invasive species is a vital first step to regenerating the soil of Kūkaniloko. This will ensure that the historical adverse impacts of growing pineapple are mitigated and the soil can provide for future generations.

NATIVE OUT-PLANTING AND INTERACTIONS

By restoring and regenerating a Native ecosystem and engaging the site in traditional and familiar ways, the mana of the land will present itself more directly in a way that can be experienced by those who are doing the work. A natural balance and symbiosis is anticipated and will help to further enhance the programmatic recommendations proposed in this Plan.

THE CULTURAL LANDSCAPE AND TRADITIONAL FOOTPRINT

To validate the cultural landscape and the precise location of wall features described by Tom Lenchanko, it is recommended that the site be entirely grubbed and the land traversed by foot. The outcome of this process will be to unveil the walls and determine the kapu areas and other traditional and customary functional areas. It is recommended that this occur prior to finalizing the location of any of the infrastructure that is being proposed for the site. Other priorities include managing access, maintaining view planes and open space, and honoring the traditional footprint.

"The enclosure of the walls gives us the footprint and where we need to go. We need to reestablish the footprint to understand where and who we are. Within the site there are some smaller 5-10 acre parcels. We need to pray, walk, sleep it. The land will tell us the story. I know it will take a lot of time,



but this is a forever project. Hawaiians are the endangered species and this is the footprint for how we can get back to the land." - Tom Lenchanko

REGULAR AND MEANINGFUL TRADITIONAL AND CULTURAL ENGAGEMENT

One of the ways to honor the site and treat it with reverence is to engage it from the perspective that it is sacred. The OHA's beneficiaries and others who engage in traditional and cultural practices do so with protocols and actions that demonstrate this reverence in ways that interact with the seen and unseen.

HO'ONA'AUAO

The second conceptual goal expressed throughout the community engagement process is the cultural education and hands-on learning that all programs at Kūkaniloko shall uphold.

KA PIKO

Kūkaniloko represents a physical piko of the island and the birthplace of Oʻahu's most renowed aliʻi. As such, the value of Kūkaniloko for the pae ʻāina is as a gathering place for education, training and launa. Kūkaniloko will be a central location to share and perpetuate the history, genealogy, moʻolelo, place names, and knowledge of other wahi kapu in surrounding ahupuaʻa.

THE SYMBIOTIC AND INTERGENERATIONAL EDUCATION CONTINUUM

From 'iewe to iwi, this site will bring people into the world and return them to their ancestors. It will ensure that kūpuna and mākua are integrated with the keiki who can learn valuable skills and 'ike from elders during volunteerism or "ask a kupuna" formats. Piko Listening Journeys, docent training, protocol and other programs will create a space for welcoming, cleansing, and learning.

A PLACE FOR FORMAL ENTRY AND EXPERIENCE

This area will include an 'īpuka to symbolize the entrance and exit so visitors feel the flow of mana expressed throughout the site. The 'īpuka doesn't have to be a permanent physical feature, but rather a space that instills and reawakens the spirit within, and creates a kahua for connecting in both informal and formal ways.

"You have to think of Kūkaniloko in three levels – the physical, metaphysical and esoteric. The physical would be the actual place, the metaphysical is all of our intention and attention (i.e., ali'i grooming; stories;) and the esoteric happens because the first thing we need to do is to physically get on the land and then let things grow as we feel it. The land and placement is based on what felt good to us. Let our kūpuna talk to us." - Jo-lin Lenchanko Kalimapau

KUHIKUHI PU'UONE

LEADERSHIP TRAINING

The goal here is enlightenment with a truly Hawaiian perspective, but balanced with Western sciences, to certify 'ōiwi leaders, and others, who can take the 'ike gained onsite and go back into their own schools and communities.

In the spirit of Ma'ilikūkahi's legacy:

"This is about creating leaders. This is the place to strengthen our lāhui through leaders who are going to go back home. Not go back to the mainland. They want to come home. Aloha is the youth. Aloha 'Āina is the way." - Kukui Maunakea-Forth

PHYSICAL NEEDS

Potential physical needs for this project may include, but are limited to, the following:

- » Multi-functional spaces (hālau practice areas, assembly space for community events);
- » Planetarium (outdoor observatory, potential indoor facility);
- » Outdoor classrooms and amphitheater;
- » Food gardens / lā'au lapa'au (medicinal plants);
- » Certified kitchen (area to preprare cooked and/or packaged foods);
- » Maoli Market (commerce facility for farmers, makers, artisans and practitioners);
- » Overnight facilities (possible future temporary lodging facilities for healing);
- » Healing spaces (physical/medicinal and spiritual healing facilities); and
- » Cultural learning spaces (places to learn and practice protocol, as well as a venue to train and certify future ali'i).

These functions can be designed to occur in specific places or spread throughout the property in generically labeled areas or "nodes."

Collaboration with strategic and programmatic partners such as schools like Pūnana Leo, Kamehameha Schools, UH, Kamalani Academy and others who utilize 'āina-based institutional constructs to provide opportunities for internships and on-site learning experiences should be considered to implement various elements of the Plan.

HO'OULU 'ĀINA

The third and final conceptual goal of programming, the growing of food, people, and things that serve the needs of the 'āina and kānaka, are expressed in the idea of Ho'oulu 'Āina. Agriculture is the way that many understand this concept in contemporary society, however, it does not fully represent the type of growing that should be experienced at this property. In this case, the Hawaiian ideology shall take precedence as



expressed by the phrase, "Healthy lands healthy people." With this in mind, the priority will be to nurture the land, soil, vegetation and people; crop choices, agrarian methodologies, vegetation deployment will ensure that management actions are planned and implemented accordingly. The land must be cleared, the soil remediated, native forest restored, and a vegetation continuum implemented, with a focus on growing traditional food, medicine, and utilitarian items supported by other crops, methods, and practices.

THE VEGETATION CONTINUUM

The Vegetation Continuum was a guiding vision throughout the planning process to describe the application of Hoʻoulu ʿĀina. The Continuum utilizes an approach that considers the full-spectrum of vegetation planting strategies. These strategies will address the many needs of the environment while providing options for agricultural production and a variety of programmatic uses. One of the benefits of this holistic approach is that it allows a myriad of conservation and programmatic functions to be integrated into an agricultural model. This integration increases the potential output value of the overall project based on the form and function of the vegetative development of the property and promotes learning opportunities.

The following narrative has been provided by the Working Group to describe what is envisioned for the site: "By creating a diverse ecosystem at Kūkaniloko, the watershed will be restored through the reforestation of native trees, which in turn feeds the understory below and ultimately feeds our lāhui."

The Working Group has recommended a list of species and crops outlined in the Vegetation Continuum section. The full list of plant species was provided by Rick Barboza of Hui Kū Maoli Ola, and can be found in Appendix M.

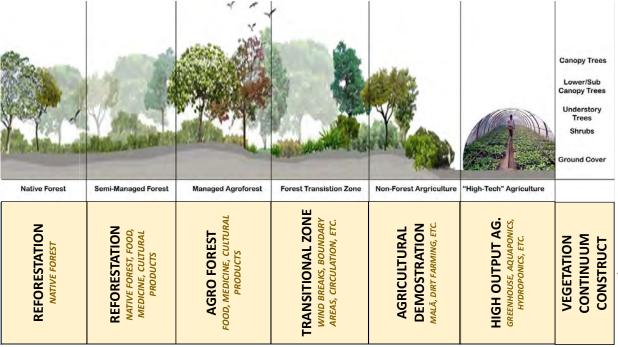


FIGURE 55: Vegetation Continuum Diagram. Image courtesy of Working Group member Susan Crow, PhD.

KUHIKUHI PU'UONE

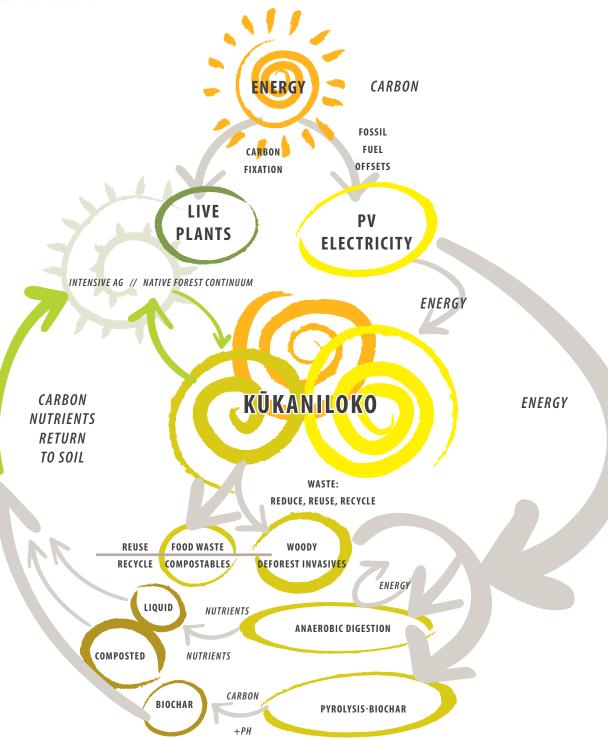


- Purpose: It is recommended that native trees be planted early to re-create a forest so that the holistic process of restoring the ecosystem, watershed, and soil health can commence. This portion of the Vegetation Continuum addresses ecological impact mitigation stemming from over a century of human-driven change. It also creates an environment that will: help to bring a true sense of place to the property; serve as a marker for significant locations within the property; allow for diversified programmatic and cultural uses; and indicate buffered areas around the Birthing Stones and other areas as specified on the property. This portion contributes to ecological regeneration and creates overarching vegetated points of interest that will initially be unique to Wahiawā.
- Timing: It is understood that significant time will be required to shift the environmental state from an overgrown grassland back into a forest (a feat that would take decades to naturally occur). Thus, it is recommended that efforts involving the growth of trees for reforestation or agriculture begin as soon as possible based on an overall planting plan and the availability of water.
- Crop-Mix: While there was discussion about a variety of tree species, 'iliahi was commonly suggested to be used for the dense and primary canopy as it is known to be the primary canopy species of the area in historic times. Other native plants will be identified in a planting plan that may include: koa; 'ōhi'a lehua; lama; 'ohe; and other species that are determined to be appropriate for the site.
- Management Needs: Once established, it is envisioned that these sections of vegetation will require lower maintenance and remain in a state akin to "the wild." Further, the seed bank provided by this native forest could be used to help repopulate other portions of this property and other areas across the island. The OHA should anticipate moderate development, maintenance, and management requirements in the establishment of the native reforestation portions of the Vegetation Continuum.

NATIVE-FOOD FOREST

- Purpose: This portion of the Continuum is described as a semi-managed forest that incorporates native forest with native foods, medicine and cultural products for traditional and cultural practices, use, market and other aligned uses. As people walk through the Vegetation Continuum, they will start to recognize the food crops with medicinal plants dispersed throughout.
- An example of this type of forestry can be seen at Pu'u O Hoku Ranch on Moloka'i which is home to a family-owned biodynamic and organic ranch and farm. The farm produces certified biodynamic and organic dried bananas, fresh frozen Hawaiian 'awa root, honey, and a wide variety of other fresh fruits and vegetables.
- Timing: This section of the Continuum should also occur as early as possible in the planting process to help establish the canopy trees in association with an overall planting plan, the availability of water, and the capacity to build-out, manage and maintain any required elements.
- Crop-Mix: 'Ulu is a species that was highly recommended as a potential canopy tree that can start

The following recommendation came from Working Group to find a culturally appropriation way to handle soil remediation and how to manage the maintenance and continuum.



KUHIKUHI PU'UONE



- to proliferate in this section of the Continuum. Other crops may include uhi, mai'a, 'awa, 'ōlena, and others that align with the function of this portion of the Continuum. For a complete list of other recommendations that were shared, please see Appendix M of this document.
- Management Needs: This section would be somewhat akin to "the wild" but contain a bit more structure, requiring more maintenance to water and harvest food crops than the Native Reforestation section of the Continuum. The OHA should anticipate moderate development, maintenance and management requirements in the establishment of the native-food forest portions of the Vegetation Continuum.

AGROFORESTRY

- *Purpose:* The agroforestry portion is the area is designated for the growth of food, medicine, cultural products, and vegetation that supports a holistic approach to growing plants in a formal manner. The goal of this section in the Vegetation Continuum is to ensure that there is not only rapid growth for the fast revival of carbon, but also production of plants that can be utilized for income generation (food, wood, etc.) as well as for medicinal and educational purposes.
- There may be fenced areas to keep pests and trepassers out, and they will be designed to be woven into their surroundings so that it will still feel like a natural environment. To understand the composition of a food forest, the Working Group referred again to Pu'u O Hoku Ranch as an example. Pu'u O Hoku Ranch allows their cattle to roam over grass pastures and employs careful field rotation to ensure good grazing practices that replicate natural herd movement. By moving the cows frequently, plants have a chance to regrow, which prevents erosion and combats invasive weed species.
- Timing: Moving this forward will be dependent on an overall planting plan, the availability of water, and the capacity to build-out, manage and maintain any required elements.
- Crop-Mix: Types of crops found in the managed agroforest area would include canopy of 'ulu, a subcanopy of mai'a, shrubs of 'awa beneath and ground cover of kalo, 'ōlena, ginger, and other crops that align with the goals of this portion of the Continuum.
- Management Needs: This is an area that incorporates structured agroforestry planting strategies and would require a level of management that is consistent with agroforestry standards. The OHA should anticipate higher development, maintenance and management requirements in the establishment of the agroforestry portions of the Vegetation Continuum.

DEMONSTRATION PLOTS

This portion of the Vegetation Continuum provides a venue to demonstrate various agricultural methodologies that are aligned with the Plan. An opportunity exists within the demonstration section of the Vegetation Continuum to grow food, medicine and other products, and show visitors (and the community) specific details of those demonstrations first-hand.

- » Purpose: This area is envisioned to include agricultural planting demonstrations that may consist of a variety of crops that are not necessarily configured in the construct of a forest. In demonstration areas, the focus is to enable food, medicine, and utilitarian product production strategies that are "enterprise-minded" and function in a fiscally responsible manner that is economically and environmentally sustainable. MA'O Farms is a successful model for this portion of the Vegetation Continuum, where some heavy food production is carried out. Focusing on the production aspect of culturally-aligned agriculture will highlight pono practices to contribute to the cultivation of healthy lands and communities.
- » *Timing:* This can move forward with an overall planting plan, the availability of water, and the capacity to build-out, manage and maintain any required elements.
- » *Crop-Mix:* Examples of crop mixes include garden/agricultural areas with mai'a, kalo, greens, vines, controlled row crops, and other aligned species.
- » Management Needs: This is an area that incorporates structured diversified planting strategies and would require a level of management that is consistent with the associated agricultural standards. The OHA should anticipate higher development, maintenance and management requirements in the establishment of the demonstration plot portions of the Vegetation Continuum.

HIGH-TECH AG

- » *Purpose:* The high-tech agricultural portion of the Continuum incorporates the use of best-science agricultural methodologies and significant technological components to enable efficient production of food, medicine and other plant materials. Examples include hydroponics, aquaponics, and green house cultivation.
- » Timing: This can move forward with an overall planting plan, the availability of water, and the capacity to keep up with any management requirements. It is anticipated that the area of the 511-acre property near the Karston-Thott bridge could be a good candidate for early development of this portion of the Continuum. It will be dependent on an overall planting plan, water availability and the capacity to build-out, secure and maintain any required elements.
- » *Crop-Mix:* Crops such as lettuce, tomato, cucumber, bell pepper, eggplant and microgreens are recommended as high-margin crops to grow in greenhouses. May's Wonder Garden on the North Shore was noted for their high-volume of local greens and great potential to produce food with a tight nutrient cycle. Honey is also a high-yield item that was suggested by the Working Group members, in addition to aquaculture with shrimp, tilapia and lettuce.
- » Management Needs: Many of these systems have large up-front costs and lower maintenance requirements when compared to demonstration plots. This area requires a lot of infrastructure, planning, permitting, and construction of more complex agricultural systems, and intensive management of those systems, their needs, and their outputs. The OHA should anticipate higher



development, maintenance and management requirements in the establishment of the high-tech ag portions of the Vegetation Continuum.

MANAGING THE VEGETATION CONTINUUM AS A SUSTAINABLE ECOSYSTEM

Ecosystems can be defined as a community of organisms interacting with their environment and functioning together as a system linked by flows of energy, carbon and nutrients. Healthy, well-functioning agricultural ecosystems are self-sustaining and contribute to resilience in the landscape which people depend on for food and other products. After the land is cleared of invasive species, flows of energy, carbon and nutrients can create a sustainable ecosystem to achieve soil remediation and enable management of the Vegetation Continuum in a culturally-appropriate and holistic way. Working Group member Susan Crow described how management of Kūkaniloko can be healthy, sustainable and resilient by adopting the system illustrated in Figure 56.

