BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

August 18, 2015

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair
ADAM C. WONG, Vice Chair
THERESIA C. McMURDO
DAVID C. HULIHEE
KAPUA SPROAT

ROSS S. SASAMURA, Ex-Officio
FORD N. FUCHIGAMI, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

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NOTICE

The Regular Meeting of the Board of Water Supply, will convene on Monday, August 24, 2015, at 2:00 p.m. in the Board Room, Public Service Building, 630 South Beretania Street, Honolulu, Hawaii.

SPEAKER REGISTRATION

The Board of Water Supply is committed to allowing public testimony at open meetings of the Board.

Please provide your name, phone number and subject matter of testimony when registering **prior to the day of the meeting** by one of the following options:

1. Emailing to board@hbws.org;
2. Faxing to 748-5079;
3. Calling 748-5061;
4. In person – 630 S. Beretania Street, Room 311

Persons wishing to testify may also register by filling out the registration form **on-site on the day of the meeting.**

Persons who have not registered to testify will be given an opportunity to speak on an item following the oral testimonies of the registered speakers.

Testimony is limited to three minutes and shall be presented by the registered speaker only.

WRITTEN TESTIMONY

Written testimony may be emailed to board@hbws.org or faxed to 748-5079, **prior to the day of the meeting**, for distribution at the meeting.

13 copies are requested if written testimony is submitted **on-site on the day of the meeting**.

If submitted, written testimonies, including the testifier's address, email address, and phone number may be posted on the Board of Water Supply website.

PHYSICALLY CHALLENGED REQUESTS

If you require special assistance, auxiliary aid and/or service to participate in this meeting (i.e. sign language interpreter; interpreter for language other than English, or wheelchair accessibility), please contact 748-5061 or email your request to board@hbws.org **at least three business days prior to the meeting date**.

The agenda for the August 24, 2015 Regular Meeting of the Board of Water Supply is as follows:

ITEMS REQUIRING BOARD ACTION

1. Approval of the Minutes of the Regular Meeting Held on July 27, 2015
2. Approval of Board of Water Supply Quarterly and Annual Operational Performance Metrics and an Update on Board of Water Supply Strategic Plan Implementation
3. Topics for Future Board Meetings

ITEMS FOR INFORMATION

1. Haiku Stairs Presentation by the Friends of Haiku Stairs
2. Moanalua and Waimalu Aquifer Systems Update
3. Enterprise Organizational Study Update
4. Capital Improvement Program Quarterly Update
5. Capital Projects Program and Construction Management Quarterly Update
6. Status Update of Groundwater Levels at All Index Stations
7. Recruitment Status
8. Water Main Repair Report for July 2015

M I N U T E S

REGULAR MEETING
OF THE
BOARD OF WATER SUPPLY

August 24, 2015

At 2:01 PM on August 24, 2015 in the Board Room of the Public Service Building at 630 South Beretania Street, Honolulu, Hawaii, Board Chair Miyashiro called to order the Regular Meeting.

Present:	Duane R. Miyashiro, Chair Adam C. Wong, Vice-Chair (left at 3:50 p.m.) David C. Hulihee Ross S. Sasamura Kapua Sproat
Also Present:	Ernest Lau, Manager and Chief Engineer Ellen Kitamura, Deputy Manager and Chief Engineer Alex Ubiadas Tracy Burgo Barry Usagawa Daryl Hiromoto Erwin Kawata Robert Morita Kevin Ihu Jason Takaki Paul Kikuchi Jennifer Elflein Dean Seki Thelma Kimura Leanne Matsumoto Teri Akana Dymian Racoma Travis Sonomura
Others Present:	Krishna Jayaram, Deputy Corporation Counsel Dan Lawrence, Deputy Corporation Counsel Craig Von Bargen, CDM Smith Eric Iwamoto, Bowers + Kubota Mike Prett, Brown and Caldwell Stephanie Chin, Brown and Caldwell Robert Chenet, Commission on Water Resource Management Vernon Ansdell, Friends of Haiku Stairs John Goody, Friends of Haiku Stairs Cheryl Goody, Friends of Haiku Stairs William Ridgway, Friends of Haiku Stairs

Bob Twogood, Friends of Haiku Stairs
Mahealani Cypher, Koolau Foundation
Tom Masterson, Momentum LLC
John Hall, Hawaiian Trail and Mountain Club
Thea Ferentinos, Hawaiian Trail and Mountain Club
Gail Ridge
Ashley Douglas
Rae Leong
Ken Rose
Paul Eyre
Jay Silberman
Matthew Kievlan

Absent: Theresia C. McMurdo
Ford N. Fuchigami

APPROVAL OF MINUTES

Approval of the Minutes of the Regular Meeting held on July 27, 2015

Chair Miyashiro confirmed that the Board Members received Board Member McMurdo's proposed revisions to the minutes then proceeded with a motion.

MOTION TO APPROVE AS AMENDED

Ross Sasamura and Adam Wong motioned and seconded, respectively, to approve the Minutes of the Regular Session Meeting of July 27, 2015, as amended by Ms. McMurdo.

Mr. Miyashiro stated that Ms. McMurdo could not attend today's meeting so on her behalf, he explained her rationale for her revisions. He stated that Ms. McMurdo feels that the minutes should be more of a summary as opposed to a transcript of the proceedings and she feels her proposed revisions accurately reflect the discussion.

Board Member Sproat stated that she also had proposed amendments as follows: On page 7, line 5, replace "below the aquifer and the ground surface" with "in the groundwater." On page 9, 3rd paragraph, line 6, replace "under the water table" with "in the groundwater." On page 11, 4th paragraph, 2nd line, replace "trust factor" with "trust doctrine." On page 12, 3rd paragraph, line 5, replace "corporation" with "cooperation."
Mr. Miyashiro confirmed that the Board Members followed Ms. Sproat's proposed revisions then asked for another motion.

MOTION TO APPROVE AS FURTHER AMENDED

Ross Sasamura and Adam Wong motioned and seconded, respectively, to approve the Minutes of the Regular Session Meeting of July 27, 2015, as further amended by Ms. Sproat. The motion was unanimously carried.

"August 24, 2015

APPROVAL OF OPERATIONAL PERFORMANCE METRICS AND UPDATE ON STRATEGIC PLAN

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Approval of Board of Water Supply Quarterly and Annual Operational Performance Metrics and an Update on Board of Water Supply Strategic Plan Implementation

Ellen Kitamura, Deputy Manager, will present a brief update on the Board of Water Supply Strategic Plan, 2014-2017. The presentation will also include proposed performance metrics to measure progress in meeting the three strategic goals set in the strategic plan.

We recommend adoption of the proposed performance metrics.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachment"

DISCUSSION

Ellen Kitamura, Deputy Manager, gave the presentation. She gave an update of BWS's Strategic Plan and proposed performance metrics to measure progress in meeting the three strategic goals set in the Strategic Plan.

Ms. Sprout inquired whether there were other metrics for resource sustainability. Ms. Kitamura said it was difficult to identify performance metrics for resource sustainability because the data needed is complex and currently not easily obtainable. Manager Lau stated that the amount of effort to come up with data is a big project and would take time to gather. He mentioned that Ms. Kitamura is checking with other utilities like Albuquerque to see what they are using as metrics for this area. Performance metrics for this goal can be refined or changed as BWS learns more, and they are open to suggestions.

Mr. Miyashiro asked how the Department determined the metric or the goal in instances where there was not an AWWA standard. He gave an example where the target for estimated bills was set to less than two percent, and BWS is currently at 34 percent which is excellent. Ms. Kitamura replied that BWS did a survey of other utilities and that the average was within the two percent range.

Mr. Lau mentioned that as BWS gains a better experience with the usefulness of the proposed metrics and targets, the Department can make adjustments if the Board feels that changes should be made. Mr. Lau stated that they would update the Board on an on-going basis, as indicated for each performance metric.

Ms. Kitamura informed the Board of a correction to the Performance and Metrics chart; the main breaks per 100 miles of pipe should be done annually, not monthly. She stated that Mr. Hiromoto would still be providing his monthly reports of main breaks that occur during the previous month.

MOTION TO APPROVE AS AMENDED

David Hulihee motioned to approve BWS Quarterly and Annual Operational Performance Metrics, as amended. The motion was seconded by Kapua Sproat and unanimously carried.

BWS QUARTERLY AND ANNUAL OPERATIONAL PERFORMANCE METRICS APPROVED, AS AMENDED ON AUGUST 24, 2015			
	AYE	NO	COMMENT
DUANE R. MIYASHIRO	X		
ADAM C. WONG	X		
THERESIA C. MCMURDO			ABSENT
DAVID C. HULIHEE	X		
KAPUA SPROAT	X		
ROSS S. SASAMURA	X		
FORD N. FUCHIGAMI			ABSENT

WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu

Board of Water Supply
City and County of Honolulu

Strategic Plan Update

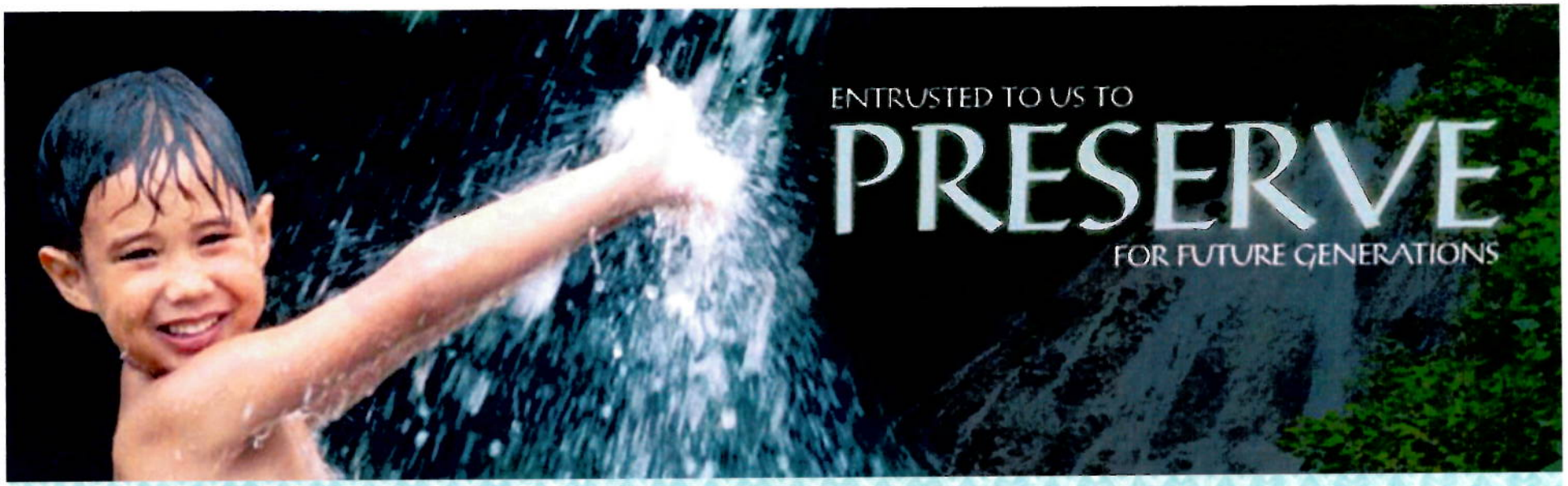
Board Meeting – August 24, 2015

Agenda

- Background
- Status
- Proposed Performance Metrics

BWS Vision and Mission

- Vision: 'Ka Wai Ola – Water for Life'
- Mission: To provide safe, dependable, and affordable water now and into the future

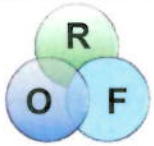


Sustainability Goals

- **Resource Sustainability (Safe)**
  Protect and manage our groundwater supplies and watersheds through adaptive and integrated strategies.

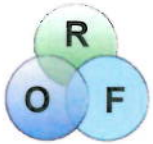
- **Operational Sustainability (Dependable)**
  Foster a resilient and collaborative organization utilizing effective and proactive operational practices consistent with current industry standards.

- **Financial Sustainability (Affordable)**
  Implement sound fiscal strategies to finance our operating and capital needs to provide dependable and affordable water service.



Key Action Plans

Strategic Objective	Action Plans
Climate Change: We will adapt to climate change to manage Oahu's water resources and protect the limited water supply.	• Directed hydro-geologic resource research • Watershed Management Plans • Active collaboration with AWWA and other water agencies
Water Quality: We will protect, preserve and collaborate to ensure the safety and quality of Oahu's fresh water resource.	• Regular water quality monitoring and reporting • Source water protection program • Treatment to meet water quality standards
Communication: We will communicate the value of water to engage the community in a shared stewardship of Oahu's water resources.	• Use multi-media to keep internal and external stakeholders informed of BWS programs, projects and plans • Increase educational workshops and tours to instill better understanding of importance of water stewardship • Broaden the BWS message of the Value of Water
Organization: We will ensure the necessary workforce and competencies to support the BWS needs.	• Conduct an Enterprise Organizational Study • Continue Multi-Skill worker program • Expand/Develop FO and WSO Apprenticeship programs • Develop Construction Inspector Aide program
Infrastructure: We will renew and improve the water system to ensure water system adequacy, dependable service, and operational efficiency.	• Annual CIP • 6-Year CIP • BWS Water Master Plan and 30-Year CIP • FO and WSO Preventative maintenance program • FO Leak Detection Program
Customer Service: We will proactively and consistently provide a quality experience in every customer interaction.	• Quality assurance program
Technology: We will ensure that our technology systems are current and leverage opportunities in technology to effectively support current and future BWS needs.	• 5 Year IT Strategic Plan • Meter Reading Study
Financial Management: We will pursue and leverage financial opportunities and implement strategies to affordably meet our financial and regulatory requirements.	• SRF Refinancing • Investment grade audit



Resource Sustainability

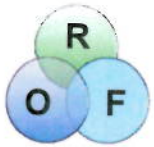
Protect and manage our groundwater supplies and watersheds through adaptive and integrated strategies.

Strategic Objectives	Action Plans	Key Metrics
We will adapt to climate change to manage Oahu's water resources and protect the limited water supply.	• Directed hydro-geologic research • Watershed Management Plans • Active Collaboration with AWWA and other water agencies	• Stable Head Levels at 14 Index Wells
We will protect, preserve and collaborate to ensure the safety and quality of Oahu's fresh water resource.	• Regular water quality monitoring and reporting • Source water protection program • Treatment to meet water quality standards	• Regulatory Compliance Rate
We will communicate the value of water to engage the community in a shared stewardship of Oahu's water resources.	• Use multi-media to keep internal and external stakeholders informed of BWS programs, projects and plans • Increase educational workshops and tours to instill better understanding of importance of water stewardship • Broaden the BWS message of the Value of Water	• Customer Satisfaction

Operational Sustainability

Foster a resilient and collaborative organization utilizing effective and proactive operational practices consistent with current industry standards.

Strategic Objectives	Action Plans	Metrics - Measure effectiveness
We will ensure the necessary workforce and competencies to support the BWS needs.	• Conduct an Enterprise Organizational Study • Continue Multi-Skill worker program • Expand/Develop FO and WSO Apprenticeship programs • Develop Construction Inspector Aide program	• Training Hours/FTE • Employee Turn-Over Rate
We will renew and improve the water system to ensure water system adequacy, dependable service, and operational efficiency.	• Annual CIP • 6-Year CIP • BWS Water Master Plan and 30-Year CIP • FO and WSO Preventative maintenance program • FO Leak Detection Program	• CIP Encumbrance Rate • Mainbreaks per 100 miles
We will proactively and consistently provide a quality experience in every customer interaction	• Quality Assurance Program	• Average Wait Time • Abandonment Rate
We will ensure that our technology systems are current and leverage opportunities in technology to effectively support current and future BWS needs	• 5 Year IT Strategic Plan • Meter Reading Study	• Completion/Execution of Plan



Financial Sustainability

Implement sound fiscal strategies to finance our operating and capital needs to provide dependable and affordable water service.

Strategic Objectives	Action Plans	Metrics - Measure effectiveness
We will pursue and leverage financial opportunities and implement strategies to affordably meet our financial and regulatory requirements.	• SRF Refinancing • Investment grade audit	• Estimated Bill Rate • Operating Ratio • Debt Ratio

Performance Metrics

Goals	Performance Metric	Baseline	Current	Target	AWWA	Status	Interval
Resource	Stable Head Levels at Index Wells	93%	93%	100%	NA	■	M
Resource	Regulatory Compliance	100%	100%	100%	100%	▲	A
Resource	Resident Satisfaction (% Strong Sat)	59%	59%	>59%	NA	▲	BA
Operational	Training hours/FTE	16	16	20	20	■	A
Operational	Employee Turn-Over Rate	7%	8%	7%	5%	■	A
Operational	CIP Encumbrance Rate	98%	103%	100%	NA	▲	Q
Operational	Mainbreaks per 100 Miles of Pipe	15	14	14	16	▲	A
Operational	Call Center Average Wait Time (min)	6.9	1.49	<2.00	1.9	▲	Q
Operational	Call Center Abandon Rate	22%	7%	5%	8%	■	Q
Financial	Estimated Bills Rate	7%	0.34%	<2%	NA	▲	Q
Financial	Operating Ratio	57%	53%	60%	69%	▲	A
Financial	Debt Ratio	4.07	6.35	1.60	1.45	▲	A

▲ Excellent ■ Good ▼ Fair ▼ Poor

M – Monthly Q – Quarterly A – Annually BA – Biennially

WATER FOR LIFE

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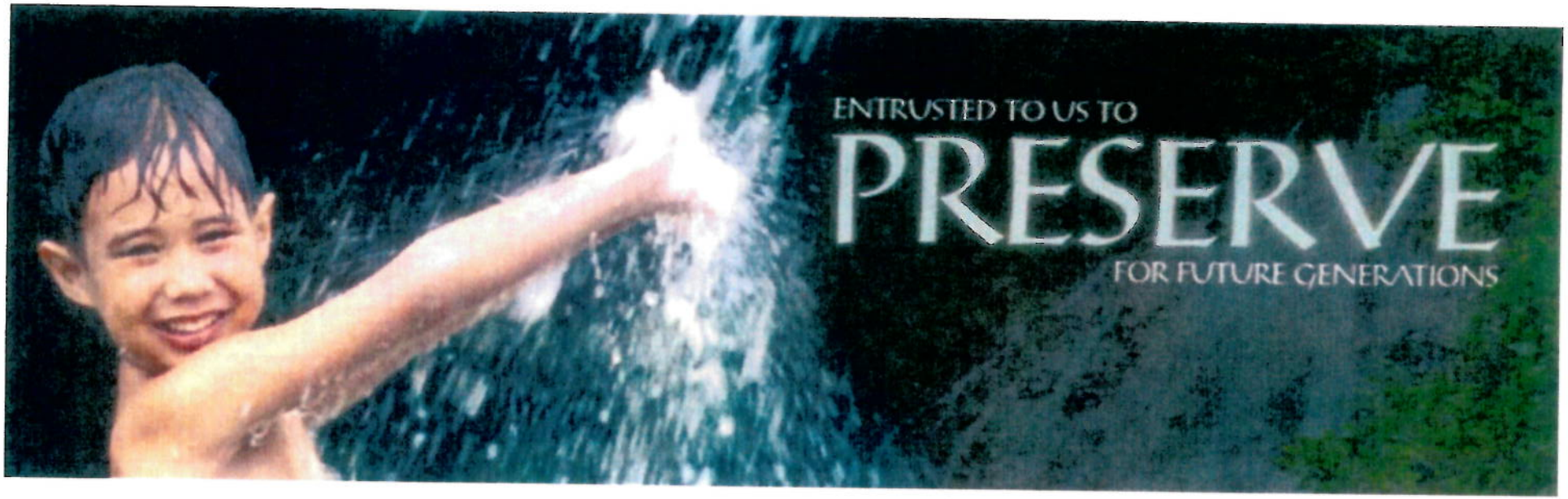
Questions?