In this cyclical process, solar energy drives the system. Energy may be transformed to electricity using photo-voltaic systems integrated into the infrastructure of the site. Simultaneously, the sun powers photosynthesis by plants that draw carbon down from the atmosphere and fix it into plant biomass across the food-forest continuum. Both processes result in climate change mitigation, the former through the avoided fossil fuel-derived emissions typically associated with electricity production in Hawai'i, the latter through sequestration in soil carbon and other pathways that ensure carbon does not get released back to the atmosphere and reduces other greenhouse gas emissions. The waste stream on site shall be reduced, reused and recycled for materials and nutrients, when possible. Compostable materials, combined with agricultural residues and waste, woody biomass from trimming and invasive species removal, can go into compost piles, an anaerobic digester, and/or through pyrolysis. Each of these transform waste into energy and/or produces soil amendments that can go back into the agricultural practices across the Continuum. Generated electricity can be used to power an electric vehicle for travel about the grounds.

An opportunity exists within the demonstration side of the food-forest Continuum to show visitors firsthand how the soil amendments generated on site, or locally, feed back into the production system. First, high tech greenhouses have high yields but small carbon and energy footprints. Aquaponics and hydroponics can demonstrate food production and the importance of highly efficient nutrient and water use. Through the soil amendment generated on site from compost, anaerobic digester, and pyrolysis long-term treatment plots can be established. These could contain a few rows of sweet potato compost, fish bone meal, biochar and combinations plots. Plots could also demonstrate effects of changing climates and deficit irrigation to show drought. Maintenance of these long-term experiments could be supported by students for real life, hands-on education. For instance, students can run different tests on soil nutrients, greenhouse gas fluxes, water quality, yields, etc. Students can also learn about precision irrigation by building a network of sensors that communicate (in real time) gas flux, soil moisture, temperature changes that signal the irrigation to turn on, etc. These are just some demonstration ideas. These agricultural demonstrations, and investment in the long-term maintenance, can provide a basis for education, activities, and STEM grants that might attract financial support and provide education opportunities for youth and college students.









CONCEPTUAL PLAN

KUHIKUHI PU'UONE

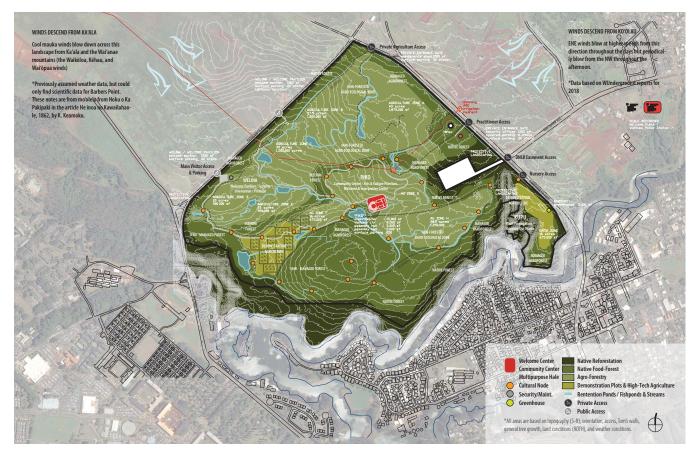


FIGURE 57: OHA's Wahiawā Lands Conceptual Site Plan

DESIGN NARRATIVE

COMMUNITY CONCEPT

The OHA Wahiawā Lands Conceptual Master Plan aspires to create a place of intimacy between 'āina and kānaka. Communal spaces play an important role in the success of a city and its inhabitants. They become the foundation to which those living and visiting in the area come together and communicate. They offer opportunities to embrace the history and culture of the area and bring the community together using the common bonds of life, food and culture. This Conceptual Master Plan focuses on embracing the history and culture of Wahiawā by bringing the community together through regeneration of the land, food security, cultural education and the design of desirable spaces. Planning with a purpose to create a sense of community will help to leverage the holistic value of the land, its natural and cultural resources, and its rich history.



WELINA ZONE

Visitors will be able to enjoy the park/open space qualities of this portion of the property, and participate in cultural site programming as well as community events. They will be able to learn about the rich culture and history of the area through the use of the welcome pavilion located at the site entrance off of Kamananui Road (current master plan shows two possible entrances to the site). Here, visitors and locals alike will be introduced to the historic events of the site in relation to Kūkaniloko, as well as to proper protocol and behavior on site.

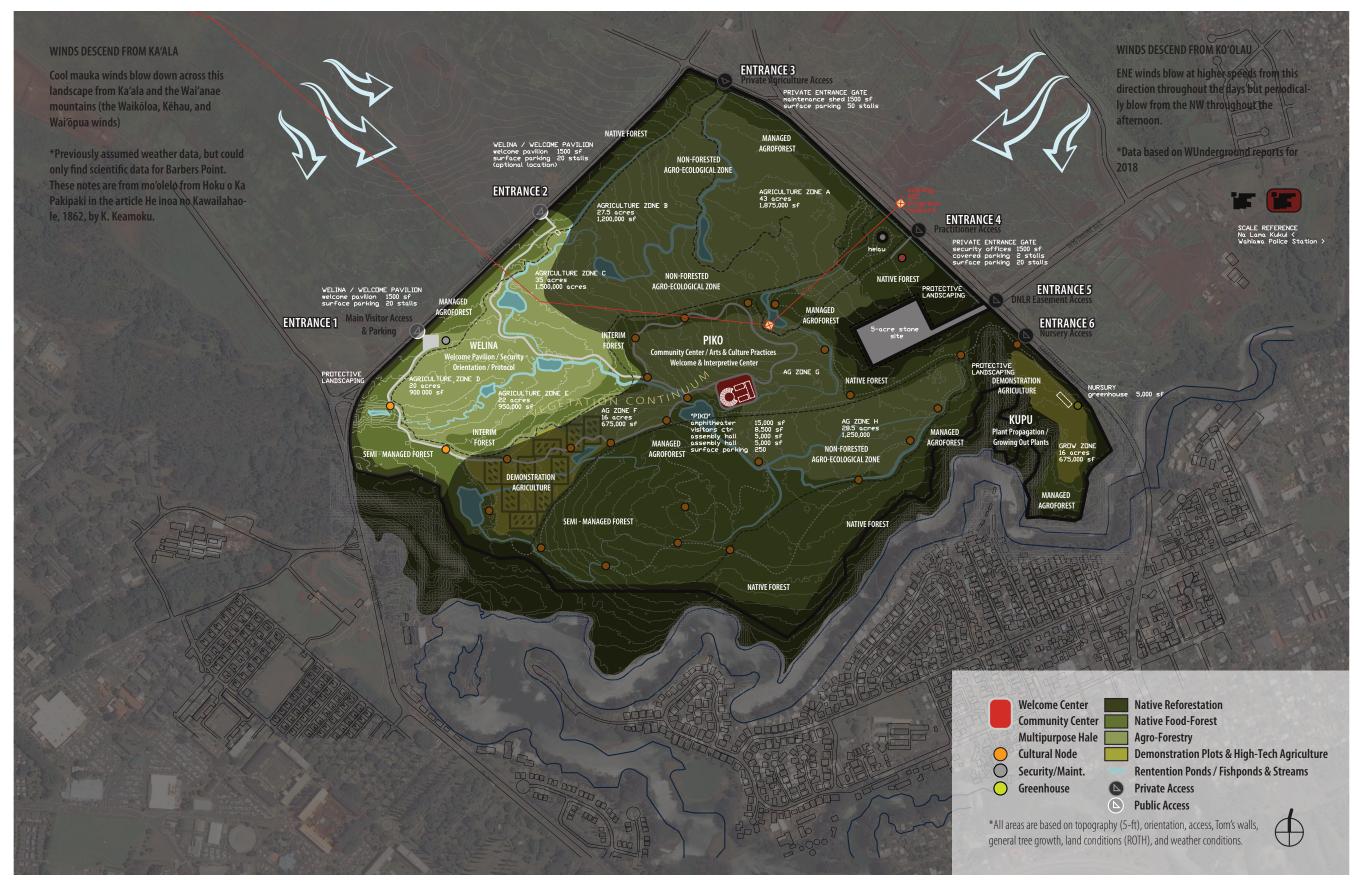
Figure 59 illustrates the main access points to the site and vehicular connectors within the 511-acre parcel. The main meandering street/road will act as the vehicular connector for drop-off, loading and emergency vehicle access. All vehicular paths shall connect to the pedestrian spaces. Kamananui Road on the west side will bring visitors and people from the surrounding areas into the site, as will four private entrances on Kamehameha Highway on the east side of the site. Entrance 3 is for agricultural use only. Entrance 4 is for practitioner and security access. The current easement access at Entrance 5 to the 5-acre parcel will remain, however the main entrance to the site will be on Kamananui Drive. Smaller streets/roads on the site will be designed in a way to focus more on pedestrians and less on vehicles while still providing adequate vehicular circulation.

The following images are examples of architectural designs that provide an understanding of what the Working Group had described. These images provide a visual of the various levels of material finishes and aesthetics. These are in no way an exact depiction of what the OHA will choose to do, and are included for illustrative purposes only.





FIGURE 58: Welcome Pavilion concept images







PIKO ZONE

Open spaces play a large role in the design of this Plan as they become the backbone to embracing the culture and rich history in the area. There are multiple open spaces surrounding the site. Adding a large space that will act as a central hub will be beneficial in creating a sense of community and place for the area. The large open space onsite will provide adequate room for programmatic activities, community and public events, and to a degree, for recreation and leisure. It will act as a greenway from the 5-acre birthing stone parcel to the communal areas of the "piko" corridor. The "piko" corridor, as illustrated by the light green in the middle of the property, will embrace sustainability and will focus on pedestrians rather than vehicles.

The area closest to Entrance 1 on Figure 60 is labeled as the Welcome and Interpretive Center and will house spaces that bring visitors into one area and will provide numerous activities and events to engage the community, incorporating layers of cultural history and diversity. Adding a community center onsite and programming a calendar of events for the space will benefit those living in the area and those visiting for specified purposes and events. Amenities such as targeted use spaces, and gathering and meeting spaces, will create a place for the OHA's beneficiaries and the community to engage. These types of spaces could be reserved for civic and community use.

An outdoor amphitheater space attached to the south end of the community center could accommodate approximately 250-300 people. When not being used for communal events, the space can act as a large open park space for numerous programmatic activities. The center space could be easily converted to a "deck-like" space, outfitted with tables and seating to provide shade and relaxation. All multipurpose spaces will be designed to be flexible to enable diversified uses with minimal effort by staff and management. The following images are examples of architectural designs that provide an understanding of what the Working Group had described. These images provide a visual of the various levels of material finishes and aesthetic. These are not an exact depiction of what the OHA will choose to construct, and are included for illustrative purposes only.





FIGURE 61: The Welcome and Interpretive Center concept images

KUPU ZONE

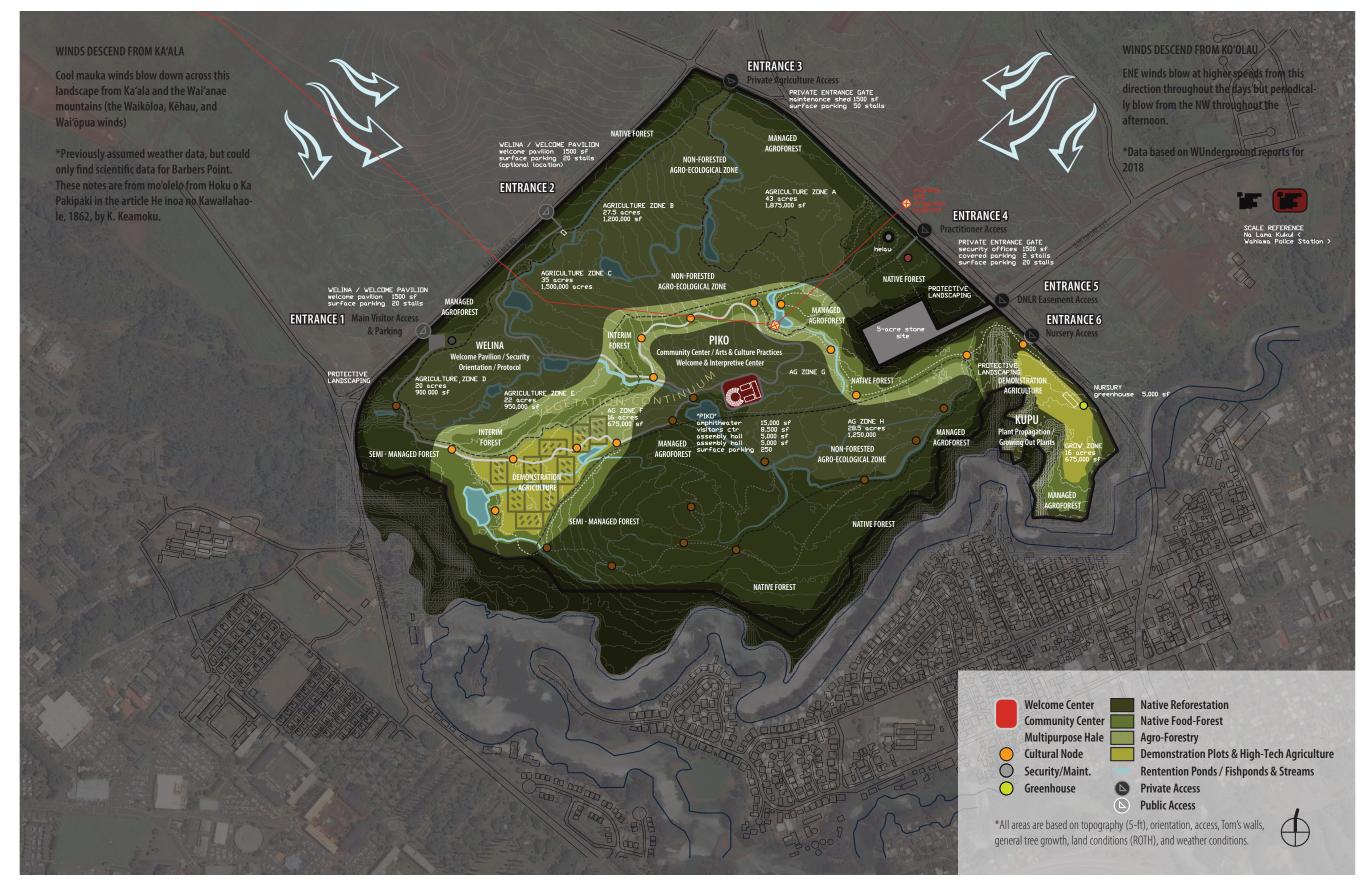
The Kupu Zone houses the Vegetation Continuum, which creates a cycle of planting that begins at the nursery site and works its way to the edges of the agroforest. The Kupu Zone, or "growth area" will house several freestanding greenhouses. Freestanding greenhouses are separate structures; they can be set apart from other buildings to get more sun and can be made as large or small as desired. The greenhouses should be located where they can receive maximum sunlight. The recommended location is labeled "Nursery" and is found on the south or southeast side of the site (near Entrance 6) away from large shade trees. Should the option for "all-day-long" direct sun exposure not be feasible, morning sunlight on the east side or afternoon sunlight on the west side may suffice. As guests enter the site from the main visitor access point, they traverse into the Welina Zone followed by a series of demonstration plots that begin with the light green area on the bottom of Figure 63 labeled "Semi-Managed Forest." This area will have plants growing at all stages of their development. Native plant species for food and medicine, and for utilitarian purposes, can be paired with cultural education programming and monitored throughout their life cycle. Plant species should be diversified and rotated to help understand how different crops grow in this area s unique conditions. It is envisioned that these areas serve as active education sites. Interested partners and participants such as schools and community organizations could develop a sense of stewardship with active involvement by clearing and planning, but also by committing to help further develop future actions and partnerships.

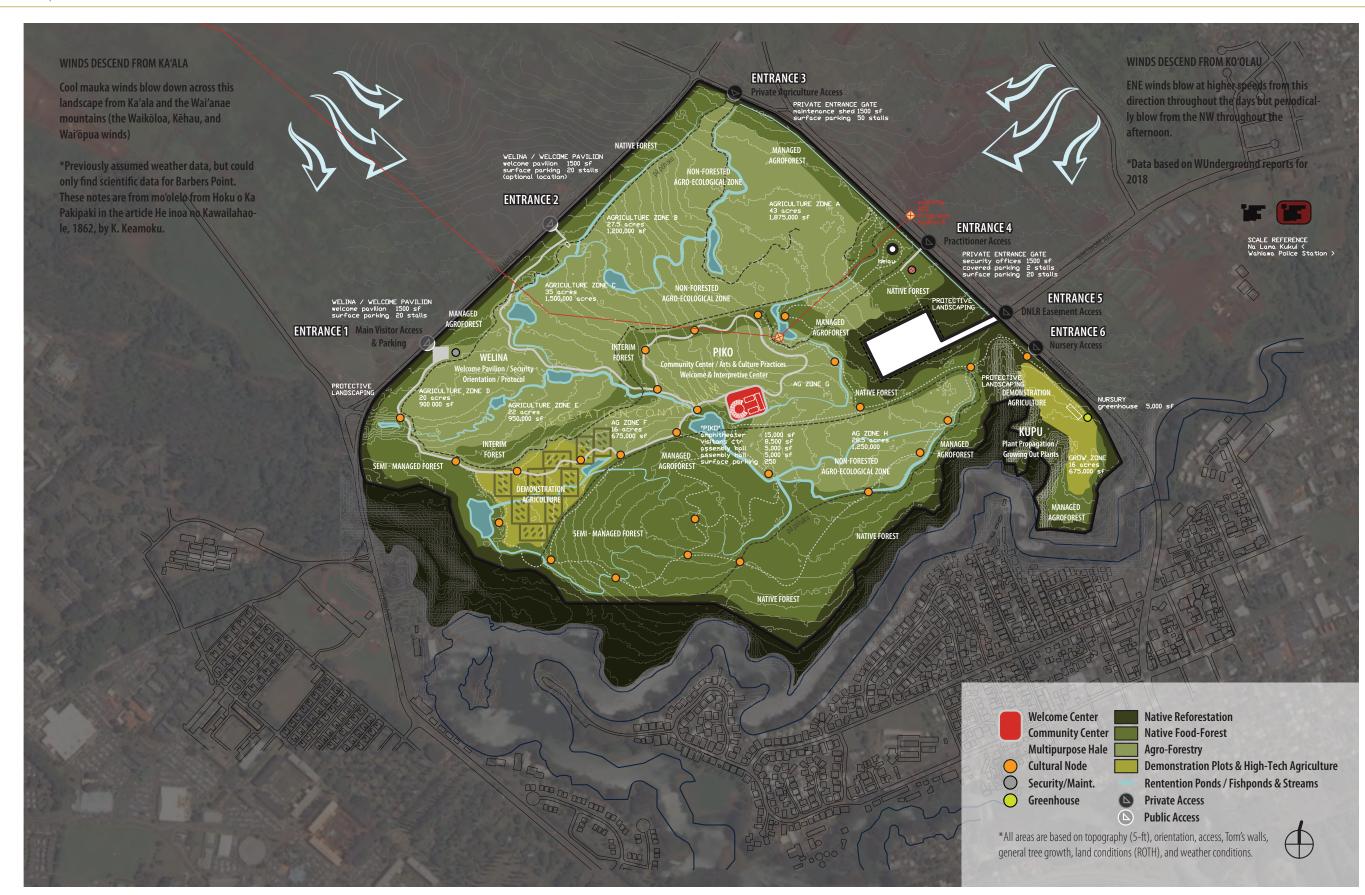






FIGURE 62: Kupu/Nursery concept images







DRAFT DESIGN GUIDELINES

PREFACE

The intent of these Design Guidelines ("Guidelines") is to establish aesthetic and programmatic parameters for all new construction, building additions, associated improvements, landscaping and site work at the OHA Wahiawā Lands at Kūkaniloko. These Guidelines help to ensure that the OHA is:

- » Honoring, perpetuating and preserving the rich cultural and architectural history of Hawai'i.
- » Consistently using materials and methods compatible with the culture, history and environment of Wahiawā.
- » Establishing visual and environmental harmony of the developed and natural environments.
- » Using pono sustainable practices to ensure abundance for future generations.

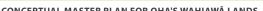


FIGURE 65: 'Ōiwi land stewardship and crop production painting by kānaka maoli artist Solomon Enos.

It is recommended that all new structures, modifications to existing structures, and site/landscaping improvements must be reviewed and approved by an OHA-designated group that could be called the OHA Design Review Committee ("ODRC") in accordance with procedures presented in this section. Guidelines may be amended from time to time. In the event of a conflict or discrepancy in the Guidelines, the OHA shall review and make changes accordingly.

It is the OHA's responsibility to obtain and comply with the most current Guidelines. In addition to the Guidelines, the OHA and their future consultants are required to comply with all applicable codes and permits for the State of Hawai'i and the City and County of Honolulu.

The ODRC shall reserve the right to approve or deny design proposals based on the proposal's support of the Vision referred to on pg 122, regardless of design proposal compliance to certain sections of the Guidelines. These Design Guidelines are to be considered a working document, the OHA can add information to it at any given time.



1. ADMINISTRATIVE PROCESS

DESIGN REVIEW

The goal of the Design Review is to establish objectives for property development and to ensure such development is keeping with the spirit and intent of the Guidelines. Design Review for the Conceptual Master Plan involves meetings between the OHA, consultant(s) and the ODRC. Meeting tasks may include answering and asking questions, establishing a chain of communication, reviewing design submittals and observing construction progress to ensure adherence to the Guidelines. The ODRC is committed to assisting design consultant(s) through this process.

All development shall be submitted and reviewed by the ODRC, ensuring proposed designs are compatible with the intent of the Conceptual Master Plan. Design Review is mandatory for any improvement, including but not limited to new construction, renovation or expansion of existing structures, addition of fences or enclosure structures, and site or landscape improvements.

Interpretation of Guidelines is at the sole discretion of ODRC and evaluation of all development proposals will be based on these standards. It is the intention of Design Review to ensure that all improvements comply with building standards of the guidelines.

OHA Design Review Process will proceed along the following manner:

- **Preliminary Meetings**
- Initial Design Reviews
- Final Design Approvals
- Construction Observation

It is recommended that OHA retain professional assistance from a state-licensed architect, civil engineer, landscape architect, soil engineer and a licensed and bonded contractor (consultants) as appropriate. The OHA and consultant(s) shall carefully review local building codes and Design Guidelines prior to commencing with Design Reviews.

Upon receipt of any final design approvals from the ODRC, the OHA will be subject to approval requirements of the City and County of Honolulu Department of Planning and Permitting, and to obtaining design approvals and any other building or discretionary permits.



2. OHA DESIGN REVIEW COMMITTEE (ODRC)

I. OUALIFICATIONS

The ODRC shall be comprised of members of the OHA with relevant experience and expertise. This may include a member of the BOT, administrators within the OHA organization, as well as any OHA staff with the requisite knowledge and experience to consult on design decision-making.

The ODRC may contract and/or assign the ODRC's administrative duties (but not authority) to any qualified third-party design professional as needed.

3. CONSTRUCTION PROCESS

DUE DILIGENCE REPORT AND CULTURAL CONSULTING GROUP

It is recommended that a due diligence process for construction and surveying be created, and that a sub-group or individual is assigned to ensure that culture is integrated into the construction process. Duties shall include, but are not limited to, site observation, preparation, understanding the site and proposed construction processes, and coordinating with a cultural consulting group.

II. CONSTRUCTION ACCESS

Access to construction sites need to be controlled to minimize impacts to the property or to neighboring properties, and will require the Contractor and their employees to comply with the following:

- Contractor vehicles entering the site must be clearly marked, identifying the Contractor's name and job site.
- Access to the construction area is limited to designated routes and gates as specified by the ODRC.
- Consolidate deliveries of materials and equipment, minimizing impacts to the areas surrounding the site.
- Enforce hours of access, speed limits and route of travel on Wahiawā road systems as specified by the ODRC.

Contractors shall ensure that only vehicles, equipment and machinery essential to their construction activities may access and remain on property and/or within the construction area or other specified area(s) designated by the ODRC, minimizing potential damage to the property, to existing native or desirable vegetation, and to sacred sites.

III. HOURS OF CONSTRUCTION

Hours of construction shall be limited to the periods as determined by the OHA or their designee. No personnel will be allowed to remain at the construction site after working hours.





FIGURE 65: Example of vegetation debris used for composting

IV. DEBRIS AND TRASH REMOVAL

Construction sites must be kept neat and tidy preventing them from becoming a public eyesore from affecting adjacent lots. Contractors must clean up all trash and debris on construction sites at the end of each day. All trash and debris must be removed from construction sites at least once a week and transported to an authorized disposal site. Any lightweight materials, packaging and other items must be covered or weighted down to prevent any material from being blown off of the construction site or property. Dumping, burying or burning trash anywhere on site will be prohibited. Dirt, mud or vegetation debris resulting from land clearing and grading must be promptly addressed by the contractor as agreed upon with the OHA or the OHA's designee. If vegetation debris is utilized on site for composting and soil regeneration, a new action plan shall be proposed by the contractor and approved by the OHA in writing to inform the appropriate guidelines and procedures by which to adhere thereafter.

V. EXCAVATION AND GRADING

The contractor shall control all dust resulting from grading and construction operations by a method approved by the OHA in writing. Erosion on exposed, cut and/or fill slopes shall be minimized through proper soil stabilization, water control and re-vegetation. Contractor is responsible for implementation of erosion control techniques, and grading operations may be suspended by the OHA during periods of heavy rains or high winds.

All topsoil disturbed by grading operations must be stockpiled and covered, minimizing dispersion within construction area(s) and throughout the property. It is recommended that any topsoil be reused as part of site restoration/landscaping plans. Fill or topsoil materials brought to the site by the OHA or their contractor(s) shall be free of clay, termites and deleterious matter.



VI. FOUNDATIONS

It is highly recommended that the OHA utilize the services of a licensed soil engineer to examine and test the soil conditions of the 511 acres prior to undertaking any design or construction. If the 5-acre Kūkaniloko parcel is integrated into the Plan, the OHA should also take steps to include testing on this portion of the site.

VII. GROUND TERMITE STANDARDS

Ground termite treatment shall be provided for all soil under concrete slab-on-grade and under all building floors, whether on ground or over air space, and under all footings and masonry foundation walls. Termite treatment shall be guaranteed in writing by said company against termite infestation. If needed, chemicals used outside of the structure or in accessible spaces under the structure, shall be applied in a safe manner mitigating exposure to humans, plants and pets.

VIII.LOT SURVEY

Prior to commencement of design, it is the responsibility of the OHA to obtain a survey by a surveyor licensed in the State of Hawai'i. The surveyor would need to verify all pad grades, tops and toes of slope, edges of any new retention ponds, and any other features or attributes affecting the design of any area of major improvement.

4. REVIEW STANDARDS

The following section outlines guidelines and standards for the ODRC to consider when reviewing all site work relating to Building Sites, including planning, siting of structures, grading, design of outdoor areas, and preservation and enhancement of the natural landscape of the OHA's 511 acres in Wahiawā surrounding the existing 5-acre birthing stone parcel.

I. KŪKANILOKO BIRTHING STONE (5 ACRES)

The 5-acre Kūkaniloko Birthing Stone site is an important cultural and historic site located in Central Oʻahu, Hawaiʻi, that is sacred to Native Hawaiians, as it was the place where many aliʻi came to give birth to their children. This site was believed to have immense mana, which meant that the royal children born there would be blessed and their lives would be prosperous.

II. OHA'S WAHIAWĀ LANDS (511 ACRES)

Reverting agricultural lands to a living cultural site that includes agriculture, the OHA's 511 acres of land is proposed to become a cultural hub for locals and visitors alike.

Surrounded by protected forests and agricultural lands, this area is to become the "piko" for the OHA to implement cultural programming, and a sanctuary for cultural practitioners from all facets of "Hawaiian life." The Conceptual Master Plan for the OHA's Wahiawā lands and the 5-acre birthing



stone parcel, is envisioned to progressively develop in harmony with the land. Given Kūkaniloko's reputation as one of the most important cultural sites within Hawai'i, the Plan will leverage educational, environmental, and conservation efforts based on the property's natural and cultural features, and historic significance.

The OHA has the opportunity to create programming that can demonstrate trendsetting conservation programs, including the development of a culturally-informed environmental code of ethics and culturally-based education programs. Several of the programmatic recommendations discussed in this Plan are based on the Hawaiian ahupua'a model of caring for resources, from mountains to ocean, as well as on reforestation, and traditional agricultural practices that could be perpetuated into the future for the next generation. The Plan is dedicated to the ideal of preserving Wahiawa's unique environment and cultural heritage.







FIGURE 66: Photos taken at Kūkaniloko Birthing Stones.

150

III. PHILOSOPHY

The philosophy of the Conceptual Master Plan is rooted in a deep sense of caring for the land and is reflected in the OHA's commitment to cultural and environmental stewardship. The root of this stewardship stems from believing the natural resources of land and sea are connected to the people and must be used responsibly in order to protect quality of life. The philosophy of the Plan is rooted in:

- > Providing appropriate and sensitive use of land in context with the OHA's cultural, environmental, social and economic needs;
- > Providing logical and long-planned programming for the proposed development; and
- > Developing a socially and culturally rich community of people and programs, all while respecting the rural character and natural beauty of the land.

The OHA's Conceptual Master Plan shall be further developed in additional design studies ensuring the appropriate use of materials, color schemes, site design standards, and landscaping. Revised Design Guidelines and design standards shall be implemented and enforced to maintain appropriate architectural character over time.

5. SUSTAINABILITY AND ENVIRONMENTAL CONSIDERATIONS

I. SUSTAINABILITY OBJECTIVES

The Conceptual Master Plan shall actively practice and encourage sustainable environmental practices, including:

- > Using renewable resources and recycled products and energy sources;
- Using recycled materials;
- > Practicing natural resource conservation;
- > Incorporating native and climate-appropriate plant species; and
- > Implementing active and passive environmental control systems and practices in any structure built on site.

II. ENERGY AND RESOURCE CONSERVATION MEASURES

Suggested Building Design Measures include:

- > Locating and designing built spaces to maximize natural light and ventilation;
- > Utilizing shading from large tree canopies;
- > Emphasizing efficient building and design practices that reuse and reduce materials;
- > Encouraging recycling of materials;









FIGURE 67: Ti leaf plant

FIGURE 68: Recycled wood cladding

FIGURE 69: Moss rock wall

- Utilizing high-efficiency (low-flow) toilets, faucets, and similar fixtures where appropriate, and exploring alternative waste management systems (i.e., composting toilets, waterless urinals, etc);
- Installing Energy Star Certified Appliances where appropriate;
- Incorporating adequate space for recycling bins in kitchens, public areas and trash enclosures; and
- Integrating structures with outdoor spaces to encourage engagement with site and outdoor programs.

III. SOLAR AND PHOTO-VOLTAIC EQUIPMENT (PV)

Although not currently incorporated into the Conceptual Master Plan, the use of renewable energy such as solar and photo-voltaic equipment is encouraged to reduce energy consumption, including:

- Using glazing with integrated environmental controls is encouraged, reducing heat gain and energy consumption requirements;
- Designing PV systems to be integrated with the roof structure, utilizing Built-In Photo Voltaic products, (BIPV);
- Providing sufficient roof area for a solar water system collector and space in a hot water closet for additional hot water storage tank; and
- Designing PV systems to be fully integrated into the overall design of the structure.

6. SITE DESIGN

I. SITE DESIGN OBJECTIVES

Each structure on site should be carefully planned for its individual topography, view orientation, trade winds, solar gain, and sensitivity to culture. The objective for Site Design is to create structures that are appropriate in their sense of scale and architectural presence. Additionally, the location of structures should be complimentary to adjacent spaces, in contributing to a habitable context that



feels natural and aligns with the intentions of this Plan.

Because integration of any structure to its individual site topography will differ, the following guidelines should be considered:

- > Structures should minimize site impact by using appropriate and justifiable orientation and the use of appropriate structural solutions for leveling (e.g. utilizing posts where appropriate);
- > Building footprints should be set longer and narrower as the site slopes and run parallel with the grade;
- > Terracing for single-story structures and outdoor landscape design should be considered to "best-fit" sloping portions of the site;
- Use lower-level areas to assist with the transition to outdoor communal spaces (i.e., amphitheaters, gardens, courtyards, open fields, etc.);
- Stone walls should transition with grade minimizing retaining wall heights and site-wall geometry to help blend into the landscape;
- > Maintenance and office structures should be benched into sloping hillsides or screened from public view whenever possible;
- Retention ponds shall be integrated with the landscape, ponding where appropriate;
- > Water channels shall be created between these ponds to relieve over-flow during heavy rains;
- Architectural style should be considered when accommodating for difficult terrain;
- > Take advantage of trade and kona wind directions to naturally cool and ventilate structures as well as to create comfortable outdoor communal areas;
- > Consider seasonal and annual solar trends in locating and sizing windows, extended eave overhangs and covered lanai spaces; and
- > Integrate shading devices and landscape vegetation in the design for additional solar control.

II. SITE VIEW AND PERSPECTIVE

Site view and perspective is defined as looking from the outside in to ensure that any site improvements do not adversely effect the natural characteristics of the site or impacting adjacent properties.

- The Building Envelope is determined by the maximum height and setback requirements as described in the City and County of Honolulu's Land Use Ordinance Chapter 21.
- All improvements shall be reviewed and approved by the ODRC.

Site views and buildings locations are determined based on the specific characteristics of each



zone, zoning setback criteria, and on the planning and design objectives for the OHA's vision of its Wahiawā Lands including:

- > Minimizing grading where possible;
- > Optimizing views and maintaining security for the site;
- > Protecting and utilizing distinctive natural features including existing landscape features and topography;
- > Avoiding prominent or contrived land forms; and
- > Preserving the natural setting by locating structures to blend in harmony with the site, and not dominate the site.

The landscape site design for all areas shall abide by the following guidelines:

- > Create seamless landscape edges where the OHA property landscape merges with the neighboring natural landscape along Lake Wilson and adjacent properties;
- If used, protect drainage bioswales with stabilizing native grasses and indigenous plants with







FIGURE 70: Agroforestry systems. https://www.morningagclips.com/agroforestry-systems-increase-income/

strong roots. Bioswales shall remain on the OHA's property. Avoid building bioswales within 50 feet of any building, roadway or utility easement, if possible;

- Provide access to, and incorporate native plant areas within the demonstration plots area; and
- Use native or "natural" landscapes that consist of undisturbed indigenous plant materials surrounding disturbed areas that have been reclaimed by planting trees, shrubs, perennials, and grasses that are native to the region and climate. Please refer to Chapter 21 of the City &County of Honolulu Land Use Ordinance for specific requirements on landscaping.