MAHALO

"August 24, 2015

TOPICS FOR FUTURE BOARD MEETINGS

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96834

Chair and Members:

Subject: Topics for Future Board Meetings

We would like to take this time to allow the members of the Board to inform us of any topic or concern pertaining to Board of Water Supply operations that the Board would want addressed at future Board Meetings.

There is one pending topic that was requested by the Board, which is an update on Cyber Security, which will be presented at a future Board meeting after the Department completes its review.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer"

DISCUSSION

Board Member Sproat mentioned that at July's Board meeting, the Board discussed adopting a resolution with respect to Red Hill and requested that this be addressed. Manager Lau added that at July's Board meeting, Board Member Fuchigami suggested that the Board write a letter to the congressional delegation. Mr. Lau requested that this topic also be addressed.

Mr. Miyashiro reminded the Board to contact Mr. Lau or himself if they would like any other items to be placed on the agenda.

ITEM FOR INFORMATION NO. 1

"August 24, 2015

HAIKU STAIRS PRESENTATION

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Haiku Stairs Presentation by the Friends of Haiku Stairs

Dr. Vernon Ansdell and Mr. John Goody of the Friends of Haiku Stairs will give presentations on Haiku Stairs.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION

Mr. Lau introduced Dr. Ansdell and Mr. Goody who will be giving presentations. Mr. Miyashiro asked that if anyone wants to testify to take the podium, identify themselves, and to try to keep their testimony to three minutes.

Dr. Ansdell opened his presentation by saying that the Haiku Stairs is an ecological treasure and is a priceless cultural and educational resource. They're listed as one of the 10 most amazing stairways in the world and listed as one of the 30 surreal places on earth. He talked about the history of Haiku Stairs; gave background on the Friends of Haiku Stairs; maintenance done at Haiku Stairs; background on the Haiku Stairs working group; the safety of the Stairs; and the cultural, educational, archaeological and recreational opportunities of Haiku Stairs.

Mr. Goody opened his presentation by stating the two options for the disposition of Haiku Stairs; conveyance to another agency or destruction of the Stairs. The purpose of his presentation was to show the Board that conveyance to another agency is the better fiduciary choice for BWS, better meets the doctrine for enhancing public good, and is the least administrative and legal burden to BWS. Mr. Goody showed cost, duration and risk comparisons of the two options. Mr. Goody concluded by stating that the Friends of Haiku Stairs asks BWS for six months to further work with agencies on a plan for transfer and for BWS to agree to participate in

negotiations with the Friends of Haiku Stairs and partnering agencies on elements of a transfer package.

Ms. Sproat referred to Mr. Goody's presentation where he talked about the area being a recovery habitat for the damselfly. She asked if it is a critical habitat for anything. Mr. Goody replied that it's a recovery habitat.

Board Member Wong asked Mr. Goody if the Friends of Haiku Stairs would support the removal of Haiku Stairs if in six months no agency steps forward and no agreement is in place for a transfer. Mr. Goody replied that he could not give a definitive answer since he can't speak for the Friends of Haiku Stairs, but he feels confident that they can find a solution to this in six months. Mr. Wong stated that BWS has made many attempts to talk to different agencies to see if they were interested in taking over Haiku Stairs. Mr. Lau confirmed this saying that he approached the Department of Land and Natural Resources multiple times, Office of Hawaiian Affairs twice, Department of Parks and Recreation, and the National Parks Service and all entities declined. Mr. Lau added that they also made numerous attempts to contact the Department of Hawaiian Home Lands, but they have not been responsive.

Ms. Sproat inquired if the Friends of Haiku Stairs approached the Trust for Public Land. Mr. Goody said that they did, however, because this is government land, it's not really their kuleana.

Mr. Miyashiro asked Mr. Goody why the agencies, that they approached, were reluctant to move forward on the transfer of Haiku Stairs. Mr. Goody replied that one of the agencies does not have the resources and another agency is interested but a plan has to be developed. Mr. Miyashiro asked if any of the agencies were interested in taking over the Stairs if BWS provided them the $2.5 million. Ms. Sproat asked if the Friends of Haiku Stairs looked into the possibility of an endowment. Mr. Goody stated that agencies would use that money to devote to the Stairs, but not to manage, and he would like to learn more about exploring an endowment. Mr. Lau discussed the challenge of accessing the Stairs. He said that BWS's property is landlocked so the only way hikers could get to the bottom of the Stairs is to cross land owned by different landowners. The other challenge is with the hikers who trespass in the neighborhood, despite BWS's security service and the Honolulu Police Department.

Mr. Miyashiro announced that they will begin public testimony and that this is an item for information only and not for Board action. He asked the testifiers to take the podium, state their name and to limit their testimony to about three minutes.

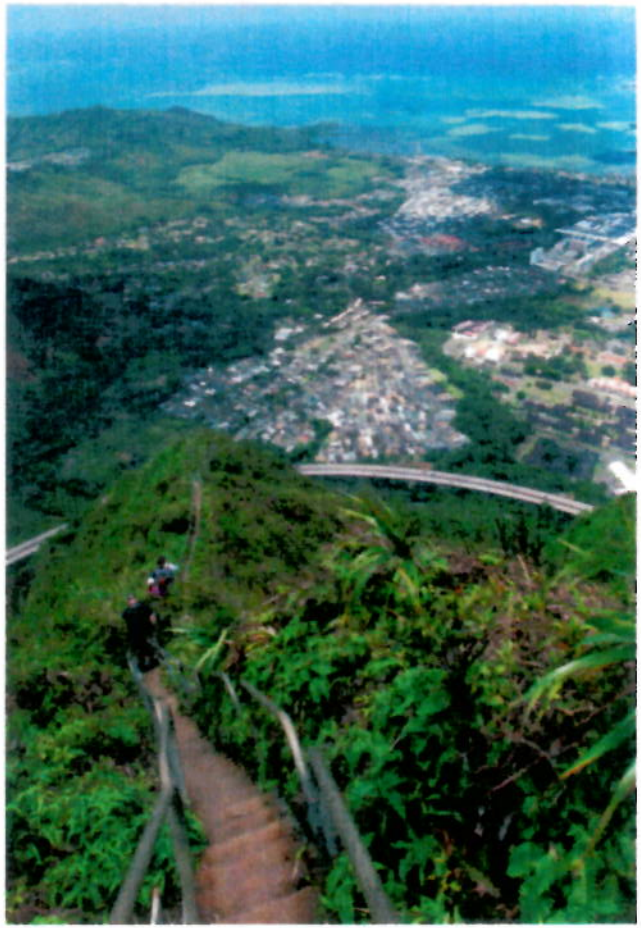
Haiku Stairs

Haiku Stairs- History

- Built in WW2 (1942) by US Navy
- Part of the response to the attack on Pearl Harbor
- Antennae on ridges, transmitter in floor of Haiku Valley
- Very low frequency, long distance radio messages to Tokyo Bay, Indian Ocean, Australia

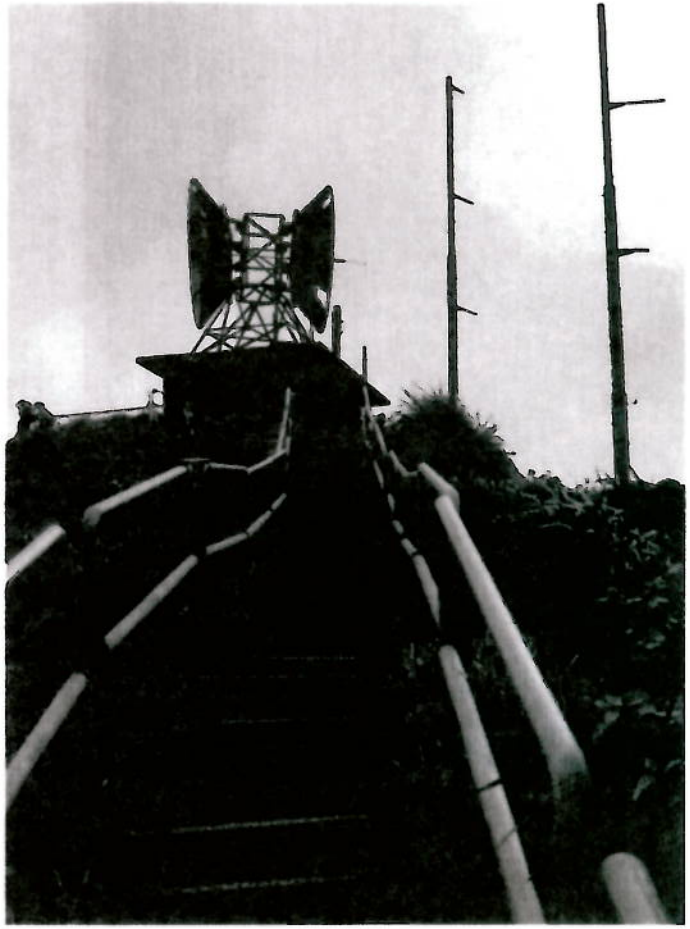
Haiku Stairs : History

- Mid 1950s : Wooden sections converted to steel sections
- 1970s : Taken over by US Coast Guard : Omega Station
- 1987: Haiku Stairs closed for repairs
- 1997 : Omega Station closed and decommissioned
- Early 2000s : Major restoration work ($950,000)
- Eligible for the National and State Historic Register of Historic Places as a District



Friends of Haiku Stairs (FHS)

- Formed in 1987
- Mission - Historic preservation, cultural, educational and recreational programs
- 501 (c) (3)
- www.haikustairs.org



FHS - Maintenance Days

- 2-4 per year
- Invasive plant control
- Native plant restoration
- Native plant survey
- Erosion control
- Minor repairs
- Trash removal

Haiku Stairs

- Haiku Stairs Working Group (Oct 2014)
- Widespread local, national and international interest and support to reopen Haiku Stairs
- Estimated well over 250,000 hikers on Haiku Stairs
- NO significant accident or injury on Haiku Stairs – ever !