III. RETENTION PONDS AND OTHER WATER FEATURES

- Materials used in the ponds shall be complementary to materials used in other areas of the development and exterior hardscape.
- Locate ponds and water features where they are integrated with the landscape;
- Utilize natural influences in designing the ponds (i.e., location and adjacencies); and
- Create water channels between these ponds to relieve overflow during heavy rains.

IV. DRIVEWAYS AND OTHER HARDSCAPE

Design objectives for driveways include:minimizing visibility of paved areas from all areas of development, careful site orientation, layout of landscape plantings, blending into natural terrain, minimizing grading, and using local materials and/or pervious materials for paving (such as turf jointed pavers or turf block).





FIGURE 72: Perimeter planting around wetlands



Additional Guidelines include:

- Driveway alignments should minimize grading or other disruption of the site. Driveway-walkway layouts should minimize visibility of hardscape and off-street parking from public viewing areas, common areas, and adjoining building sites;
- > Maximum grade of driveways shall not exceed 15% slope;
- Suggested driveway width maximum of 24 feet, except at driveway aprons to parking lot entrances and/or when providing a turnaround for off- street parking zones. Parking and turnaround areas must be located within the public zone areas (the "piko");
- In general, there shall be one looped road system per the Conceptual Master Planned zone areas:
- Materials approved for driveways include rock, turf block, colored and/or patterned concrete and precast concrete pavers. Colored asphalt may be used for longer driveways; and
- > Colored concrete is recommended. Colors of finished paving materials should complement proposed structures and integrate with surrounding earth tone colors.

v. GRADING AND DRAINAGE

The design objective for grading and drainage is to minimize the disruption of the natural features and topography of the site. Blending new improvements, maintaining natural drainage and encouraging site retention and percolation are also recommended.

Guidelines:

- > Cut/fill quantities from grading operations should be balanced to minimize the importing/ exporting of soil;
- Steeper slopes require erosion control that will not be observable as uncharacteristic to the site. Utilize natural slopes wherever feasible;
- Cut/fill and retaining walls should create smooth transitions at the top and bottom of slopes, to appear as extensions of natural land forms. Vegetate with plantings appropriate to the site, blending into the surrounding environment;
- > Protect and maintain existing natural drainage channels. Drainage design shall reduce erosion, runoff and adverse impacts to water quality;
- > Drainage from building structures shall be kept on site and retained for irrigation or disposed of through percolation wherever possible;
- > New drainage ways will be designed to appear and function like natural drainage ways;
- Materials and sizes of all culverts and driveways to be approved by the ODRC;
- > When appropriate, gutters and downspouts will direct drainage from roofs to on-site

drainage collection areas. In no event shall gutters and/or downspouts drain onto adjoining agricultural sites without approval by the ODRC;

- Ponds and other water features may be built only within designated zones deemed appropriate by the site and drainage consultant and the ODRC; and
- Exceptions may be granted provided they are not visible from off-site or neighboring properties. The ODRC shall determine whether the exceptions are appropriate in scale, design and location.

VI. EXTERIOR SERVICE AREAS, FURNITURE, MACHINERY AND MECHANICAL SYSTEMS The design objective for exterior service areas, furniture, machinery and mechanical systems is to screen all service areas from off-site locations and ensure that noise and/or odors from equipment or trash are contained within these service areas.

Guidelines:

- Use architectural features and landscaping to completely screen off-site visibility of trash disposal areas, outdoor work areas and outside equipment (including maintenance sheds and equipment storage facilities). Where feasible, these areas should be integrated into one common area of each Master Plan zone; and
- > Trash storage areas shall contain odors and are to be located such that they are easily accessible to service personnel.

Exterior storage of furniture and outdoor accessories in areas visible from off-site locations are allowed provided they meet the following requirements:

- > Uncovered furniture shall be stored in the same location where it is being used;
- Otherwise, furniture covers shall be made with anti-glare material and be of a darker, earth toned color so as not to detract from the natural landscape; and
- Large machinery and other equipment should be located behind walls or in designated areas that are screened by architectural elements or vegetation to mitigate their visibility and to help contain noise. Solid, noise-absorbing covers or screens for equipment may be required after installation if it is discovered that said equipment is audible from public areas.

7. LANDSCAPE DESIGN

I. LANDSCAPE OBJECTIVES

The objective for landscape design is to implement sensible layouts and details that incorporate indigenous landscape and building traditions including:

> Creating landscape environments that feel like natural extensions of indoor spaces



minimizing boundaries between indoors and outdoors;

- > Creating appropriate landscape environments that complement and blend into the larger landscape when possible;
- > Utilizing plants that assist with water conservation; and
- > Using native species where appropriate and in alignment with the OHA's Native Plant Use Policy.

II. COMMON AREA PLANTING

The objective for the use of landscape plants is to utilize appropriate plant species and densities to create a landscape community that conceals the built environment and:

- > Visually enhances the quality of life;
- Unifies and establishes a sense of identity that aligns with the vision for the site;
- Utilizes plantings to soften the impact of new structures, frame views, and visually screen otherwise unsightly areas; and
- Minimizes non-agricultural landscaping irrigation to the extent possible.







FIGURE 73: Examples of native ferns and low shrubs at forest floor.



III. NON-POTABLE WATER AND IRRIGATION

Developments generally obtain their water from the drinking water (potable water) supply lines. However, in many cases it is possible to use non-potable water for certain purposes (e.g. flushing toilets, irrigation, etc.). Using non-potable water for selected purposes can reduce consumption of potable water and make the overall development more environmentally sustainable.

Recycled water is wastewater that has been treated to a level suitable for industrial processing, irrigation and other non-drinking uses. Common uses include cooling towers, irrigation of golf courses, landscaping and ornamental ponds. Recycled water is not for drinking, but is safe to handle for non-drinking uses. Recycled water is available year round and in times of drought.

The quality of non-potable water will vary depending on its source and the level of treatment applied, and may contain biological hazards such as bacteria, viruses or chemical and metal residues. It is therefore important for the OHA to weigh the risks and benefits of utilizing recycled water in this project.

Non-potable water sources can include the following:

- Water that has been used and is then supplied for reuse, either treated or untreated;
- Water sourced from sewage (wastewater treatment plants) or process water streams;
- Storm water, which is water that is collected from run-off from roofs, roads, driveways and other hard surfaces. Storm water must generally be treated for use. Water caught in rainwater tanks is suitable for some uses such as crop irrigation; and
- Grey-water, which is wastewater generated from showers and laundries. Grey-water may be used treated or untreated.

IV. IRRIGATION

The objective of irrigation systems is to minimize the amount of water needed to irrigate the landscaped areas to enable the maintenance of a healthy landscape; providing efficient water coverage and minimizing runoff.

Portions of Honolulu Board of Water Supply's to consider include Chapter III - Protection, Development and Conservation of Water Resources, which provides the following guidelines:

- Recycled water use sites require written approval from the Department or Board of Water Supply. Recycled water will only be used for the purpose(s) for which the Department gives written approval.
- Users of recycled water shall comply with the following Hawai'i Department of Health
 Guidelines (DOH Guidelines) established to ensure protection of public health and prevent



environmental degradation of aquifers and/or surface waters:

- Minimum distances must be maintained between a recycled water approved use site and drinking water supply wells;
- Irrigation of recycled water must be at least 50 feet away from any drinking water supply well:
- The outer edge of any recycled water impoundments (e.g., reservoirs, golf course ponds, etc.) must be at least 100 feet away from any drinking water supply well; and
- Drainage from areas using recycled water must be controlled to prevent the water from coming within 50 feet of a drinking water supply well.
- Prior to using recycled water on any approved recycled water use site, the Department and the User will jointly develop a memorandum of understanding to delineate responsibility for compliance with the rules and regulations in the remainder of this section.
- > Best management practices will be used to mitigate or prevent the occurrence of certain conditions when using recycled water on approved recycled water use sites, including the conditions outlined below:
 - Mitigation of the ponding of water for more than two hours following the cessation of recycled water irrigation;
 - Prevention of contact of recycled water with drinking water fountains;
 - Mitigation of discharge, runoff, or over-spray outside the boundaries of the approved recycled water use site; and
 - Mitigation of conditions conducive to proliferation of mosquitoes and other disease vectors to avoid creation of a public nuisance or health hazard.
- > Standard hose bibs will not be used on recycled water system piping.
- Management Reuse Plan is required for the approved recycled water use site to delineate responsibilities of operation and maintenance of the site. A template for the preparation of a Management Reuse Plan is available from the Department.
- The Management Reuse Plan will include a contingency plan that identifies actions and precautions to be taken to protect public health in the event of a non-approved use, such as an over-spray or runoff from the approved recycled water use site, or ponding of recycled water.

Guidelines:

Minimize and control water usage as each zone will have a designated amount of landscape area (including ponds and water features) and accordingly, water quantity for landscape irrigation use;



- Utilize a central, computerized controller to maximize efficiency of all irrigation systems;
- Monitor water use such that separate water meters for landscaping irrigation and agricultural irrigation shall be provided;
- Incorporate drip-irrigation systems that provide deep root-zone irrigation for trees and shrubs of large scale and cultural importance;
- Group plant materials according to their water consumption needs; and
- During certain conditions, it may be necessary for a utility provider to impose restrictions of irrigation water usage. Irrigation is only allowable using a non-potable water source.

V. LIGHTING

Lighting objectives for structures and landscape lighting seeks to preserve the dark night sky by minimizing exterior lighting and light pollution. Use of low voltage and low intensity, indirect lighting sources are recommended.

Guidelines:

- Exterior site lighting to be directed toward destinations, landscape elements or prominent site features, such as boulders or planting, and not upon any built structures;
- Exterior building lighting, either attached to or part of the building, shall be the minimum needed, providing for general illumination and security of entries and outdoor spaces;
- Lighting of any plant materials shall be achieved with hidden light sources and prevention of any "hot spots." This shall be achieved by utilizing ground recessed light fixtures hidden by plant materials;
- Up-lighting is not allowed unless deemed appropriate by the ODRC;
- Only low voltage lamps shall be used for exterior lighting applications;
- All exterior lighting shall comply with City and County of Honolulu Land Use Ordinance requirements; and
- Evenly spaced and regular interval driveway lighting shall be required for vehicular access and pedestrian safety.

VI. WALKING PATH NODES AND LANDSCAPE STRUCTURES

Landscape structure design should appear as extensions and/or additional building components of the overall site experience. Pavilion nodes shall be implemented along each walking path every half-mile (or estimated 8-10 minute walking distances).



Guidelines:

- Arbors, pavilions and/or decks shall be located within designated areas located on the Master Plan. They shall be sited and designed not to impede views from other areas of the site;
- > Height, color and style used for outdoor structures shall be the same or similar to structures within the "piko" (i.e., visitor center, multipurpose hale structures, etc.); and
- In general, those guidelines applying to architecture shall apply to the design of landscape structures.

VII. ROCK WALLS AND GATES

Within the 511-acres, walls and gates create important design element providing a specific character and structure to the overall landscape. These walls may also hold cultural significance to the land's history and past uses (noted on the Plan as "Tom's Walls," these may have significance as









FIGURE 74: Precedent images for types of nodes, covered, open on all sides, or open-to-the-sky cleared vegetation areas.

communicated by Mr. Thomas Lenchanko of the Hawaiian Civic Club of Wahiawā).

Guidelines:

- Gate designs must relate to architectural character of the site;
- Suggested materials for fences and/or walls include stone (a dry-stacked appearance is



FIGURE 75: Amphitheater with retailing walls.



FIGURE 76: Dry stack stone walls - Billy Fields



FIGURE 77: Rock wall construction

suggested), or stone tile over CMU;

- > Maximum height of walls shall not exceed six feet except for areas of the wall used for retaining purposes;
- Walls may not be built for extended lengths along property lines or building envelopes unless approved by the ODRC;
- > Landscape solutions such as heavy planting, type of plants or landscape berms are suggested in lieu of walls; and
- > Privacy walls should be minimized so as not impacting views from the 5-acre birthing stone parcel.

VIII. RETAINING WALLS

Guidelines:

- > Retaining walls shall be designed to extend and/or blend with existing topography;
- Retaining walls over three feet in height are to be designed and stamped by a structural engineer;
- Walls should utilize multiple off-sets responding to site contours and structure design; and
- > The ends and tops of retaining walls should blend seamlessly into the natural contours of the site and landscape.





06 Mo'owaiwai



KUHIKUHI PU'UONE

MO'OWAIWAI



FIGURE 78: OHA's Wahiawā Lands Conceptual Site Plan

RECOMMENDATIONS

WORKING GROUP RECOMMENDATIONS

The Working Group has recommended that the OHA's 511-acres of land surrounding the Kūkaniloko Birthing Stones should be referred to as Kaʻiliʻili a Kapuahuawa – a reference to the stones and the aliʻi who were said to have been born at this wahi pana. In addition to the following Working Group recommendations, other revenue generation methods were discussed and are described in detail below:

- Grub the site first before deciding where things go;
- Convene an advisory group that will continue to meet and advise the project;
- Once the programming and placement for these activities is established, explore sustainability, agriculture and business plans;
- Create a sustainability plan. The sustainability plan shall summarize and represent the various aspects

- of sustainability (environmental, social, cultural, economic, etc.) that the project hopes to pursue;
- The designee and sustainability consultant should work on creating environmentally responsible designs. Recommendations regarding core sustainability components such as energy, water, waste, agriculture and construction shall follow a high-level natural resource and utility management plan;
- Select more Working Group members with relevant professional expertise that matches the needs of the specific components of the project. In this case, the Working Group could have benefited from members with tourism, food distribution, food manufacturing and marketing expertise; and
- A budget, and the commitment to that budget, needs to be established. It almost impossible to come up with an actionable strategic plan when no information is provided about financial resources such as the OHA's total development/construction budget and the OHA's expected ongoing financial commitment/support for the project. The lack of basic development budget parameters resulted in a many ideas that were likely unfeasible.

BUSINESS MODELS

There are two business model concepts - a school and nursery/greenhouse - that were recognized by the Working Group as being potentially viable options to support the vision and mission of Kūkaniloko. These business models have proven to be successful in Hawai'i, have been studied in detail by subject matter experts and should be explored further for Kūkaniloko. The excerpt below was provided by Jesse Cooke, Working Group member and Vice President of the Ulupono Initiative:

My firm sees a big opportunity in leafy greens production in Hawai'i, given wholesale pricing at 2x to 3x mainland wholesale, inferior shelf-life of existing imports, and Hawai'i's approximately 80% reliance on leafy green imports, which provides new entrants an excellent "local foods" branding strategy.

Currently, Hawai'i imports more than 25 million pounds of leafy greens annually. The combined annual production of leafy greens in Hawai'i is only about 4 million pounds (Please refer to Appendix M regarding Hawai'i's top imported food categories and statistics about vegetable production. In addition, grocer pricing for packaged salad mixes are in the range of \$12 to \$20 per pound which is illustrated in the photos of grocer pricing).

We believe there is a similar opening in the pepper market, and to a lesser extent, the tomato market – the tomato market has more competition. The latest import data for tomatoes and peppers is from 2007 and 2008, but still relevant today. Hawai'i farm production has been steadily/slowly decreasing, due to an aging farmer population, lack of capital, lack of innovation, and new food safety regulations. We believe the opportunity for a new, modern operation has only gotten better. In 2007, Hawai'i produced 14 million pounds of tomatoes and 1.8 million pounds of green peppers. Imports of tomatoes and green peppers were 4 million and 4.8 million pounds, respectively. In 2015, one of

KUHIKUHI PU'UONE







FIGURE 79: Examples of pricing of packaged salad mixes at Foodland.

the largest tomato farmers in Hawaiʻi (Hāmākua Springs) closed shop. That farmer was producing 2 million pounds per year, mostly beef steak and other mid to large tomato varieties. So the current annual volume of imported tomatoes may be 6 million pounds or more, while imported green peppers is probably still near 5 million pounds.

The largest farmer in Hawaiʻi is Larry Jefts (Sugarland Farms). Sugarland's tomato production could be 7 million pounds per year, if not more. Note that Sugarland's production is conventional outdoor tomato farming. As mentioned above, Hāmākua Springs' closure may have left a 2 million pound gap in the market. The largest greenhouse hydroponic tomato farmer in Hawaiʻi is Kawamata Farms, which imports its tomato seeds from Holland and uses a Dutch hydroponic system. Distributors are purchasing greenhouse hydroponic tomatoes from farmers for \$2-\$3 pounds, or more.

GENERAL MARKET OPPORTUNITY

- I. High pricing for local produce (see Appendix M).
- II. The demand for local produce is very strong. A common sentiment among most large established produce farmers in Hawai'i is that they can sell everything they produce. The problem is with local supply. Local farmers struggle with supplying consistent volumes at consistent quality. One of the key attributes of hydroponic production is the ability to supply consistent volumes at consistent quality.
- III. The Pacific Ocean creates a competitive advantage. The long supply chains from the mainland US and international markets provide local produce farmers with a competitive advantage.





FIGURE 80: Students visiting a local aquaponics production facility.

IV. Produce is a highly perishable item, thus the time period required to ship product to Hawai'i results in significant degradation. Thus, local farmers can offer customers higher quality fresher produce.

ADVANTAGES OF HYDROPONICS FOR HAWAI'I

- I. It is a high margin ag business. Greenhouse Hydroponic operations at commercial scale have EBITDA (earnings before interest, tax, depreciation and amortization) margins greater than 15%. In Hawai'i, it may be possible for pricing to make even higher EBITDA margins.
- II. More yield with much less land. Conventional outdoor lettuce yields are 10K to 20K pounds per acre per year. Greenhouse hydroponic lettuce yields can reach over 500K pounds per acre per year. Conventional outdoor tomato yields are 20K to 50K pounds per acre per year. Greenhouse hydroponic tomato yields can reach over 400K pounds per acre per year.
- III. Year-round production capability. All crops grown outdoors are significantly impacted by the seasons (even in Hawai'i), and some crops need to be rotated so that soils have a recovery period, while some crops need to be rotated for pest management. This is not the case for hydroponics.
- IV. Risk mitigation via climate control. Producers of crops grown hydroponically in greenhouses have more control over the climate temperature, humidity, rainfall, light intensification, and the composition of the air.
- V. Hydroponics conserves water. Plants grown hydroponically use only 10% of the water used by field-grown plants. Because water is recirculated, plants take up the necessary water, while run-off water is captured and returned to the system. This advantage is particularly relevant to





FIGURE 81: Modern hydroponics production facility.

Kūkaniloko and Wahiawā in general, given the scarcity of quality water available in the area.

- VI. The ability to grow anywhere. Crops can be grown in places where the land is limited, doesn't exist, or is heavily contaminated. This is a big advantage in Hawai'i, where good land can be very expensive.
- VII. Little to no use of pesticides and herbicides is required. Weeds occur in soil; eliminate soils, the weeds are one, and herbicides are not needed. By growing in a greenhouse, pests such as birds, insects, and plant diseases are better controlled. The greater control the greenhouse hydroponic growers have on the negative variables that plague outdoor conventional growers, the more likely it is that they can eliminate the use of pesticides and herbicides.
- VIII. More effective use of nutrients. In hydroponics, there is 100% control of the nutrients (foods) that plants need. Nutrients are conserved in the tank, so there is no loss or change of nutrients as there are in soil.
- IX. Hydroponics mitigates food safety issues. Growing food indoors allows for greater control of food safety issues such as insects, animals and contaminated soil. These controls can also mitigate weather events such as the flooding experienced on Kaua'i in April 2018.



WORKING GROUP MEMBERS

LĀLĀ 'IKE PONO A KŪKANILOKO WORKING GROUP STATEMENT: "Kūkaniloko ka'ananiau – the beauty of experiencing time- is an ecosystem of connectivity, unseen and seen, of our 'āina and our people. The piko of the lāhui and a wahi kapu to honor Oʻahu's royal lineage, Kūkaniloko will inspire and educate kānaka 'ōiwi to hoʻomana, hoʻonaʻauao and hoʻouluʻāina."



FIGURE 82: Jesse Cooke

JESSE COOKE, CFA

VICE PRESIDENT of INVESTMENTS at ULUPONO. Jesse oversees financial and technical due diligence for investment decisions on various projects. A graduate of St. Louis School in Honolulu, Jesse earned a bachelor's degree in economics from Emory University and a Master of Business Administration from the J. Mack Robinson College of Business at Georgia State University. Prior to joining Ulupono, he worked at Hawaiian Airlines, The Walt Disney Company, Harren Equity Partners and the Wachovia Leveraged Finance Group. He is a recognized CFA charterholder and is a member of the CFA Society of Hawai'i.

MANA'O:

"OHA should select more Working Group members with relevant professional expertise that matches the needs of the particular project. In this case, the Working Group could have benefited from members with tourism, food distribution, food manufacturing, and marketing expertise. It is almost impossible to come up with an actionable strategic plan when no info is provided about financial resources such as OHA's total development/construction budget and OHA's expected ongoing financial commitment/support for the project. The lack of basic development budget parameters resulted in a lot of ideas, but many ideas were likely not feasible or possible from the start."



FIGURE 83: Jo-Lin lenchanko Kalimapau

IO-LIN LENCHANKO KALIMAPAU

PU'UKU of HAWAIIAN CIVIC CLUB OF WAHIAWA. Jo-Lin serves as historian and treasurer for the Hawaiian Civic Club of Wahiawā. A member since 1995, Jo-Lin is responsible for managing the monthly 'Ano'ai newsletter, the kukaniloko.org website and on-site requests and interpretations for visitors. With her brother, Tom Lenchanko, Jo-Lin helps to share the moʻolelo of the total 36,000 acres of the Kūkaniloko Complex through Piko Listening Journeys and monthly workdays. Jo-Lin is passionate about preserving the teachings of her kūpuna and connecting our keiki to their ancestors as the past is always present.

MANA'O:

"e kūkaʻawe i nā kapu o Kūkaniloko no ka mea aloha nō hoʻi kākou iā lākou i nā kau a kau..." - "to guard the kapu of Kūkaniloko because we love them for all time..."



FIGURE 84: Kukui Maunakea-Forth

KUKUI MAUNAKEA-FORTH

CO-FOUNDER AND EXECUTIVE DIRECTOR at MA'O FARMS. Born and raised on Hawaiian Homestead Lands in Nānākuli, Kukui was raised at the knee of her grandmother, a well-known and loved kupuna, Katherine Maunakea. Kukui is a graduate of Nānākuli High School and the University of Hawai'i West O'ahu with a B.A. in Hawaiian-Pacific Studies.



FIGURE 85: Ku'uipo Laumatia

KU'UIPO LAUMATIA

CHAIR OF THE GOVERNING BOARD of KAMALANI ACADEMY. In addition to serving as Chair of the Academy's Governing Board, Kuʻuipo is also a board member of the Kamalani Academy Foundation. Kamalani Academy is a K-8 arts integration, Hawaiian-focused public charter school. Ku'uipo is also a Director of The Manaʻolana Foundation, and is currently serving as mentor to the International Institute of Business Analysis (IIBA) Hawaiʻi Chapter. Kuʻuipo served many years as a board member of the Project Management Institute (PMI) Honolulu Chapter and was a former Chapter President. She also served on the Board of Directors for the Society of Human Resources Management (SHRM). Kuʻuipo holds a Bachelor of Science degree in Information Systems Computer Science from Brigham Young University-Hawaiʻi, a Master's of Business Administration in Human Resources Management from Hawaiʻi Pacific University, and is a certified Franklin Covey facilitator.



FIGURE 86: Jonah La'akapu Lenchanko

JONAH LA'AKAPU LENCHANKO

KUMU at KAMEHAMEHASCHOOLS KAPĀLAMA. Jonah holds bachelor's and master's degrees in Hawaiian Studies from the University of Hawaiii at Mānoa. His thesis was written about Kūkaniloko as a center of ancestral intelligence. His research interests include mele oli (traditional poetry), moʻolelo ʻōiwi (Hawaiian historical texts), ʻāina-based curriculum and Hawaiian educational methodology. Currently, he teaches Hawaiian language at Kamehameha High School Kapālama. He is also a student of hula, oli and hoʻopaʻa under Kumu Hula Snowbird Puananiopaoakalani Bento. Laʻakapu's Kumu Oli include Holoua Stender, Snowbird Bento, his uncle





FIGURE 87: Leilani Basham

Anthony Lenchanko, and Pualani Kanaka'ole Kanahele.

LEILANI BASHAM, PH.D.

ASSISTANT PROFESSOR at THE UNIVERSITY OF HAWAI'I WEST O'AHU, HAWAIIAN-PACIFIC STUDIES. Leilani is Kānaka Maoli and traces her genealogy to the islands of O'ahu and Kaua'i. In addition to her academic studies at the University of Hawai'i (BA, Hawaiian Studies, UHM; MA, Pacific Islands History, UHM; PhD, Political Science [Indigenous Politics], UHM), She was also educated in a traditional hālau hula, graduating as both an 'ōlapa (accomplished dancer) and kumu hula (teacher, source). This background gives Leilani an interdisciplinary approach to teaching and research that integrates language, history, culture and politics on both theoretical and practical levels. At UH West O'ahu, she teaches courses in Hawaiian language and Hawaiian studies on topics that include politics, history and contemporary issues, as well as hula and oli. Her research interests include mele lāhui (nationalist poetry), moʻolelo wahi pana (Hawaiian historical and literary texts) and language curriculum development.



FIGURE 88: Manulani Meyer

MANULANI ALULI MEYER, PH.D.

KONOHIKI for KŪLANA O KAPOLEI, UH WEST OʻAHU. Manulani is the fifth daughter of Emma Aluli and Harry Meyer who grew up on the sands of Mōkapu and Kailua beach on the island of O'ahu. The Aluli 'ohana is a large and diverse group of scholar-activists dedicated to Hawaiian education, justice, land reclamation, law, health, cultural revitalization, arts education, prison reform, food sovereignty, transformational economics and music. Manulani works in the field of indigenous epistemology and its role in world-wide awakening. She obtained her doctorate in Philosophy of Education from Harvard (Ed.D. 1998). She is a world-wide keynote speaker, writer and international evaluator of Indigenous PhDs. Her book Ho'oulu: Our Time of Becoming is in its third printing. Her background is in wilderness education, coaching, and experiential learning and she has been an Instructor for Outward Bound, a coach for Special Olympics and a cheerleader for the Hawaiian Charter School movement. Manulani has been an Associate Professor of Education at the University of Hawaiii at Hilo and spent five years in New Zealand as the lead designer/teacher for He Waka Hiringa, an innovative "Masters in Applied Indigenous Knowledge" degree at Te Wananga o Aotearoa, the largest Maori university with 30,000+ students.



" Working within this Community Advisory Group for Kūkaniloko was an honor. It was a slow process to understand what we were being asked to collect and deliver because we did not know each other. It was a process to trust each other, to hear and understand each other's kuleana, and to envision the purpose we all eventually shared. It was our collective goal to feel the importance of this wahi kapu and to respond to its vast potential with our deepest aspirations for our lāhui. I think we accomplished that.

The components I'd like to see implemented are the ideas that bring life to our lāhui: Hoʻomana, Hoʻonaʻauao and Hoʻoulu 'Āina. They are all clearly expressed as principles within each area, structure, forest, nursery, hana no eau site, and within the practices and protocols found in honoring this wahi kapu. The sequence of how things get accomplished will be set by the land of Kūkaniloko with the aid of the Wahiawā Hawaiian Civic Club, and the OHA Land Team. I will defer to their collective and clear understanding of place, community and processes. In the future, we should include the wider Oʻahu communities. Invite them in to help organize fundraisers, cultural events for our own understanding of the importance of this ku'u 'āina aloha. We can collectively devise a system that will invite our own evolution and growth as a people. We can be an inspiration for the world with the principles/practices found in hoʻomana, hoʻonaʻauao, and hoʻoulu ʻāina. This wahi kapu is first and foremost for our lāhui. We heal and rejuvenate with the beauty of experiencing time at Kūkaniloko so we can understand the purpose of this prophecized ka'anani'au."



FIGURE 89: Noa Lincoln

NOA KEKUEWA LINCOLN, PH.D.

ASSISTANT PROFESSOR at THE UNIVERSITY OF HAWAI'I MĀNOA, DEPARTMENT OF TROPICAL PLANT AND SOIL SCIENCES. Noa is Kānaka Maoli and kama'aina to Kealakekua on Hawai'i Island. His childhood consists of unique training by Hawaiian elders in la'au lapa'au (ethnobotany) and traditional management methods for agriculture and ocean resources. He completed his formal training at Yale University in Environmental Engineering and at Stanford University in Biogeochemistry and Social Ecology. He has worked and studied across the Pacific Rim in California, Costa Rica, Brazil, New Zealand, Tahiti and the Marquesas, among other places. Much of his applied training through mentorship has focused on the installation of cultural values into management systems, often through the development of multiple bottom line assessment tools.



FIGURE 90: Susan Crow

SUSAN E. CROW, PH.D.

ASSOCIATE PROFESSOR at THE UNIVERSITY OF HAWAI'I MĀNOA, DEPARTMENT OF TROPICAL PLANT AND SOIL SCIENCES. Susan is an Associate Professor of Soil Ecology and Biogeochemistry in the Natural Resources and Environmental Management Department within the College of Tropical Agriculture and Human Resources, and an affiliate of the Water Resources Research Center at the University of Hawai'i at Mānoa. She studies the natural carbon cycle and human impacts on the soil environment and serves as a co-PI of a USGS Powell Center Working Group "What lies below" and on the State Greenhouse Gas Sequestration Task Force (formerly Carbon Farming Task Force). Susan is an associate editor for the journal *Biogeochemistry* and belongs to the American Geophysical Union, Soil Science Society of America, Soil and Water Conservation Society, and International Soil Carbon Network.



FIGURE 91: Thomas J. Lenchanko

THOMAS JOSEPH LENCHANKO

KIA'I O KŪKANILOKO AND VICE PRESIDENT of HAWAIIAN CIVIC CLUB OF WAHIAWĀ. Tom has executed the physical care and maintenance of the Kūkaniloko Birthstones State Monument for the past 43 years. As lineal descendant, this responsibility was bestowed upon him by our kūpuna who have long since hala. He continues year after year. Whether he spends eight hours mowing the lawn, or endless hours weed whacking the invasive grasses of the perimeters, this is no easy task. Tom has rich wisdom and knowledge of our moʻolelo of kalana Kūkaniloko from those who have come to share manaʻo with him over the many years. He teaches through the "Piko, Kūkaniloko Listening Journey," the science and moʻolelo of this wahi pana and shares the brilliance of our ancestors who deeply engaged the mysteries of the heavens and earth. Established in 1960, the Hawaiian Civic Club of Wahiawā is comprised of individuals and families who trace their genesis to Puʻuhonua Kūkaniloko, and have embraced their kuleana for the maintenance and care of the grounds for the last 57 years.

MANA'O:

"lala ike pono a kukaniloko kaananiau... the beauty of managing time... hoalii iku pau... of divine descent highest of all...

aloha no na kau a pauole ke kuamoo o na kupuna ma... aloha is forever... and forever is the old way of our ancients."





REFERENCES

"About." Home. Accessed January 17, 2017. http://www.dwls.org/static-pages/about.html.

"About." Waimea Valley. Accessed March 4, 2017. http://www.waimeavalley.net/about.

"About Brambuk." About Us | Brambuk - The National Park & Cultural Centre | Grampians-Gariwerd | Halls Gap. Accessed February 15, 2017. http://www.brambuk.com.au/about.htm.

"About Ka'iwakīloumoku." Ka'iwakīloumoku. Accessed May 25, 2017. https://apps.ksbe.edu/kaiw.

"About NZMACI." About Us | NZMACI. Accessed March 12, 2017. https://www.nzmaci.com/about-us.

"About Te Puia - Top Rotorua Attraction | Whakarewarewa | Māori Village." Te Puia. Accessed March 12, 2017. http://www.tepuia.com/about-us/.

"ABOUT THE HAWAII NATURE CENTER." The Hawaii Nature Center. Accessed March 4, 2017. http://hawaiinaturecenter.org/about-the-hawaii-nature-center/.

"About Us." Academy for Global Citizenship. Accessed April 17, 2017. http://agcchicago.org/school/our-mission/.

"About Us." AGLN - Aspen Global Leadership Network. Accessed March 17, 2017. http://agln.aspeninstitute.org/about.

"About Us." Bishop Museum. Accessed March 4, 2017. http://www.bishopmuseum.org/about-us/.

"About Us." Minatoishi Architects. Accessed March 11, 2017. http://mahawaii.com/about-us/.

"About Us." Paepae o Heeia. Accessed February 2, 2017. http://paepaeoheeia.org/.

"Academy for Global Citizenship." Academy for Global Citizenship | Growing inquiring minds. Accessed April 17, 2017. http://agcchicago.org/.

"Academy for Global Citizenship." Studio Gang. Accessed April 17, 2017. http://studiogang.com/project/academy-for-global-citizenship.

"Academy for Global Citizenship Rethinks School Architecture." Rootstock. September 14, 2016. Accessed April 17, 2017. https://www.rootstock.coop/power-of-we/academyglobal-citizenship-rethinks-school-architecture/.

"Activities." Activities | Brambuk - The National Park & Cultural Centre | Grampians-Gariwerd | Halls Gap. Accessed February 15, 2017. http://www.brambuk.com.au/activities.htm.

"AD Classics: Centre Culturel Jean-Marie Tjibaou / Renzo Piano." ArchDaily. 2015. Accessed December 18, 2016. http://www.archdaily.com/600641/ad-classics-centre-culturel-jeanmarie-tjibaou-renzo-piano.

"AD Classics: Taliesin West / Frank Lloyd Wright." ArchDaily. March 28, 2011. Accessed March 17, 2017. http://www.archdaily.com/123117/ad-classics-taliesin-west-frank-lloyd-

Abiang, Arlene, "Imiloa Astronomy Center." Malamalama, the magazine of the University of Hawaii system. May 01, 2006. Accessed March 07, 2017. http://www.hawaii.edu/ malamalama/2006/05/f2 imiloa.html.

"Ahupua'a." Waimea Valley. Accessed March 4, 2017. http://www.waimeavalley.net/about/ahupua-a.

"Ahupua'a of Kawailoa." Loko Ea. Accessed March 10, 2017. https://www.lokoea.org/story-of-waialua/.