Haiku Valley Cultural Preserve

- Outstanding cultural, educational, archaeological and recreational opportunities

FRIENDS OF HAIKU STAIRS

PERSPECTIVES ON THE DISPOSITION OF HAIKU STAIRS

- Brief history and background
- Comparison of options

INTRODUCTION

- There are two options under consideration for the disposition of Haiku Stairs
  - Conveyance to another agency
  - Destruction of the stairs
- What we will show is that conveyance to another agency:
  - Is the better fiduciary choice for BWS
  - Better meets the doctrine for enhancing public good
  - Is the least administrative and legal burden to BWS

Costs of Removing Haiku Stairs

- Permitting process
- Demolition, mitigation and restoration
- Risk and uncertainty: process and implementation
- Diminished public good and "good will"
- Administrative and leadership burden

Process for Removal: Permits

- Permits:
  - EIS, state & perhaps federal compliance
    - Studies: flora, fauna, cultural/historic, soils/geology, socio-economic among others
    - Consultations:
      - SHPO historic site review; Section 106 if also federal
      - ESA, Section 10, several plant species, crimson damselfly
  - Discretionary permits:
    - Conservation District Use Permit

Process for Removal: Permits

- Duration of permitting process:
  - Two years plus for EIS and consultations
  - CDUP additional time depending on public hearings
- Cost:
  - BWS allocated $500K
  - Sufficiency to be determined based on administrative and legal procedural needs

Process for Removal: Implementation

Demolition, Mitigation and Restoration

- Cost of Demolition:
  - $2 M to $4 M depending on design and unknowns
- Cost of Mitigations and Restoration:
  - To be determined in consultations
- Duration:
  - 6 months plus, depending on restoration
- Risk:
  - EIS sufficiency and legal challenges: cost and duration
  - BLNR hearing on CDUP: project disapproval

Transfer Haiku Stairs to State Agency

- Discretionary Permits:
  - None
  - May require CC approval
- Duration:
  - Estimated one year
- Cost: To be negotiated
  - To fund receiving agency management requirements until self-sustaining
  - Estimated $2.5 M sufficient

Transfer Haiku Stairs to State Agency

- Administrative burden of potentially extended negotiations
- Risk: Little to none
  - Transfer conditions subject to BWS negotiated agreement
  - Perceived liability from trespassing hikers: this is a false perception never realized: Haiku Stairs are SAFE. 25 years, +-250,000 climbers: ZERO injuries from the stairs. Far better than most trails.

Comparison of Options

- Cost:
  - Removal: $2.5 to $4.5 M with upward risk from permitting and legal challenges
  - Convey to agency: Negotiated cost, vicinity of $2.5M
- Duration:
  - Removal: 3 years, with upward risk from procedural and legal issues
  - Convey to agency: 1 to 2 years
- Risk and Uncertainty:
  - Removal:
    - Cost risk from process and legal challenges, removal contract offers
    - Implementation risk from CDUP
  - Convey to agency: No risk

Other Considerations

- Public Good: Haiku Stairs is historic, widely appreciated, unique, educational; it's a world famous resource. City invested $1M for repairs; its beneficial use enhances the public good
- Opportunity Cost: time and energy of your executive team over the duration of the process.
- Public Image: To be responsible for removal of a valued, historic element of Windward Oahu when other options are open.

Summary

- Conveying to agency a better choice by virtue of:
  - Lower cost
  - Greater control of the process
  - Less time to accomplish
  - More certainty
  - Reduced management demands
  - Contributes to public good
- Default:
  - If negotiated conveyance to another agency fails, process for removal remains an option.

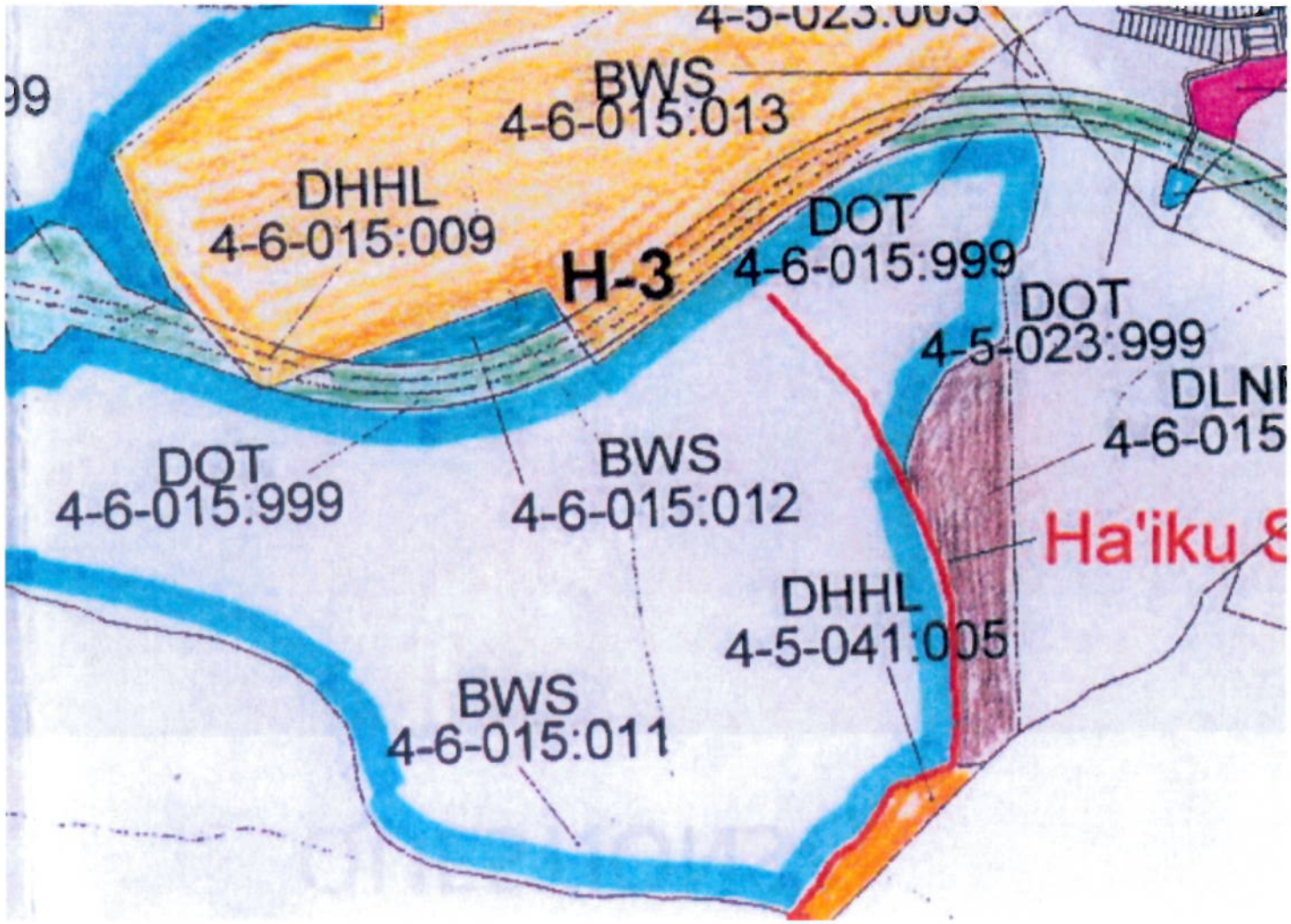
What Do We Ask?

- For 6 months to further work with agencies on a plan for transfer
- Agree to participate in negotiations (perhaps facilitated) with FHS and partnering agencies on elements of a transfer package

QUESTIONS?

Trematolobilia singularis adjacent to Haiku Stairs

Haiku Valley Tax Map



Cooperation should allow public to climb scenic Haiku Stairs

It's bad enough that an ecological treasure has been officially off limits to outdoor enthusiasts for more than 20 years, but even worse that problems created by that ill-advised closure are now being used as an argument to dismantle the Haiku Stairs altogether.

Before public access to the spectacular Windward climb was cut off, thousands of hikers a year safely traversed the roughly 3,990 steps, rewarded for their effort with a Koolau Ridge summit that affords a sweeping view of all the ahupuaa from Kualoa to Mokapu and part of Kailua. Scientists, teachers, students, Native Hawaiian cultural practitioners, tourists and everyday residents with strong legs and strong lungs were welcome to test their mettle, thanks to a simple sign-in and liability waiver system managed by the U.S. Coast Guard, which oversaw the site at the time. According to Friends of the Haiku Stairs, a nonprofit dedicated to preserving the area, more than 10,000 hikers a year climbed what is popularly known as the Stairway to Heaven.

That all changed in 1987, when rising concerns about safety and vandalism prompted the Coast Guard to halt public access. There were efforts over the years to renew legal entry to this remarkable resource, most notably in the early 2000s, when the city paid more than $950,000 to make repairs, with the intention of reopening the stairs and realizing the site's full potential as an recreational, educational, historic and cultural asset. Ownership of the land where hikers parked their cars and accessed the climb had changed hands by then, however, and the site never reopened.

Now, amid a renewed effort, public-access advocates face a Catch-22. Opponents use the disruption caused by trespassers as a reason to deny the reopening and even to tear out the stairs, at a cost to the taxpayers estimated at several million dollars.

This is the worst possible logic. The reason that about 100 people a week are traipsing through nearby neighborhoods at 4 a.m., taking up street parking and waking the working folks, is to avoid security guards the city pays $70,000 a year to enforce the no-climbing ban during daylight hours. This is not to excuse the trespassers; they shouldn't break the law. But it's a simple fact that they would not be prowling residential streets in the middle of the night if the stairs were open to the public in the daytime, and the parking area was unlocked, as it was in the old days.