Alameida, Roy Kakulu . "Waialua: Voices from the Past." THE HAWAIIAN JOURNAL OF HISTORY 28, no. 4 (1994). Accessed March 10, 2017. https://evols.library.manoa.hawaii.edu/ bitstream/10524/619/1/JL28027.pdf.

Alliance for Liberal Learning. Accessed March 17, 2017. https://allianceforliberallearning.org/organization/the-aspen-institute/.

"Aloha and Welcome." Paepae o Heeia. Accessed February 2, 2017. http://paepaeoheeia.org/.



Amanda. "The Red Centre Way - Complete Guide." Travel Outback Australia. March 07, 2017. Accessed March 15, 2017. http://traveloutbackaustralia.com/red-centre-way.html/.

"American Indian Cultural Center and Museum — Hargreaves Associates." Hargreaves Associates. Accessed March 13, 2017. http://www.hargreaves.com/work/american-indian-cultural-center-and-museum/.

"Anangu-owned art centre and cultural tour operator at Uluru." Maruku Arts. Accessed March 17, 2017. https://maruku.com.au/about/.

Apo, Peter. "Preserving Kukaniloko, Most Sacred Of Hawaiian Places." Civil Beat News. 2016. Accessed October 17, 2016. http://www.civilbeat.org/2016/09/peter-apo-preserving-kukaniloko-most-sacred-of-hawaiian-places/.

"Archeology." National Parks Service. Accessed March 07, 2017. https://www.nps.gov/havo/learn/historyculture/archeology.htm.

"Archaeology Field School Studies North Shore Heiau." University of Hawai'i News, January 28, 2013. Accessed March 16, 2017. http://www.hawaii.edu/news/2013/01/28/archaeology-field-school-studies-north-shore-heiau/.

"Arcosanti: An Urban Laboratory, Mayer, Arizona." RoadsideAmerica.com. Accessed November 28, 2016. http://www.roadsideamerica.com/story/15164.

Arnold, Caroline, and Arthur Arnold. Uluru, Australia's Aboriginal heart. New York: Clarion Books, 2003.

Balamir, Aydan. "2007 On Site Review Report." Druk White Lotus School. https://archnet.org/system/publications/contents/9641/original/DTP102123.pdf?1398414450.

Barclay, Sophie. "Tuhoe's Living Building: A vision for the future." The New Zealand Herald. May 20, 2013. Accessed March 16, 2017. http://www.nzherald.co.nz/element-magazine/news/article.cfm?c_id=1503340&objectid=10885066.

"BB-39 USS ARIZONA - Attack on Pearl Harbor." History in photos. December 03, 2015. Accessed February 11, 2017. http://historyinfotos.com/2015/12/03/bb-39-uss-arizona-attack-on-pearl-harbor/.

Beavon, Daniel J. K., Cora Jane Voyageur, and David Newhouse. Hidden in plain sight: contributions of Aboriginal peoples to Canadian identity and culture. Toronto, ON: University of Toronto Press, 2007.

Beckwith, Martha. Hawaiian mythology. Honolulu: University of Hawaii Press, 1970.

Bernice Pauahi Bishop Museum. Strategy Plan 2016. http://www.bishopmuseum.org/wp-content/uploads/2016/04/StratPlan.pdf.

Bisbee, Julie. "Indian Center plans unveiled Group still working to get funds." NewsOK.com. January 24, 2007. Accessed March 13, 2017. http://newsok.com/article/3003739.

"Brambuk Cultural Centre." Architectural Resource Package. Accessed March 17, 2017. http://www.brambuk.com.au/assets/pdf/brambukspecs.pdf.

Buzard, Kurt, MD. "Te Puia (The Arts), Māori Arts and Crafts Institute. Rotorura, New Zealand." Travel To Eat. June 10, 2015. Accessed March 11, 2017. https://traveltoeat.com/te-puia-the-arts-maori-arts-and-crafts-institute-rotorura-new-zealand/.

Canales, Alicia. "Frank Lloyd Wright Foundation rehabbing Taliesin West, adding education programs." Phoenix Business Journal. January 22, 2014. Accessed March 03, 2017. http://www.bizjournals.com/phoenix/news/2014/01/22/frank-lloyd-wright-foundation.html.

"Charles Reed Bishop." Charles Reed Bishop Trust. Accessed March 4, 2017. http://www.charlesreedbishop.org/charlesreedbishop/.

Chayka, Kyle. "If You Build It." The Magazine. December 13, 2013. Accessed April 03, 2017. http://the-magazine.org/31/if-you-build-it#.WOLkWG_yupo.

Chilingerian, Natasha. "Project Profile: Southern Ute Cultural Center & Museum." Decorative Concrete | Southern Ute Cultural Center. Accessed March 14, 2017. https://www.concretedecor.net/decorativeconcretearticles/vol-12-no-1-january-2012/project-profile-southern-ute-cultural-center-museum/.

City and County of Honolulu: Office of Council Services, ed. "Chapter 21 LAND USE ORDINANCE." August 29, 2016. doi:https://www.honolulu.gov/ocs/roh/193-site-ocs-cat/975-roh-chapter-21.html.

City and County of Honolulu: Department of Planning and Permitting. "Honolulu Land Information System (HoLIS)." November 17, 2016. doi:http://gis.hicentral.com/pubwebsite.

City and County of Honolulu Planning Department, and Wahiawa Urban Design Task Force. "Wahiawa Urban Design Plan." January 1998. doi:http://wahiawacbdo.org/WahiawaUrbanDesignPlan.pdf.

CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

"College of Hawaiian Language holds historic groundbreaking." Big Island Video News. April 14, 2012. Accessed March 07, 2017. http://www.bigislandvideonews.com/2011/02/12/college-of-hawaiian-language-holds-historic-groundbreaking/.

"Coming Soon to Hawai'i's Plantation Village in Waipahu: 'Plantation Plays'!" Hitting The Stage. February 07, 2017. Accessed March 11, 2017. http://hittingthestage.com/home/2017/2/7/coming-soon-to-hawaiis-plantation-village-in-waipahu-plantation-plays.

"Conservation." Waimea Valley. Accessed March 4, 2017. http://www.waimeavalley.net/conservation.

Consumer Price Index statistics from Historical Statistics of the United States (USGPO, 1975). All data since then are from the annual Statistical Abstracts of the United States.

Cordy, Ross, ed al. A Traditional Cultural Property Study of Kūkaniloko a Wahi Pana on the Central Plateau of O'ahu. 2011.

"Crater Rim Drive, Stop 5." Hawaiian Volcano Observatory & Jaggar Museum. Accessed March 07, 2017. http://volcano.oregonstate.edu/oldroot/crater_rim_drive/menu5.html.

Crum, William. "American Indian Cultural Center & Museum in OKC clears hurdle to issue bonds, resume building." NewsOK.com. January 26, 2017. Accessed March 12, 2017. http://newsok.com/article/5535813.

"Culture Programs." Bishop Museum. Accessed March 4, 2017. http://www.bishopmuseum.org/plan-a-trip/programs/culture-programs/.

D'Andrea, Niki. "Taliesin West: Frank Lloyd Wright's Vision of Desert Living." Phoenix New Times. May 28, 2016. Accessed March 4, 2017. http://www.phoenixnewtimes.com/arts/taliesin-west-frank-lloyd-wrights-vision-of-desert-living-6552850.

DeCoito, Rae, ed. Compiled by Nitasha Stiritz. Mālama Loko Ea 2016 Annual Report, 2016. http://www.lokoea.org/new/wp-content/uploads/2017/02/Loko-Ea-Fishpond-Annual-Report Rae-Decoito Haleiwa-north-shore-oahu-Waialua0ANative-Hawaiian-culture0ANatural-Resource-Management-Habitat-Restoration.pdf.

"Denton Corker Marshall." Denton Corker Marshall - architecture urban design, united kingdom. Accessed March 17, 2017. https://dentoncorkermarshall.co.uk/projects/_project. php?project=stonehenge-visitor-centre.

Department of Planning and Permitting, comp. "Development Plans: Revised Ordinances of Honolulu." Central Oahu Sustainable Communities Plan, 03rd ser., 2 (February 18, 2003): 24–27–4.48.111. doi:https://www.honolulu.gov/rep/site/ocs/roh/SCP Central Oahu.pdf.

"DesignShare: Druk White Lotus School, Ladakh, India." DesignShare: Druk White Lotus School, Ladakh, India. Accessed February 7, 2017. http://www.designshare.com/index.php/case-studies/druk-white-lotus-school/.

"Design/Planning Team." The American Indian Center. Accessed March 12, 2017. http://www.theamericanindiancenter.org/designplanning-team.

De Silva, Kīhei, "Kākuhihewa," 2014.

"Dole Plantation – Wahiawa, Hawaii – Home of the Complete Pineapple Experience." Dole Plantation – Wahiawa, Hawaii – Home of the Complete Pineapple Experience. Accessed March 17, 2017. http://www.city-data.com/articles/Dole-Plantation-Wahiawa-Hawaii-Home-of.html.

Doo, Brandon, and Ken Rubin: "Mauna Kea." Hawaii Center for Volcanology. February 25, 2008. Accessed March 16, 2017. https://www.soest.hawaii.edu/GG/HCV/maunakea.html.

"Druk White Lotus School." Druk White Lotus School :: ARUP ASSOCIATES. Accessed March 17, 2017. http://www.arupassociates.com/en/case-studies/druk-white-lotus-school/.

"Education." National Parks Service. Accessed March 03, 2017. https://www.nps.gov/puhe/learn/education/index.htm.

"Events." Bishop Museum. Accessed March 4, 2017. http://www.bishopmuseum.org/events/.

"Exhibits." Bishop Museum. Accessed March 4, 2017. http://www.bishopmuseum.org/exhibits/.

"Fact Sheet. Uluru-Kata Tjuta National Park." Australian Government — Parks Australia. Accessed March 7, 2017. http://eoi.uluru.gov.au/node/98/attachment.

Ferraro Choi. "Hawaii Gateway Energy Center / Natural Energy Laboratory of Hawaii Authority (NELHA)." Ferraro Choi. Accessed November 28, 2016. http://ferrarochoi.com/portfolio_page/hawaii-qateway-energy-center/.

Findley, Lisa. Building Change: Architecture, Politics and Cultural Agency. London: Routledge, 2005.

Fleming, Jim; Rory McGowan; Dorothee Richter; and Jonathan Rose. "Druk White Lotus School, Ladakh, Northern India," The Arup Journal, Vol.2, 2002.

KUHIKUHI PU'UONE

JAN 2019

"Flooring replacement begins at USS Arizona Memorial." Hookele Pearl Harbor Hickam News RSS. Accessed March 11, 2017. http://www.hookelenews.com/flooring-replacement-begins-at-uss-arizona-memorial/.

Fodor's Australia. New York: Fodor's Travel Publications, 2012.

"Frank Lloyd Wright Foundation." Frank Lloyd Wright Foundation. Accessed February 29, 2017. http://franklloydwright.org/.

"Frank Lloyd Wright's Taliesin West." Official Travel Site for Scottsdale, Arizona. Accessed March 4, 2017. https://www.experiencescottsdale.com/listing/frank-lloyd-wrights-taliesin-west/771/.

"FREQUENTLY ASKED QUESTIONS." The Hawaii Nature Center. Accessed March 4, 2017. http://hawaiinaturecenter.org/frequently-asked-questions/.

Gill, Lorin Eleni. "Blair Collis on Bishop Museum's business model transformation." Pacific Business News. December 11, 2015. Accessed March 4, 2017. http://www.bizjournals.com/pacific/blog/2015/12/blair-collis-on-bishop-museums-business-model.html.

Gintoff, Vladimir. "Studio Gang Designs a Chicago Charter School With Principles of Sustainability and Wellness." ArchDaily. May 24, 2016. Accessed April 17, 2017. http://www.archdaily.com/788158/studio-gang-designs-a-chicago-charter-school-with-principles-of-sustainability-and-wellness.

GmbH, BauNetz Media. "Magazine no. 27 - uncube." Uncube magazine. Accessed February 15, 2017. http://www.uncubemagazine.com/magazine-27-14749399.html#!/page47.

"Government." Southern Ute Tribal Seal. Accessed March 14, 2017. https://www.southernute-nsn.gov/government/.

"Grampians National Park." Brambuk the National Park & Cultural Centre. Accessed March 17, 2017. http://www.brambuk.com.au/assets/pdf/Grampians_National_Park_Brambuk_ Fact_Sheet.pdf

"GRANTS." Arcosanti. Accessed March 2, 2017. https://arcosanti.org/node/8643.

"Gregory Burgess Architects." Brambuk Living Cultural Centre – Gregory Burgess Architects. Accessed February 6, 2017. http://www.gbarch.com.au/projects/1990/brambuk-living-cultural-centre/.

"Gregory Burgess Architects." Uluru Kata-Tjuta Cultural Centre – Gregory Burgess Architects. Accessed January 15, 2017. http://www.gbarch.com.au/projects/1995/uluru-kata-tjuta-cultural-centre/.

"Haleakala National Park, Maui." Go Hawaii. 2017. Accessed March 16, 2017. https://www.gohawaii.com/maui/regions-neighborhoods/upcountry-maui/haleakala-national-park/.

"Haleakala National Park." Haleakala History | Haleakala | Oh, Ranger! Accessed April 24, 2017. http://www.ohranger.com/haleakala/haleakala-history.

Hao, John Holani . "He Mele no Kukaniloko." Translated by Hīka'alani (de Silva & Groves). Ka Nupepa Kuokoa 64, no. 22 (May 28, 1925).

"HAWAII." History.com. Accessed March 07, 2017. http://www.history.com/topics/us-states/hawaii/pictures/hawaii/dole-pineapple-plantation.

"Hawaii (U.S. National Park Service)." National Parks Service. Accessed March 03, 2017. https://www.nps.gov/state/hi/index.htm.

"Hawaii Gateway Energy Center." Green Building Audio Tours - Hawaii Gateway Energy Center. Accessed November 11, 2016. http://greenbuildingaudiotours.com/buildings/hawaii_gateway_energy_center#.

"Hawaii Gateway Energy Center." Green Building Brain - Hawaii Gateway Energy Center. Accessed November 11, 2016. http://greenbuildingbrain.org/buildings/hawaii_gateway_energy_center.

"Hawaii Gateway Energy Center." Hawaii Gateway Energy Center | Building Catalog: Case Studies of High Performance Buildings. Accessed November 28, 2016. https://buildingdata.energy.gov/project/hawaii-gateway-energy-center.

"Hawaii Health Guide - OHA announces new management company for Waimea Valley." Go to HawaiiHealthGuide.com. Accessed March 10, 2017. http://www.hawaiihealthguide.com/healthtalk/display.htm?id=607.

"Hawaii Nature Center." Aloha from Hawaii Travel Guide. Accessed March 4, 2017. http://www.aloha-hawaii.com/hawaii/nature-center/.

"Hawaii Nature Center in Iao Valley." Wonders of Maui. Accessed March 4, 2017. http://www.wondersofmaui.com/hawaii-nature-center/.

JAN 2019 | CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

"Hawaii Nature Center Rain Pavilion - Project - AHL." Architects Hawaii Limited. Accessed March 4, 2017. http://www.ahldesign.com/projects/hawaii-nature-center-rain-pavilion/.

Hawaii's Plantation Village. Orientation to Hawaii's Plantation Village. 2010. Accessed March 16, 2017. http://hawaiiplantationvillage.org/images/2010_2011brochure_shrunk_to_fit_letter_sized_paper.pdf.

Heckathorn, John. "Waimea Valley Reopens." Hawaii Magazine. August 2, 2008. Accessed March 4, 2017. http://www.hawaiimagazine.com/blogs/hawaii_today/2008/8/2/waimea valley.

Hīka'alani, De Silva & Groves, trans. "Ka Moolelo o Hiiakaikapoliopele." Ka Leo o ka Lahui 2, no. 669 (March 24, 1893).

"Historic Legacy." Historic Legacy — Taliesin. Accessed March 17, 2017. http://taliesin.edu/history/.

"History & Culture." National Parks Service. Accessed March 03, 2017. https://www.nps.gov/puhe/learn/historyculture/index.htm.

"History of ACA." Atlantic Center for the Arts. February 01, 2017. Accessed March 17, 2017. http://atlanticcenterforthearts.org/about-aca/history-of-aca/.

"History of the Southern Ute." Southern Ute Tribal Seal. Accessed March 14, 2017. https://www.southernute-nsn.gov/history/.

"Home Australian Dreamtime Creations." Australian Dreamtime Creations. Accessed February 15, 2017. http://aboriginalartpaintings.com/

"Honolulu, Hawaii USS Arizona Memorial." USS Arizona Memorial. Accessed March 11, 2017. https://www.triposo.com/poi/T__3047efb80d18.

"Ho'oulumāhiehie." Hi'iakaikapoliopele.

1'i, John Papa, Mary Kawena Pukui, and Dorothy B.. Barrère. Fragments of Hawaiian history. Honolulu: Bishop Museum Press, 1959.

"Imiloa Astronomy Center." Hawaii.com. Accessed March 16, 2017. https://www.hawaii.com/big-island/attractions/imiloa-astronomy-center/.

"'Imiloa Astronomy Center of Hawai'i." InstantHawaii. Accessed March 07, 2017. http://www.instanthawaii.com/cgi-bin/hi?Astronomy.imiloa.