A City Council ad-hoc committee is now exploring the feasibility of reopening the stairs, and it will be a long slog. Several state and city departments and at least one private landowner control points along the trail itself or the best parking and access points, which are away from residential neighborhoods. Those bureaucratic challenges are not insurmountable, though. Another positive: The Koolau Foundation, a nonprofit dedicated to preserving Haiku Valley, has emerged as a strong partner with Friends of Haiku Stairs as advocates for public use. Rather than the costly liability that critics claim, this site, if well managed, could become a source of revenue from reasonable user fees.

We're a long way from that, obviously, but what's crystal clear now is that the adverse effects caused by outlawing climbing at this popular spot should not be considered a legitimate rationale to justify the original wrong-headed decision.

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Don't remove Haiku Stairs

POSTED: 01:30 a.m. HST, Feb 23, 2015
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DAVID CHATSUTHIPHAN / SPECIAL TO THE STAR-ADVERTISER

Hikers get a spectacular view of Kaneohe as they descend Haiku Stairs. "Haiku Stairs is closed. We encourage people and visitors to stay away," said Ernest Lau, Board of Water Supply manager.

An ecological treasure and engineering feat may soon be lost to history, and that would be a real shame.

The Board of Water Supply should not move ahead with a plan that could result in dismantling the Haiku Stairs. Instead, the agency should allow more time for the success of an ongoing effort to transfer control of the hiking attraction to an entity willing and able to manage it.

Latest News/Updates

The time alloted to achieve that aim should not be unlimited, of course, especially with the site, popularly known as the "Stairway to Heaven," officially closed but continuing to attract hardy adventurers to its sweeping views of the Koolau mountain range, who access the trail in darkness and from sometimes risky vantage points to elude security guards.

Such misguided excursions are to be strongly discouraged. Besides violating the law, risking their own safety and burdening taxpayers with occasional (and costly) rescues, the trespassers only intensify calls in some quarters for authorities to swiftly rip out the 3,992 stairsteps, which stretch about two miles and climb some 2,200 feet.

During the last seven months of 2014, police cited more than 135 people for trespassing, arrested six and warned 100. These offenders, nature enthusiasts though they may be, are not helping the cause. The fact that Haiku Stairs is closed for now should be respected, with all energy directed toward supporting efforts to find a government agency, or even a viable nonprofit partner, able to manage the overall site, and provide a parking area and an access point that prevents visitors from disrupting the surrounding residential neighborhood.

Achieving this goal should be feasible — it was the clear intent of Haiku Stairs renewal efforts in the early 2000s and the recommendation of an advisory panel last October. Reopening the repaired stairs under the right circumstances would enhance the recreational opportunities on Oahu, where residents and visitors are hungry to explore new terrain. The site could even end up making money, if a reasonable entry or parking fee were charged, as at Hanauma Bay. If financial considerations are a barrier to the city finding a reliable partner, such entry or parking fees should be considered.

The Haiku Stairs were built in the 1940s to reach a Navy tower. The original wooden stairs were replaced with galvanized metal ones in the 1950s. Over the years, ownership changed and the site fell into disrepair; broad access was halted in 1987.

The city paid nearly $900,000 to repair the stairs in the early 2000s, with the intent of reopening the site. But jurisdictional issues bogged down the effort. Honolulu City Councilman Ikaika Anderson has been leading the recent effort to reopen the site and restore broad access, but he rightly warns that time is running out.

The Board of Water Supply, the current overseer, proposes allotting $500,000 of its annual budget, which begins in July, on an environmental assessment that would study the cost of removal as well as other issues. The agency also is open, however, to transferring control of the site to a government agency willing to manage it as an attraction.

"We're certainly reaching the end of the road. We don't have years to get this done. We've got months at best," Anderson said last week.

Even if the Board of Water Supply proceeds as scheduled with the proposed environmental assessment, the actual removal of the stairs is at least a few years away. But Anderson has said he will cease his revival efforts if the BWS spends money toward an opposite outcome.

Dismantling the stairs would be a very costly project. The recent task force that recommended the site be reopened estimated it would cost $4 million to $5 million to remove the stairs. Even if the BWS study comes in with a much lower estimate, the cost is likely to pose an undue burden, far above the annual cost of hiring guards to enforce the no-trespassing ban.

This price tag might buy proponents of opening the trail more time, but only if the errant hikers pitch in, too.

Oahu residents and visitors, stop trespassing on Haiku Stairs. Your incursions may only hasten the demise of a site you profess to cherish.

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Haiku view would be seen again

Cooperation should allow public to climb scenic Haiku Stairs

City looks for plan for Haiku Stairs

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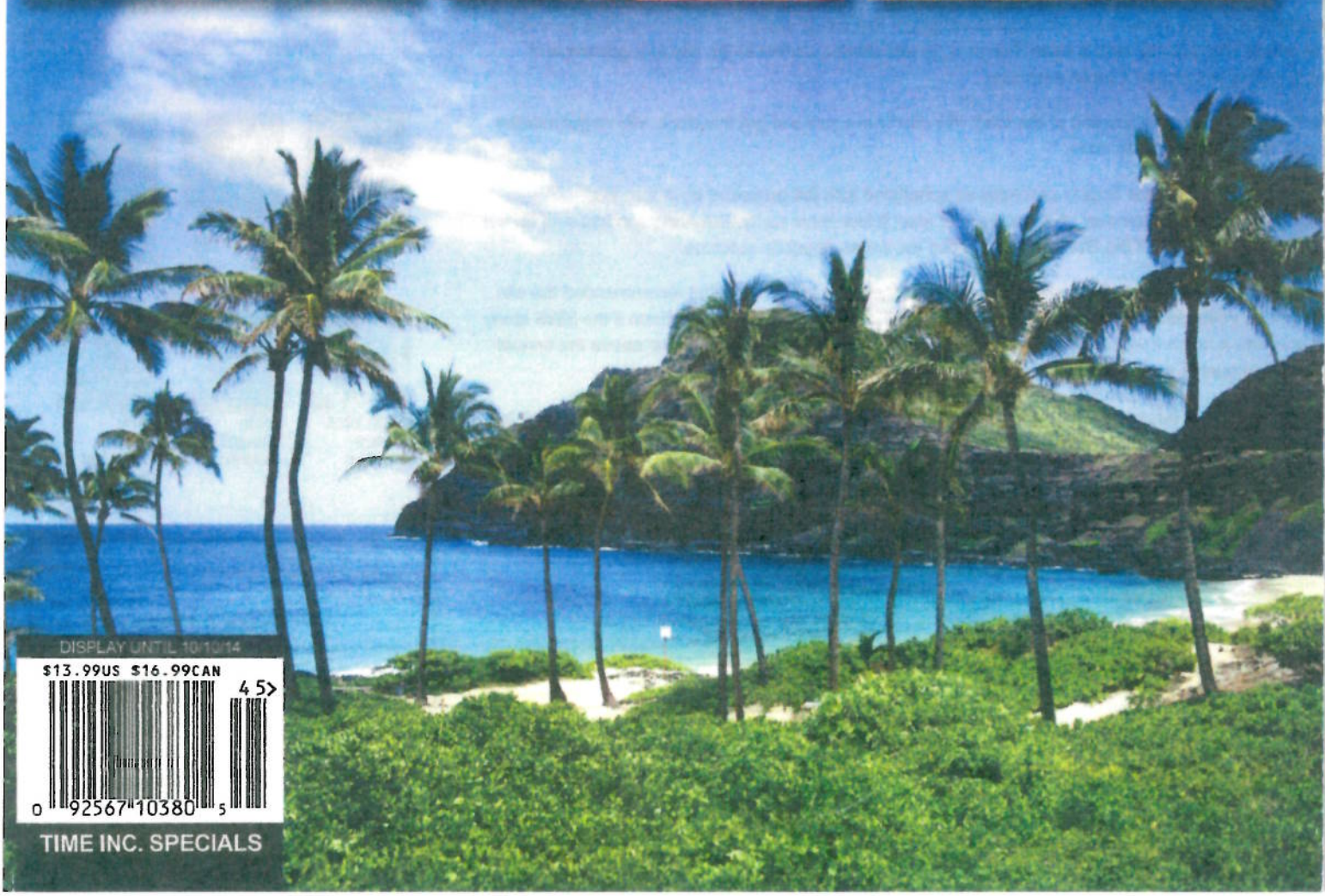

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TIME INC. SPECIALS

private partnerships working to improve health outcomes statewide, including unusually accessible state legislators and a state medical school whose graduates tend to remain in Hawaii—which means it can and does respond effectively to changing workforce needs. "The extent of collaboration that we have here is probably unique to Hawaii," says Pressler, citing the relatively small size of the health-care community and the islands' isolation as factors in its collaborative success.

A Culture of Aloha and *Ohana*

"AlohhhHA." Visitors hear it when they land at Honolulu International Airport, but the concept of aloha is more than just a Hawaiian greeting. It's the bedrock of Native Hawaiian culture, a philosophy for living on a series of small islands that together make up one of the most geographically isolated land masses on the planet. Hawaii state law defines the "Aloha Spirit," in part, as an attitude "in which each person is important to every other person for collective existence."

That's profound, but the aloha spirit is also practical, and it has implications for emotional and physical health. Chicago-born, Honolulu-based entrepreneur Peter Kay likes to point out that Honolulu's isolation on an island in the Pacific gives this midsize city a distinctly small-town feel. "There's a reason why you don't honk your horn in traffic," says Kay, referring to Honolulu drivers' almost preternatural patience. "There's a darn good chance that that person's related to you. Or you're separated by maybe one or two degrees. You don't dare honk!"