"In The Mind Of The Architect: Episode 2 - The Public Good." ABC Online. Accessed March 17, 2017. http://www.abc.net.au/arts/architecture/ep trn2.htm.

Interview with Hīka'alani (Kīhei and Māpuana de Silva), December 9, 2016.

"IT Infrastructure." Tuhoe. Accessed March 12, 2017. http://www.ngaituhoe.iwi.nz/it-infrastructure.

"Jaggar Museum & Overlook." National Parks Service. Accessed March 07, 2017. https://www.nps.gov/havo/planyourvisit/jaggar_museum.htm.

"Jaggar, Thomas Augustus, Jr." American National Biography Online. Accessed March 07, 2017. http://www.anb.org/articles/13/13-00851.html.

"James Dole establishes the Hawaiian Pineapple Company." Hawaii History - Short Stories. Accessed March 07, 2017. http://www.hawaiihistory.org/index.cfm?fuseaction=ig. page&PageID=317&returntoname=year 1907&returntopageid=191.

"Jean-Marie Tjibaou Cultural Center." Renzo Piano Building Workshop - Projects - By Type - Jean-Marie Tjibaou Cultural Center. Accessed December 18, 2016. http://www.rpbw.com/project/41/jean-marie-tjibaou-cultural-center/.

"Ka Ho'oilina." Ka'iwakiloumoku. Accessed May 25, 2017. http://apps.ksbe.edu/kaiwakiloumoku/hooilina.

"Ka'iwakīloumoku Hawaiian Cultural Center." Ka'iwakīloumoku. Accessed May 25, 2017. http://apps.ksbe.edu/kaiwakiloumoku/.akiloumoku/kaiwakiloumoku/about.

Kamaikui. "He Inoa no Kunuiakea." Ka Hoku o ka Pakipika 1, no. 17 (January 16, 1862).

Kamakau, Samuel M. "Ka Moolelo Hawaii." Translated by Kamakau, Ruling Chiefs of Hawaii. Ke Au Okoa 5, no. 23 (September 23, 1869). Translated 1961.

Kamakau, Samuel M. "Ka Moolelo Hawaii." Translated by Pukui from Kamakau, Tales and Traditions, 136. Ke Au Okoa 5, no. 27 (October 21, 1869).

Kamakau, Samuel M. "Ka Moolelo Hawaii." Translated by Pukui from Kamakau, Ka Po'e Kahiko, 5. Ke Au Okoa 6, no. 28 (October 27, 1870).

Kamakau, Samuel M. "Ka Moolelo Hawaii." Translated by Pukui from Kamakau, Ka Po'e Kahiko: The People of Old. Ke Au Okoa 6, no. 28 (September 23, 1869).

KUHIKUHI PU'UONE

JAN 2019



Kamakau, Samuel M. "Ka Moolelo o Hawaii Nei." Translated by Pukui from Kamakau, Tales and Traditions, 39. Ke Nupepa Kuokoa 4, no. 31 (October 5, 1869).

Kamakau, Samuel M. "Ka Moolelo o Hawaii Nei." Translated by Pukui from Kamakau, Tales and Traditions, 53. Ka Nupepa Kuokoa 4, no. 34 (August 26, 1865).

Kamakau, Samuel M. "Ka Moolelo o Hawaii Nei." Translated by Pukui from Kamakau, Tales and Traditions, 56. Ka Nupepa Kuokoa 4, no. 35 (September 2, 1865).

Kamakau, Samuel M. "Ka Moolelo o Hawaii Nei." Translated by Hīka'alani, De Silva & Groves. Ka Nupepa Kuokoa 4, no. 38 (September 23, 1865).

Kamakau, Samuel M. "Ka Moolelo o Hawaii Nei." Translated by Pukui from Kamakau, Tales and Traditions of the People of Old: Nā Mo'olelo a ka Po'e Kahiko. Ka Nupepa Kuokoa 4, no. 38. Honolulu: Bishop Museum Press, 1991. (September 23, 1865).

"Kamehameha Schools Kapalama, Kaiwakiloumoku Hawaiian Cultural Center." PCL Construction. Accessed May 25, 2017. http://www.pcl.com/Projects-that-Inspire/Pages/ Kamehameha-Schools-Kapalama-Kaiwakiloumoku-Hawaiian-Cultural-Center.aspx.

"Kaleinamanu." Ka'iwakiloumoku. Accessed May 25, 2017. http://kaiwakiloumoku.ksbe.edu/.

Kanahele, George S. Kū kanaka, stand tall: a search for Hawaiian values. Honolulu: University of Hawaii Press, 1986.

"Kanak culture in tribe." New Caledonia - Kanak culture. Accessed December 19, 2016. http://www.newcaledonia.travel/en/culture-arts/local-culture/kanak-culture.

"Ka'ū Desert." Big Island Hikes. Accessed March 07, 2017. http://www.bigislandhikes.com/kau-desert/.

Kennedy, Maev. "New Stonehenge visitor centre finally opens." The Guardian. December 17, 2013. Accessed January 17, 2017. https://www.theguardian.com/culture/2013/dec/17/ stonehenge-visitor-centre-opens-english-heritage.

"Kids." National Parks Service. Accessed March 03, 2017. https://www.nps.gov/puhe/learn/kidsyouth/justforkids.htm.

Kongaika, Ruth. "Hawaii's Plantation Village: A Journey Back in Time." Beyond Honolulu. November 24, 2016. Accessed March 11, 2017. http://beyondhonolulu.com/hawaiisplantation-village-journey-back-time/.

Korn, Alfons, and Mary Pukui. The Echo of Our Song Chants and Poems of the Hawaiians. Honolulu: University of Hawaii Press, 1973.

Kotubetey, Keli'i, and Brenda Asuncion, "He'eia Fishpond: An expanded role for tradi-tional aquaculture in climate adaptation." Interview by Anukriti Hittle. Hawai'i Climate Adaptation Portal. November 4, 2015. Accessed February 2, 2017. https://climateadaptation.hawaii.gov/wp-content/uploads/2016/06/Heeia-SLR-Story-Final.pdf.

Kroll, Andrew. "AD Classics: Taliesin West / Frank Lloyd Wright." ArchDaily. March 28, 2011. Accessed March 4, 2017. http://www.archdaily.com/123117/ad-classics-taliesin-westfrank-lloyd-wright.

"Kukaniloko," National Register (Nomination Form), 1972 & 1994.

"Kulaiwi nani Habitat Restoration." Loko Ea. Accessed March 10, 2017. https://www.lokoea.org/habitat-restoration-accomplishments/.

Kullman, Joe. "Taliesin West funding OK'd." East Valley Tribune. October 06, 2011. Accessed March 03, 2017. http://www.eastvalleytribune.com/local/taliesin-west-funding-ok-d/ article 4274ba84-54d4-5dd4-af44-a12d3d540cf0.html.

"Kupuohi Education Program." Loko Ea. Accessed March 10, 2017. https://www.lokoea.org/education-program/.

"Landscaping." Tuhoe. Accessed March 12, 2017. http://www.ngaituhoe.iwi.nz/landscaping.

"Latest News: 2016." Mason Architects: 2005 News. Accessed March 03, 2017. http://www.masonarch.com/news-2005.html.

LaTrace, AJ. "Studio Gang Selected to Design New Academy for Global Citizenship Campus." Curbed Chicago. June 09, 2015. Accessed April 17, 2017. http://chicago.curbed. com/2015/6/9/9951696/studio-gang-selected-to-design-new-academy-for-global-citizenship.

"Learning Journey: Loko Ea Fishpond and Waimea Valley/August 29." Hokulea. September 1, 2013. Accessed March 10, 2017. http://www.hokulea.com/learning-journey-loko-eafishpond-and-waimea-valley-august-29/.

LeCuyer, Annette. "Native wit." Architectural Review, 1992, 47–52.

CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

"Les grands projets." One quality, the finest. October 26, 2012. Accessed March 17, 2017. https://onequalitythefinest.com/2012/10/26/les-grands-projets/.

"LibGuides: Aboriginal people of South Australia: Pitjantjatjara people." Pitjantjatjara people - Aboriginal people of South Australia - LibGuides at State Library of South Australia. Accessed January 15, 2017. http://guides.slsa.sa.gov.au/Aboriginal_peopleSA/Pitjantjatjara.

"Liru and Kuniya." ArchitectureAU. Accessed January 15, 2017. http://architectureau.com/articles/liru-and-kuniya/.

"'Living building' revealed as Tuhoe headquarters opens." Rotorua Daily Post, March 8, 2014. Accessed March 16, 2017. http://www.nzherald.co.nz/rotorua-daily-post/news/news/article.cfm?c id=1503437&objectid=11216148.

"Living Cultures." Jones & Jones Architecture and Landscape Architecture Seattle. Accessed March 14, 2017. http://www.jonesandjones.com/work/living.html.

"Loko I'a Resources." Loko Ea. Accessed March 10, 2017. https://www.lokoea.org/loko-ia-resources/.

Lopez, Michele. "Haleakala National Park." Maui Hawaii. February 9, 2017. Accessed March 16, 2017. http://www.hawaii-guide.com/maui/sights/haleakala_national_park.

"Mailekini Heiau." National Parks Service. Accessed March 03, 2017. https://www.nps.gov/puhe/learn/historyculture/mailekini.htm.

Malik , Tariq. "Venus Crosses the Sun for Last Time Until 2117, Skywatchers Rejoice." Space.com. Accessed March 03, 2017. http://www.space.com/16024-venus-transit-2012-skywatchers-rejoice.html.

Malnar, Joy Monice, and Frank Vodvarka. New Architecture on Indigenous Lands. Minneapolis, MN: Univ. of Minnesota Press, 2013.

"Management." National Parks Service. Accessed March 03, 2017. https://www.nps.gov/puhe/learn/management/index.htm.

"Māori Arts & Crafts | Māori Wood Carving & Weaving." Te Puia. Accessed March 16, 2017. http://tepuia.com/new-zealand-maori-arts-and-crafts/.

"Māori Law Review." Tūhoe-Crown settlement — Te Wharehou o Tūhoe: The house that 'we' built at Māori Law Review. Accessed March 12, 2017. http://maorilawreview.co.nz/2014/10/tuhoe-crown-settlement-te-wharehou-o-tuhoe-the-house-that-we-built/.

Martin, Matthew. "\$18 million transformation for Te Puia." NZ Herald: New Zealand's Latest News, Business, Sport, Weather, Travel, Technology, Entertainment, Politics, Finance, Health, Environment and Science. May 10, 2016. Accessed March 11, 2017. http://m.nzherald.co.nz/rotorua-daily-post/news/article.cfm?c_id=1503438&objectid=11637186.

"Master Plan Update for UMass Amherst Agricultural Learning Center." Center for Agriculture, Food and the Environment. August 14, 2013. Accessed March 17, 2017. https://ag.umass.edu/cafe/news/master-plan-update-for-umass-amherst-agricultural-learning-center.

Mattison, Sara. "Waimea Valley reopens after cleanup from flood damage." KHON2. March 06, 2017. Accessed March 27, 2017. http://khon2.com/2017/03/05/waimea-valley-reopens-after-cleanup-from-flood-damage/.

McAllister, J. Gilbert. Archaeology of Oahu. Honolulu, HI: Bishop Museum Press, 1933.

McCartney, Jennifer. "Arizona's Bio-Paradise May be the Last 1970s Utopia Standing." Curbed. January 14, 2015. Accessed March 03, 2017. http://www.curbed.com/2015/1/14/10002668/arizonas-desert-utopia-arcosanti-is-still-around.

McKay, Bill. "Te Uru Taumatua, Te Wharehou O Tühoe." Architecture Now. July 22, 2014. Accessed March 16, 2017. http://architecturenow.co.nz/articles/te-uru-taumatua-te-wharehou-o-tuhoe/.

Meinhold, Bridgette. "High Tech WBF Lab LEED Platinum Winery Collects Enough Rainwater to Irrigate All of Its Vineyards." Inhabitat Green Design Innovation Architecture Green Building, May 13, 2011. Accessed April 17, 2017. http://inhabitat.com/high-tech-wbf-lab-leed-platinum-winery-collects-enough-rainwater-to-irrigate-all-of-its-vineyards/.

Message, Kylie. "Contested sites of identity and the cult of the new The Centre Culturel Tjibaou and the constitution of culture in New Caledonia." ReCollections. Accessed March 8, 2017. http://recollections.nma.gov.au/issues/vol_1_no_1/papers/contested_sites.

Messner, Matthew. "Studio Gang reveals renderings for Academy for Global Citizenship." Archpaper.com. July 06, 2016. Accessed April 17, 2017. https://archpaper.com/2016/05/academy-for-global-citizenship-studio-gang/#gallery-0-slide-0.

Mimiaga, Jim. "A spotlight on Ute culture: New museum offers insights in a stunning setting." Four Corners Free Press. December 26, 2012. Accessed March 14, 2017. http://fourcornersfreepress.com/?p=1043.

KUHIKUHI PU'UONE

JAN 2019



"Mission." Waimea Valley. Accessed March 4, 2017. http://www.waimeavalley.net/about/waimea-valley-mission-statement.

"Mission & History." 'Imiloa Hawai'i. 2013. Accessed March 16, 2017. http://imiloahawaii.org/104/mission-history.

Monahan, Christopher M., Ph.D. "Continuity and Change at a Pu'uone Fishpond: New Archaeological Data from Lokoea, Kawailoa, O'ahu." Lecture. October 3, 2013. http://www. lokoea.org/new/wp-content/uploads/2016/08/Continuity-and-Change-at-a-Pu%E2%80%98uone-Fishpond.pptx.

Monahan, Christopher M., Ph.D. KA HOʻOILINA MAU O LOKOEA PERPETUATING CULTURAL PRACTICES AT A PU'UONE FISHPOND: ARCHAEOLOGICAL SITE PRESERVATION & DEVELOPMENT PLAN LOKOEA FISHPOND. TCP Hawai'i, LLC. February 2014. https://www.lokoea.org/new/wp-content/uploads/2016/08/Final-Lokoea-Preservation-Plan-TCP-Hawaii-Monahan-14-Feb-20141.pdf.

Moon Handbooks South Pacific by David Stanley. "New Caledonia Travel Guide." Jean-Marie Tjibaou Cultural Center, Nouméa, New Caledonia, South Pacific. Accessed February 2, 2017. http://newcaledonia.southpacific.org/noumea/culturalcenter.html.

Nā Puke Wehewehe 'Ōlelo Hawai'i. Accessed November 30, 2016. http://wehewehe.org/.

"NACEA." The American Indian Center. Accessed March 12, 2017. http://www.theamericanindiancenter.org/nacea.

Napier, A. Kam. "Present-Tense Architecture." Honolulu Magazine. October 1, 2007. Accessed March 4, 2017. http://www.honolulumagazine.com/Honolulu-Magazine/October-2007/ Present-Tense-Architecture/.

New Adventure 2014. "Taliesin West, Scottsdale, AZ." Wildwomenwanderers. May 18, 2012. Accessed March 17, 2017. https://wildwomenwanderers.wordpress.com/2012/03/15/ taliesin-west-scottsdale-az/.

"New Agricultural Learning Center to be a living classroom for undergraduates." CNS Newsletter | Issue 3 – October 2012 | UMass Amherst. October 01, 2012. Accessed April 17, 2017. https://www.cns.umass.edu/news-events/newsletter/issue/323/new-agricultural-learning-center-be-living-classroom-undergraduates.

"New Agricultural Learning Center will link past, present and future roles in agriculture." Office of News & Media Relations | UMass Amherst. July 24, 2012. Accessed April 17, 2017. https://www.umass.edu/newsoffice/article/new-agricultural-learning-center-will-link-past-present-and-future-roles-agriculture.

"New Hale'olelo at UH College of Hawaiian Language." Big Island Video News. January 16, 2014. Accessed March 07, 2017. http://www.bigislandvideonews.com/2014/01/12/hilowelcomes-new-haleolelo-for-uh-college-of-hawaiian-language/.

"New Hilo Home for Hawaiian Language." University of Hawai'i News, January 13, 2014. Accessed March 16, 2017. http://www.hawaii.edu/news/2014/01/13/new-hilo-home-forhawaiian-language/.

"News." National Parks Service. Accessed March 03, 2017. https://www.nps.gov/puhe/learn/news/index.htm.

Nowotny, Mary. "Home For a Millennial Culture." NMAI Magazine Website. 2011. Accessed April 14, 2017. http://www.americanindianmagazine.org/story/home-millennialculture?page=show.

"OAHU SCHOOL PROGRAMS." The Hawaii Nature Center. Accessed March 4, 2017. http://hawaiinaturecenter.org/nature-programs/oahu-school-programs/.

"OHA Prepares to Assume Management of Waimea Valley." Home – Hawaii News Now – KGMB and KHNL. September 28, 2007. Accessed March 27, 2017. http://www.hawaiinewsnow. com/story/7145047/oha-prepares-to-assume-management-of-waimea-valley.

"Oklahoma Tribal History." The American Indian Cultural Center and Museum. Accessed March 15, 2017. http://www.theamericanindiancenter.org/oklahoma-tribal-history.

"Our History". English Heritage. English Heritage Trust. Accessed January 17, 2017. http://www.english-heritage.org.uk/about-us/our-history/.