But it's another Hawaiian value widespread in Honolulu's population that has the most direct influence on the health of the city's residents: *ohana*. The concept of *ohana*, loosely translating to "family" but connoting an extended, reciprocally interdependent network of blood relatives and friends, resonates with Native Hawaiian and traditional Asian values and extends throughout the population through friendship and Hawaii's high rate of racial intermarriage. Embedded in Honolulu society is a pattern of multiple generations depending on

LOCAL HIGHLIGHT

Hiking Honolulu

In a city that's pressed between mountains and sea, you're never very far from a great hiking trail

Nestled against the Koolau Mountains, urban Honolulu abuts a network of hiking trails that range from epically challenging—like the beautiful Stairway to Heaven, which, unfortunately, crosses some private lands—to no-sweat. The trails listed below are pocket-size, easy-access hikes you can fit in before work, if you get your boots on when the sun comes up.

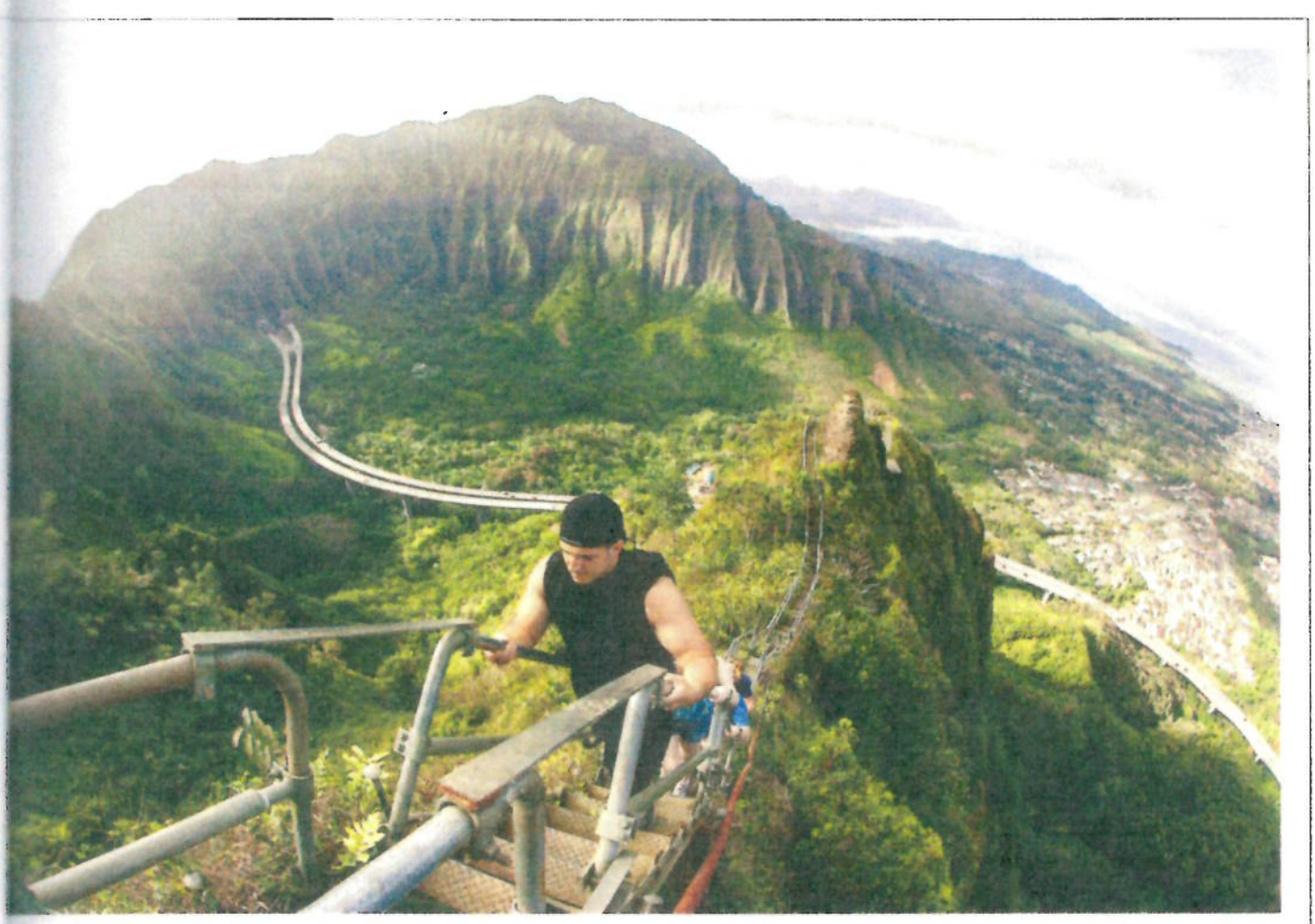
Diamond Head State Monument: This 1.6-mile round-trip trail, blazed in 1908 as part of a coastal defense system, provides an insider's look at Diamond Head Crater, whose iconic silhouette has graced Hawaii's postcards for generations. The 475-acre crater is the vestige of a volcanic explosion that struck 300,000 years ago. Hikers zigzag up the steep interior wall and climb a series of staircases and tunnels that pass through the old bunker defense system. The reward at the top: a bird's-eye view of Honolulu.

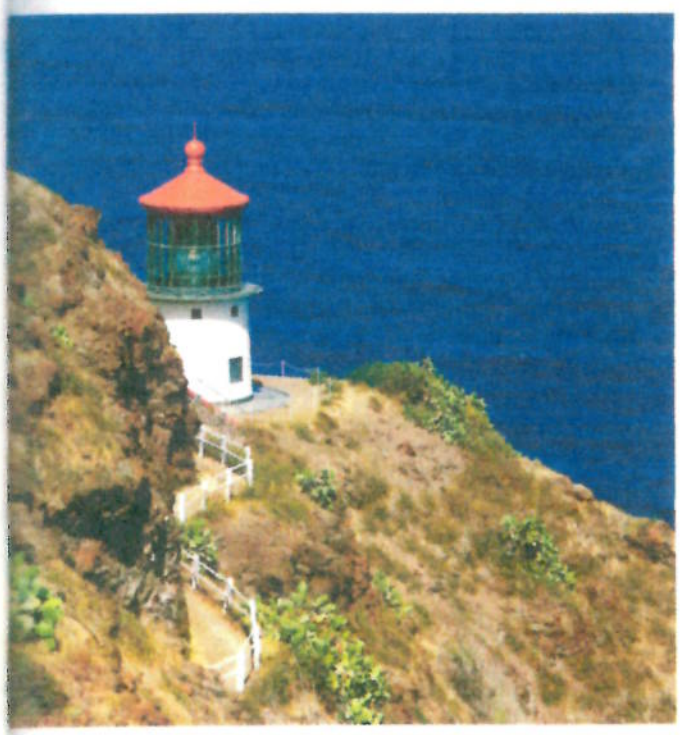
Manoa Falls: Tucked into the back of a picturesque valley suburb, this well-maintained mountain trail showcases the beauty of Hawaii's jungle interior in 1.6 miles round-trip. For most of its length, the path hugs Manoa Stream, gently rising through groves of eucalyptus, bamboo, white ginger and colorful heliconia flowers before the final payoff: a 150-foot waterfall that tumbles into a clear tropical pool. If you want it to yourself, go early; the hike's beauty, excellent facilities and city proximity make it very popular.

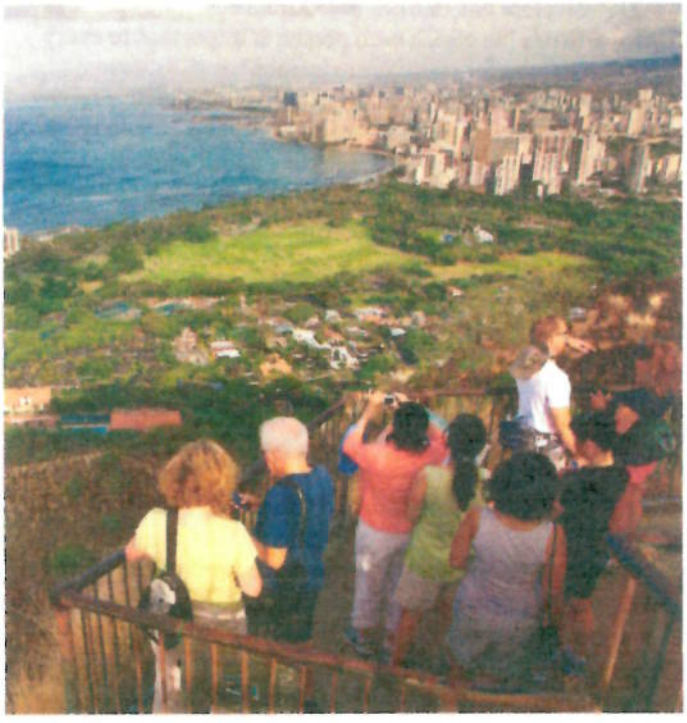
Makapuu Lighthouse: This paved two-mile round-trip hike slings itself around Oahu's scenic southeastern tip, where native seabirds ride the swirling air currents and the Pacific Ocean glitters below. Near the top, it passes Makapuu Lighthouse before ending at a lookout point with sweeping views of the island's rural north side. A bonus: during humpback-whale season (usually December through April), this is one of Oahu's best places to catch the gentle giants at play.

Koko Head Crater Trail: During World War II, a tram zoomed straight up the side of Koko Crater, on Honolulu's east side, taking personnel and equipment to the Air Force station at the top. The tram and station are long gone, but the track is used more than ever. Hikers, who jokingly refer to it as "nature's StairMaster," climb more than 1,000 railroad ties on their way to the rim, where they can enjoy island panoramas and peer into the botanical garden on the crater's floor while catching their breath.

HOOFING IT *Clockwise from top: the dizzying Stairway to Heaven trail; the view from the summit of Diamond Head crater; the lighthouse at Makapuu Point*







Petitioning The Honolulu Board of Water Supply

Save the unique and historic Ha'ikū Stairs (Stairway to Heaven) from destruction.

Friends of Ha'ikū Stairs

The Ha'ikū Stairs were part of a pioneering communications network built during the Second World War. They were repaired in 2002 at a cost to the city of $950,000 but have remained closed ever since. Despite this, the stairs remain legendary to hikers and climbing enthusiasts from all over the world, offering panoramic views of Oahu and a valuable opportunity to study Hawaiian history, culture, as well as native plant and animal life. The Honolulu Board of Water Supply (BWS) owns the land under the stairs and is about to initiate steps to remove this eligible historic structure protected by law. Please sign this petition (using your signature and physical address for maximum impact) to show you support saving the Ha'ikū Stairs. Together, let's urge the Board of Water supply to work with stakeholders for a managed access plan that would mitigate any further costs to the city, solve illegal hiking problems, and save this world famous and unique piece of history for future generations.

As of 11am, Aug 24th, 2015, this petition had garnered **5,397 supporters**, 3,235 of whom were based in Hawai'i. A total of 3,101 supporters opted to share their email addresses with the Friends of Ha□ikū Stairs. 1,728 supporters took the time to offer comments as to why the Ha□ikū Stairs should be saved. A sample of comments is on the following page.

TOP COMMENTS:

"The Haiku Stairs are beautiful and are a piece of history. It would be such a shame to not work together and save the stairs from destruction. I think they are one of the most interesting and breathtaking sights on Oahu." Lila Dykstra, Honolulu, HI.

"My father was one of builders of this historic structure. He risked his life to build the antenna (fell and broke his legs during construction). The Haiku stairs antenna was a significant factor in our Country's World War II efforts. Please save the stairs as a monument to the men and women who served our nation during the war. Thank you." Stuart Simmons, Kailua, HI.

"Stairway to Heaven is one of the most unique and beautiful things on earth and it would be unforgivable for it to be destroyed." Eric Barshinger, Honolulu, HI

"I worked at the Omega station and the Haiku stairs are a great hike; not dangerous and should be open to the public. Perhaps visiting tourists could be charged a fee?" Earl Handy, Kāne'ohe, HI.

"These stairs not only have historical importance, they have been consistently ranked one of the best hikes in the world. Don't use public funds to destroy what you used public funds to create. Do the right thing and open the stairs to the public. Operate it like Diamond Head and have an entry fee and waiver. Let's do something right for a change!" Travis Counsell, Kailua, HI.

"This is a precious resource! Please do not ignore the options for managing the stairs and strong community support for preserving the stairs." Sharon Keith, Honolulu, HI.

"A world wonder such as this should never been destroyed, let it stand for generations to come and play at their own risk." Chris Carter, Honolulu, HI.

"Stairs were closed originally in a dubious nature without broad support. Despite broad support for their re-opening it has yet to happen. No one wants to see community tax dollars wasted. And so far that's what this million dollar project has been, WASTED. All because a few of the people closest to the access to the stairs want a secluded neighborhood. It should be reopened and operated and maintained as a county hiking trail as originally intended!!!" Michael Biechler, Waialua, HI.

"This is on my bucket list. I've even had friends who flew to Hawai'i just for this hike." Carolina De Medeiros, Haleiwa, HI.

"Would like to see an agreement to preserve this historic sight and provide legal and respectful access to enjoy this Oahu treasure!" Catherine Balinbin, Eva Beach, HI.

"If Zion can have Angel's Landing, and Yosemite can have Half Dome, Hawaii should have Haiku Stairs!!!!!" Greg Parsons, Danvers, MA.

"I've hiked it back when it was legal. and it is such A SAFE way to be on a vertical pali. the native plants are protected by the structure of the stairs. The access needs to be worked out, but we should not trash, this engineering marvel. We as tax payers own it. lets use it wisely, like maybe permit only to responsible groups. we did it with Sierra hiking in high schools clubs. safe for keiki and adults, MAHALO!." Heidi Bornhorst, Palolo, HI.

PUBLIC TESTIMONIES

John Hall:

Mr. Hall testified in opposition of the removal of the Stairs because re-opening them would be an asset to botanists, as it would enable them to monitor the native plants that are in critical condition at the summit of the Koolaus. The Stairs also provide exercise and spectacular views for hikers.

Mahealani Cypher:

Ms. Cypher testified on behalf of Aaron Mahi who is in opposition of the removal of the Stairs for the reasons set forth in his written submission.

Jay Silberman:

Mr. Silberman testified in opposition of the removal of the Stairs for the reasons set forth in his written submission.

Ms. Sproat asked Mr. Silberman if filing a petition to have five buildings listed on the National Register was something that he did while working at the Coast Guard. Mr. Silberman replied that he submitted them to the State Historic Preservation Officer and the Coast Guard prepared an eligibility determination and the State Historic Preservation Office concurred with that determination. Ms. Sproat asked if it was for both the buildings and the district in general. Mr. Silberman responded yes, however no one ever nominated them to the National Register. The Coast Guard was leaving the Omega Station so had no incentive to nominate it. Ms. Sproat inquired if a decision at the State level has been made, and Mr. Silberman replied not that he is aware of.

Ken Rose:

Mr. Rose testified in support of the removal of the Stairs for the reasons set forth in his written submission.

Mr. Miyashiro asked Mr. Rose if the 6 to 12 months' time frame to assess if another agency would take over the Stairs under a managed access is acceptable to him and the other residents. Mr. Rose responded that he didn't think so because they have gone through this process in the working group. Mr. Rose stated that the only way it would be acceptable is if there was a written document stating the time frame and noting that if no transfer was agreed upon at the end of that time frame, then decisions would be made. Mr. Rose asked what the residents should do in the meantime with regard to the continued trespassing problems.

Ms. Sproat stated that she understands the significant trespassing issue that their community is dealing with and asked Mr. Rose if he could think of any other effective measures BWS could take. Mr. Rose replied that in their residents' meeting, they discussed the possibility of having off-duty police officers work with the guards (or even replace the guards) during the high volume times to cite people. Mr. Rose stated his concern that the guards are not able to protect themselves because he has seen hikers carrying weapons. Mr. Rose suggested hiring additional police officers and securing the different access points.

William Ridgway:

Mr. Ridgway testified in opposition of the removal of the Stairs for the reasons set forth in his written submission. Mr. Ridgway made reference to Board Member Wong's inquiry to Mr. Goody asking if the Friends of Haiku Stairs would support the removal of Haiku Stairs if in six months no agency steps forward and no agreement is in place for a transfer. Mr. Ridgway answered Mr. Wong's question saying that the Friends of Haiku Stairs would absolutely not support the removal of the Stairs because he is firmly convinced that the Haiku Stairs need to remain there and we need to do whatever we can to have that taken care of.

Thea Forentinos:

Ms. Forentinos testified on behalf of the Hawaiian Trail and Mountain Club in opposition of the removal of the Stairs for the reasons set forth in Barbara Bruno's submission.

Rae Leong:

Ms. Leong testified in support of the removal of the Stairs for the reasons set forth in her written submission.

Tom Masterson

Mr. Masterson testified in opposition of the removal of the Stairs because of the cultural and aina value of the Stairs. He discussed the possibility of a public-private non-profit partnership and seeking organizations that provide fiscal sponsorship.

Matthew Kievlan:

Mr. Kievlan testified in opposition of the removal of the Stairs because they are a health benefit to the community.

Mr. Miyashiro asked if there was anyone else from the public who wished to testify. Hearing none, the Board recessed at 3:50 p.m. The Board reconvened at 3:57 p.m.

TESTIMONY OF THE KO`OLAU FOUNDATION
August 24, 2015

Aaron Mahi, President

To the members and staff of the Honolulu Board of Water Supply, and to members of the public, aloha mai kakou!

The Ko`olau Foundation is here to testify in support of keeping the Ha`iku Stairs open, and we urge the Board and the department to defer any further action until a reasonable plan can be developed to ensure preservation of this historic facility also known as the "Stairway to Heaven".

Our organization is a non-profit community organization whose mission is primarily to preserve historic sites and cultural properties and to perpetuate the Hawaiian culture.

Since the mid-1990s, the Ko`olau Foundation has worked to establish a cultural preserve in Ha`iku Valley. In fact, we held several community meetings in the late 1990s to invite comment from the public as to what they would like to see in the valley. Overwhelming response was to support a cultural preserve park in Ha`iku valley once the Coast Guard closed down the OMEGA station.

The State Legislature, in 2008, passed a bill to establish the cultural preserve, but it was vetoed by former Governor Linda Lingle. Since then, a second bill was introduced in the Legislature a few years ago, but it failed for lack of funding – this was during the time when state funds were in a critical state and public employees were being furloughed and suffered pay reductions, so it was understandable.

More recently, our foundation presented our conceptual plan for the cultural preserve to the Office of Hawaiian Affairs, which has been very supportive of the plan and has asked the Department of Hawaiian Home Lands for a longterm license to allow the valley to come under OHA so that we might establish the Preserve.

The reason we are here today is because we feel that the Ha`iku Stairs offers an opportunity for us to secure funding that would support development of the cultural preserve as well as an excellent way to teach about Hawaiian history, culture, natural resources, endangered species, and many other things.

Our kupuna in ancient times traveled the mountains quite frequently. At times, the ali`i for Halawa Valley might also be the ali`i for He`eia ahupua`a. So his people would travel back and forth between the two areas.

Some of our members have climbed the Ha`iku Stairs, and they speak of the remarkable view that is found at the top of the pali Ko`olau, where you can see the entire island, all of its moku – districts – and dozens of ahupua`a from Ka`ala in the west to Kohelepelepe in the east.

You can see all of the watersheds, and the way these island mountains intercept the cloud-filled tradewinds that approach our moku from the western Pacific.

We understand that your department has held discussions with another agency to explore the possibility of transferring the Ha`iku Stairs instead of tearing them down; we urge you to continue those discussions in the hope that this matter can be resolved expeditiously.

While we understand the Board of Water Supply's concern about continued liability risks as you retain management of the facility, we believe the historic importance of this structure – built for the defense of our island over 70 years ago – deserves equal consideration along with the benefit to our community of a managed access program for the reopening of the Ha`iku Stairs.

We recommend that you defer action on your earlier decision to remove the Stairs for at least 6 to 12 months.

Mahalo for this opportunity to share our mana`o.