"Our History." Imiloa. Accessed March 07, 2017. http://www.imiloahawaii.org/105/our-history.

"Our history." Seabird Island Band. Accessed March 17, 2017. http://www.seabirdisland.ca/index.php/who-we-are/our-history/.

"Our Organisation Te Uru Taumatua." Tuhoe. Accessed March 12, 2017. http://www.ngaituhoe.iwi.nz/organisation.

PBS. Accessed January 6, 2017. http://www.pbs.org/e2/design.html.

CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

Pa. "Stonehenge visitors attack 'chaos' at new £27m centre." The Telegraph. February 05, 2016. Accessed February 17, 2017. http://www.telegraph.co.uk/travel/news/Stonehenge-visitors-attack-chaos-at-new-27m-centre/.

Paiva, Derek. "Go Fish!: The restoration of Oahu's Paepae o Heeia Hawaiian Fishpond." Hawaii Magazine. July 28, 2014. Accessed February 2, 2017. http://www.hawaiimagazine.com/blogs/hawaii_today/2014/7/28/oahu_heeia_hawaiian_fishpond_restoration.

"Parks Australia." Cultural Centre | Uluru-Kata Tjuta National Park | Parks Australia. Accessed January 15, 2017. https://parksaustralia.gov.au/uluru/do/cultural-centre.html.

"Parks Australia." World heritage | Uluru-Kata Tjuta National Park | Parks Australia. Accessed March 17, 2017. https://parksaustralia.gov.au/uluru/people-place/heritage.html.

"Patkau Architects Seabird Island School." Patkau Architects Seabird Island School. Accessed March 16, 2017. http://www.patkau.ca/project/seabird.htm#.

Patkau, John. "Patkau Architects: Investigations into the Particular." The Journal of the International Institute 3, no. 2 (1996). Accessed March 16, 2017. https://quod.lib.umich.edu/j/jii/4750978.0003.216/--patkau-architects-investigations-into-the-particular?rgn=main;view=fulltext.

"Petroglyph Glow. Taliesin West." Andrew Pielage Photography. November 10, 2013. Accessed March 31, 2017. http://apizm.com/petroglyph-glow-taliesin-west/.

Pettit, Emily J. "Aborigines' Dreaming or Britain's Terra Nullius: Perceptions of Land Use in Colonial Australia." lowa Historical Review 05, no. 1 (2015): 23–60. Accessed March 17, 2017. http://ir.uiowa.edu/cgi/viewcontent.cgi?article=1030&context=iowa-historical-review.

Pitoiset, Anne: "New Caledonia." Maison de la Nouvelle-Caledonie. Accessed March 17, 2017. http://www.mncparis.fr/ulftp/mnc_general_uk.pdf.

Poopong, Kitticoon. "Seabird Island School / By Patkau Architects." House Variety: The World Of Architecture . October 22, 2011. Accessed March 17, 2017. http://housevariety. blogspot.com/2011/10/seabird-island-school-by-patkau.html#.WPUzYfnyupo.

"Practical Information: History and economy." Discover New Caledonia. Accessed March 17, 2017. http://www.newcaledonia.travel/en/history-economy.

Price-Waldman, Sam. "The City of the Future Is Already Here." The Atlantic. Accessed March 03, 2017. https://www.theatlantic.com/video/index/502823/arcosanti-city-of-the-future/.

"Production." Paepae. Accessed February 2, 2017. http://paepaeoheeia.org/aina-momona/.

"Programs." Paepae. Accessed February 2, 2017. http://paepaeoheeia.org/programs/.

"Programs." Waimea Valley. Accessed March 4, 2017. http://www.waimeavalley.net/programs.

"Project Timeline." The American Indian Center. Accessed March 12, 2017. http://www.theamericanindiancenter.org/project-timeline.

Pukui, Mary K. "Songs (meles) of old Ka'u, Hawaii." Journal of American Folklore, 1949.

Pukui, Mary Kawena, and Samuel H. Elbert. Hawaiian dictionary: Hawaiian-English, English-Hawaiian. Honolulu: University of Hawaii Press, 1991.

Pukui, Mary Kawena, Samuel H. Elbert, Esther T. Mookini, and Mary Kawena Pukui. Pocket place names of Hawai'i. Honolulu: University of Hawaii Press, 1989.

Pukui, Mary Kawena. 'Ōlelo No'eau: Hawaiian Proverbs and Poetical Sayings. Honolulu: Bernice Pauahi Bishop Museum Press, 1983.

"Pu'u Kohola." Pacific Worlds & Associates . 2006. Accessed March 16, 2017. http://pacificworlds.com/kawaihae/native/native2.cfm.

"Pu'ukoholā Heiau." Hawaii Pacific Parks Association. Accessed March 03, 2017. https://www.hawaiipacificparks.org/parks/puukohola/.

"Puukohola Heiau National Historic Site." Go Hawaii. 2017. Accessed March 16, 2017. https://www.gohawaii.com/big-island/regions-neighborhoods/kohala-coast/puukohola-heiau-national-historic-site/.

"Pu'ukohola Heiau National Historic Site." National Park Foundation. Accessed March 02, 2017. https://www.nationalparks.org/explore-parks/puukohola-heiau-national-historic-site

"Pu'ukohola Heiau National Historic Site." Pacific Island Network 17 (July 2009): 7.



"Pu`ukohola Heiau National Historic Site Tract and Boundary Data." Data.gov. May 17, 2013. Accessed April 03, 2017. https://catalog.data.gov/dataset/puukohola-heiau-national-historic-site-tract-and-boundary-data.

"Pu'u O Mahuka Heiau State Historic Site." Division of State Parks. Accessed July 1, 2016. http://dlnr.hawaii.gov/dsp/parks/oahu/puu-o-mahuka-heiau-state-historic-site/.

Report of Mrs. Emma Ahuena Taylor, 1925.

"Resources | History of Pineapple | Dole Plantation." DOLE. Accessed March 17, 2017. https://www.doleplantation.com/resources/.

Ruane, Michael E. "Scientists Studying USS Arizona's Trapped Oil." The Honolulu Advertiser, January 2, 2007. Accessed March 16, 2017. http://the.honoluluadvertiser.com/article/2007/Jan/02/ln/FP701020336.html.

"School Groups." Education | Brambuk - The National Park & Cultural Centre | Grampians-Gariwerd | Halls Gap. Accessed February 16, 2017. http://www.brambuk.com.au/education.

"School information." Seabird Island Community School. Accessed March 16, 2017. http://www.seabirdschool.ca/index.php/about-us/school-information/.

"Seabird Island Band." The Canadian Business Journal. December 02, 2014. Accessed March 17, 2017. http://www.cbj.ca/seabird_island_band/.

"Seabird Island School / Patkau Architects." Architecture Lab. January 3, 2011. Accessed March 17, 2017. http://architecturelab.net/seabird-island-school-patkau-architects/.

Sherratt, Katharine. "Social and Economic Characteristics of Ladakh, India." Geology for Global Development. Accessed March 17, 2017. https://www.geolsoc.org.uk/~/media/shared/documents/Events/Past%20Meeting%20Resources/Himalaya%2014%20Cultural%20Background%20to%20Ladakh.pdf.

Site designed and developed by bka interactive ltd, Auckland, New Zealand (www.bka.co.nz). "Tuhoe Te Uru Taumatua." Jasmax. Accessed March 12, 2017. http://www.jasmax.com/work/tuhoe-te-uru-taumatua/sectors/cultural-and-civic/1152.

Snell, Conor. "New Agricultural Learning Center brings sustainable farming back to UMass." The Massachusetts Daily Collegian. April 26, 2013. Accessed April 17, 2017. http://dailycollegian.com/2013/04/26/new-agricultural-learning-center-brings-sustainable-farming-back-to-umass/.

Southichack, M. K., Ph.D. "Wahiawa Irrigation System Economic Impact Study". December 22, 2016 doi:http://hdoa.hawaii.gov/wp-content/uploads/2013/01/WIS-Econ-Impact-Study-2008.pdf.

State of Hawaii: Department of Health. "Hawaii Administrative Rules Title 11 Department of Health Chapter 54 Water Quality Standards." December 21, 2016. doi:http://health.hawaii. gov/opppd/files/2015/06/11-54.pdf. §11-54-3.

State of Hawai'i: The Office of Hawaiian Affairs. Land and Property Management. "Request For Proposals: OHA RFP No. LPM 2016-02 for a Master Plan for Kūkaniloko." News release, March 11, 2016. Procurement: Solicitations & Awards. Accessed October 17, 2016. http://19of32x2yl33s8o4xza0gf14.wpengine.netdna-cdn.com/wp-content/uploads/RFP-LPM-PP-2016-02-3.pdf.

"Stockbridge School of Agriculture." Stockbridge. Accessed April 17, 2017. https://stockbridge.cns.umass.edu/academics/umass-agricultural-learning-center.

"Stonehenge." History.com. 2010. Accessed January 16, 2017. http://www.history.com/topics/british-history/stonehenge.

"Stonehenge Visitor Centre by Denton Corker Marshall opens tomorrow." Dezeen. De-cember 17, 2013. Accessed January 13, 2017. https://www.dezeen.com/2013/12/17/stonehenge-visitor-centre-by-denton-corker-marshall-opens-tomorrow/.

"Stonehenge — Visitor Centre — Honouring the Ancient Dead." Honouring the Ancient Dead. Accessed January 17, 2017. http://www.honour.org.uk/stonehenge-visitor-centre/.

"Stonehenge Visitor Centre / Denton Corker Marshall." ArchDaily. December 24, 2013. Accessed January 17, 2017. http://www.archdaily.com/461242/stonehenge-visitor-centredenton-corker-marshall.

"Strategic Plan & Focus." The Office of Hawaiian Affairs (OHA). Accessed January 10, 2017. http://www.oha.org/strategicplan.

"Studios, Facilities & Housing." Atlantic Center for the Arts. January 05, 2016. Accessed March 17, 2017. http://atlanticcenterforthearts.org/facilities/studios-facilities-housing/.

Soehren, Lloyd J. A catalog of Hawai'i place names. Honokaa, Hl: L.J. Soehren, 2005.

JAN 2019 | CONCEPTUAL MASTER PLAN FOR OHA'S WAHIAWĀ LANDS

"Taliesin West Tickets & Tours." Frank Lloyd Wright Foundation. Accessed April 03, 2017. http://franklloydwright.org/taliesin-west/tickets-tours/.

Tawa, Michael, ed. "Liru and Kuniya." Architecture Australia 85, no. 2 (March 1, 1996). http://architectureau.com/articles/liru-and-kuniya/.

"Te Uru Taumatua." Tuhoe. Accessed March 12, 2017. http://www.ngaituhoe.iwi.nz/tut.

"The Construction of the USS Arizona Memorial." Visit Pearl Harbor. March 21, 2016. Accessed March 11, 2017. https://visitpearlharbor.org/everything-you-need-to-know-about-the-uss-arizona-memorial/.

"The Fishpond." Paepae. Accessed February 2, 2017. http://paepaeoheeia.org/thefishpond/.

"The Model." CATALYST. Accessed March 03, 2017. http://www.arcosanti-catalyst.com/the-model/.

The Office of Hawaiian Affairs. "Kūkaniloko - The Office of Hawaiian Affairs (OHA)." The Office of Hawaiian Affairs (OHA). Accessed October 17, 2016. http://www.oha.org/aina/halawa-luluku-interpretive-development-hlid/kukaniloko/.

"The Tjibaou Cultural centre and adck." ADCK - The Tjibaou Cultural centre and adck. Accessed March 8, 2017. http://www.adck.nc/presentation/english-presentation/the-tjibaou-cultural-centre-and-adck.

Thomas, Emma. "The face of prehistoric Britain: Forensic scientist uses Neolithic man's 5,500-year-old skull to create lifelike image." Daily Mail Online. December 17, 2013. Ac-cessed February 17, 2017. http://www.dailymail.co.uk/news/article-2525035/New-27million-Stonehenge-visitor-centre-opens-reconstruction-Neolithic-man.html.

"Tjibaou Cultural Centerat the heart of Kanak culture." Travel to New Caledonia - Tjibaou Cultural Center. Accessed December 19, 2016. http://www.newcaledonia.travel/en/noumea/tjibaou-cultural-center.

"Tjibaou Cultural Centre at Noumea: tribute to a leader." QUT News. Accessed March 10, 2017. http://www.qutnews.com/2014/07/03/tjibaou-cultural-centre-at-noumea-tribute-to-a-leader/#.WMNm82_yt9A.

"Travel to New Caledonia – Tjibaou Cultural Center." Travel to New Caledonia – Tjibaou Cultural Center. Accessed March 10, 2017. http://www.newcaledonia.travel/en/noumea/tjibaou-cultural-center.

"To View the Pu'ukohola Heiau." Mason Architects. Accessed March 03, 2017. http://www.masonarch.com/NewBuildingDesign/Puukohola/.

Tortorello, Michael. "An Early Eco-City Faces the Future." The New York Times. February 15, 2012. Accessed November 28, 2016. http://www.nytimes.com/2012/02/16/garden/anearly-eco-city-faces-the-future.html.

Tourism Australia. Brambuk The National Park & Cultural Centre. http://www.tourism.australia.com/.

"Tuhoe History." Tuhoe. Accessed March 12, 2017. http://www.ngaituhoe.iwi.nz/our-history.

"Tuhoe Hua Orana." Tuhoe. Accessed March 12, 2017. http://www.ngaituhoe.iwi.nz/hua-orana." Tuition and Payment Options." Taliesin. Accessed March 03, 2017. http://taliesin.edu/tuition-and-financial-aid/.

Valcourt, Katrina. "Loko Ea (2016)." Historic Hawaii Foundation. November 17, 2016. Accessed March 10, 2017. http://historichawaii.org/2016/11/17/loko-ea-2016/.

"Visit." The American Indian Center. Accessed March 14, 2017. http://www.theamericanindiancenter.org/visit/.

Visit Victoria. "History and heritage, Grampians, Victoria, Australia." Visit Victoria. Accessed February 15, 2017. http://www.visitmelbourne.com/Regions/Grampians/Things-to-do/History-and-heritage.

Wahiawā Town Task Force. "Wahiawā Town Master Plan." Task Force Report, July 1994. doi:http://wahiawacbdo.org/1994WahiawaTownMasterPlan.pdf.

"Waimea Valley." The Office of Hawaiian Affairs (OHA). Accessed March 4, 2017. http://www.oha.org/aina/waimea-valley/.

Ward, Logan. "Seeking the Wright Path at Taliesin West." Architect. December 09, 2014. Accessed March 4, 2017. http://www.architectmagazine.com/practice/seeking-the-wright-path-at-taliesin-west o.

Webb, Lahilahi. "Kukaniloko: Birthplace of Aliis, Oahu's Traditional Mecca of Ancient Times."



Webb, Lahilahi, Where Kukaniloko Was, 1925.

West, Barbara A. Encyclopedia of the peoples of Asia and Oceania. New York: Facts On File, 2009.

Williams, David. Writing postcommunism: towards a literature of the east European ruins. Basingstoke: Palgrave Macmillan, 2013.

Wright, Alexis. Take power like this old man here: an anthology of writings celebrating twenty years of land rights in Central Australia 1977–1997. Alice Springs, N.T.: IAD Press, 1998.

UNESCO World Heritage Centre, "Uluru-Kata Tjuta National Park," UNESCO World Heritage Centre, , accessed February 1, 2017, http://whc.unesco.org/en/list/447.

United States. National Park Service . The Legacy of Pearl Harbor. Accessed March 16, 2017. https://www.nps.gov/valr/upload/press kit.pdf.

"University of California Wine, Beer and Food Laboratory." Flad Architects: Home. Accessed April 17, 2017. http://www.flad.com/projects/detail.php?project=cal wbf.

Uyeoka, Kelley, ed al. Kūkaniloko Ka Piko Ali'i no Hawai'i DRAFT Archaeological Preservation Plan for Kūkaniloko. 2016.

"Waste Water." Tuhoe. Accessed March 12, 2017. http://www.ngaituhoe.iwi.nz/waste-water.

"Water." Tuhoe. Accessed March 12, 2017. http://www.ngaituhoe.iwi.nz/water.

"WBF Lab / Flad Architects." ArchDaily. September 13, 2011. Accessed April 18, 2017. http://www.archdaily.com/168716/wbf-lab-flad-architects.

"Who are Tuhoe?" New Zealand Geographic. Jan. & Ffeb. 2013. Accessed March 16, 2017. https://www.nzgeo.com/stories/who-are-tuhoe/.

"Winery, Brewery, and Food Science Laboratory–Stormwater Management System." Urban Ecology | CMU SoA. November 16, 2016. Accessed April 17, 2017. https://urbanecologycmu.wordpress.com/2016/10/15/winery-brewery-and-food-science-laboratory-stormwater-management-system/.

Yamada, Lisa. "Giving Back in Paradise." Kikaha by Island Air. Accessed February 2, 2017. http://kikahabyislandair.com/giving-back-in-paradise/.

"\$15m Tuhoe HQ described as obscene." Radio New Zealand. March 09, 2014. Accessed March 12, 2017. http://www.radionz.co.nz/news/national/238355/\$15m-tuhoe-hq-described-as-obscene.





725 KAPI'OLANI BLVD, 4TH FLOOR HONOLULU, HAWAI'I 96813 (808) 592-2345