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A Brief History on the Ko`olau Foundation's Efforts to Establish a Cultural Preserve in Ha`iku Valley

Establishment of the Ko`olau Foundation

The organization was established in the 1990's after the Stop H-3 Association board agreed to change the mission and name of that group and support the preservation of historic sites and cultural areas and to serve as a Hawaiian land trust for entities wishing to turn their property over to the Foundation to be held in trust and preserve historic sites. Ko`olau Foundation registered its name with the State of Hawai`i in 2005 and is in the process of applying for 501(c)3 IRS status.

Community Outreach Regarding the Future of Ha`iku Valley

During the mid- to late-1990s, after the U.S. Coast Guard announced their plans to decommission the OMEGA station at Ha`iku, Ko`olau Foundation held a series of community meetings to ask the public what they would like to see in the valley's future. At that time, no entity had been designated to receive the valley lands from the federal government. Several themes emerged from those meetings:

- Residents wanted to see a cultural or nature park in the valley
- Residents wanted to see historic sites preserved, including the OMEGA station itself
- Residents did not want large commercial activity in the valley, including large tour buses
- Residents wanted access to the valley for cultural and educational programs
- Residents wanted access to the valley for walking, jogging, hiking, etc.
- Residents wanted access to their family gravesites in the valley
- Residents wanted to see native plants restored and alien plants removed.

During this same time period, Ko`olau Foundation convened meetings of major stakeholders in the valley to discuss the possibility of establishing a cultural preserve and to identify needs and concerns of the landowners, neighbors, community members, police and fire entities, and other government officials. OHA staff attended some of these meetings.

The Ko`olau Foundation also made presentations before the Kahalu`u and Kane`ohe neighborhood boards, both of whom passed resolutions of support for the cultural preserve.

Members of the Ko`olau Foundation, who also belong to Hawaiian Civic Clubs, offered resolutions before the O`ahu Council and later the Association of Hawaiian Civic Clubs favoring a cultural preserve in Ha`iku Valley, and both of these organizations passed these resolutions.

Working with the Ko`olaupoko Hawaiian Civic Club and other organizations, Ko`olau Foundation continues to reach out to community volunteers to malama na wahi kapu in the valley, and has assisted the Department of Hawaiian Home Lands, on occasion, with facilitating access for various public and private entities when the main Ha`iku Road gate was locked (it is now open during week days).

A representative of the Ko`olau Foundation also was invited by City Councilman Ikaika Anderson to serve on a working group to discuss the future of the Ha`iku Stairs, and attended weekly meetings for three months to address and resolve concerns regarding reopening of the Stairs. The group's recommendation, approved by consensus, was to allow for reopening based on "managed access".

Most recently, a meeting was held of leaders or representatives of the following organizations to discuss a unified approach toward securing approvals for the cultural preserve: Ko`olau Foundation; Ko`olaupoko Hawaiian Civic Club; Friends of Ha`iku Stairs; Ke Kula of Samuel M. Kamakau charter school; and Papahana Kuaola.

Legislation

In 2008, the State Legislature passed a bill – part of the OHA legislative package - to create the Ha`iku Valley Cultural Preserve Commission and to facilitate establishment of the preserve. The bill was vetoed by then-governor Linda Lingle. In 2011, legislation was again introduced by Rep. Ken Ito to establish the preserve, but died for lack of funding (there was a fiscal crisis that year, and funding was severely restricted).

Working with DHHL and OHA

Representatives of the Ko`olau Foundation and the Ko`olaupoko Hawaiian Civic Club have met with the Department of Hawaiian Home Lands and the Office of Hawaiian Affairs for the past 10 years to seek support and approval for establishment of this cultural preserve.

DHHL directors included Kali Watson, Ray Soon, Micah Kane, Kaulana Park, Deputy Director Michelle Kauhane, and Director Jobie Masagatani. Directors Watson and Park both agreed that the cultural preserve would be an appropriate and positive use and plan for Ha`iku Valley. Watson's term ended before he could proceed forward on this plan. In the meeting between Director Kaulana Park and then OHA chair Haunani Apoliona, Park was ready to provide OHA with a longterm license for the valley, and asked that OHA send a letter to DHHL requesting the license.

OHA's CEO at the time was Clyde Namuo, who asked that the Ko`olau Foundation prepare a conceptual plan for the cultural preserve that he could present to the Board for formal approval and to enable him to proceed with the request to DHHL. Shortly before Namuo retired from OHA, funding was provided to Ko`olau Foundation (through Hawaii Maoli) to prepare the conceptual plan. Townscape Inc. was hired to develop the plan and, in the process, consultations were held with Kamehameha Schools, the Board of Water Supply, Ke Kula o Samuel Kamakau charter school, Papahana Kuaola/Hui Ku Maoli Ola, DHHL, the Ko`olaupoko Hawaiian Civic Club and others. All were invited to provide input, suggestions, or other recommendations for this plan. The Ko`olau Foundation still considers this plan a "work in progress" and intends to make additional changes to the plan; however, the overall concept remains the same.

The Ko`olau Foundation's leadership has met with OHA board chair Robert Lindsey and Land Committee Chair Hulu Lindsey; and with OHA Pouhana Kamana`o Crabbe. OHA trustees have previously been adamant that they would seek a longterm license agreement for the valley, instead of a land exchange with DHHL.

Board of Water Supply

As owner of the Ha`iku Stairs, BWS has been seeking another government entity to receive this property. OHA trustee Hulu Lindsey met with them several months ago to explore the possibility of OHA taking over the Stairs; however at that time, no mention was made of BWS providing funding to support transfer costs to help with reopening of the Stairs. A subsequent meeting was held between BWS chair, BWS Manager, and leaders of the Friends of Ha`iku Stairs; at that meeting, they were assured that BWS would follow up with OHA to see what could be done to facilitate the transfer. Any approval of the transfer must also go before City Council.

KO OLAU FOUNDATION

PROPOSAL FOR THE HA`IKU VALLEY CULTURAL PRESERVE

PRESERVING THE HERITAGE
OF NATIVE HAWAIIANS BY UTILIZING THE AHUPUA`A
AS A LIVING, LEARNING ENVIRONMENT

PROPOSAL OVERVIEW

PRESERVING THE HERITAGE OF NATIVE HAWAIIANS BY UTILIZING THE AHUPUA`A AS A LIVING, LEARNING ENVIRONMENT

The overall vision for Ha`iku Valley and Ko`olaupoko was initially to develop partnerships and acquire land designations to establish a new cultural preserve, encompassing all of the lands under and immediately abutting the H-3 freeway between Ha`iku and Mokapu. These would be lands currently owned or controlled by the State of Hawai`i, the City & County of Honolulu, or private landowners.

A broad partnership between the landowners in Ha`iku Valley and other community and government entities is the optimal solution to the question of the future of this valuable resource.

Although the City & County of Honolulu has other uses for its portions of the valley (water resources), ideally, overall management of the valley and its buildings should be handled by the Cultural Preserve entity. It is important that any plan to develop a cultural preserve ensure that total management of the valley rest with the Cultural Preserve entity. Access for use by the City for water resources would be part of a partnership with the City & County, but all lands and buildings would probably best be managed by the Preserve (with the exception of the Kamakau parcel).

The goals of this project are three-fold:

1. Establishment of a cultural preserve in Ha`iku Valley.

2. Conversion of the OMEGA Station into the Ko`olau Museum and Hawaiian Cultural Center.

3. Development of a Cultural and Environmental Education Program with the Ahupua`a as a Living, Learning Environment

Background

The lands of Ha`iku Valley, in the uplands of the ahupua`a of He`eia, were once home to native Hawaiian healers – the area was once looked upon as the "hospital" for people of the Kane`ohe bay region. Kahuna la`au lapa`au lived there and grew their medicinal plants; those in need of their care came from miles around to receive medicines and treatment for various ailments. Some of our kupuna today, living descendants of native Hawaiian healers from Ha`iku, recall

going to the valley in their youth to collect herbs and plants for use by their elders, who were skilled in la`au lapa`au.

The upper area of the valley was not generally occupied by commoners, but were the residences of the chiefs and priests, their families and support staff, particularly during the time of Mailekukahi (15^{th}-16^{th} century era). Kalo was grown on the lower sections of the valley.

There are several significant cultural resources in the valley, including two major heiau – Kanehekili Heiau (up mauka, just outside the H-3 tunnel), and Kane a me Kanaloa Heiau (on the south side of the valley, abutting the H-3 access road). It is said that there were many burials throughout the valley, some of them uncovered during construction of the OMEGA station road and its network of copper lines which now lay underground throughout the area.

Other significant cultural resources include Kaualehu burial cave, which once held iwi kupuna, canoes, kahili, and other artifacts; Keahiakahoe, the legendary high point in the pali above He`eia; and other heiau, springs and historic sites throughout the valley.

The OMEGA Station itself is significant, historically, having been built in the 1940s and now eligible for placement on the National Register of Historic Places.

Master Plan

Once the cultural preserve is established, the following activities can make this endeavor a self-sustaining perpetual land trust to protect cultural resources and burials in the valley as well as to preserve the heritage of native Hawaiians while educating all – Hawaiian and non-Hawaiian alike – on the history and culture of the Hawaiian people. Among the components of the preserve would be the following:

- Ko`olau Museum – Renovation of the OMEGA Station and development of a new museum and cultural center that features both native Hawaiian heritage as well as celebrates the history of the OMEGA navigational station that once functioned at the site. This facility could also serve as a repository for artifacts taken from the H-3 freeway and other sites excavated in the Ko`olaupoko area.

- Cultural and environmental education programs – Establish collaborations with public and private entities for cultural and environmental education, in partnership with the University of Hawai`i (Windward Community College), the Department of Education, Kamehameha Schools, other private and public schools and the general community. Construct outdoor halau for cultural and environmental classes and training, workshops and demonstrations, to be located throughout the property.

- Facility Utilization – Restore utility infrastructure (sewage, electricity, water) servicing all buildings on the property and convert quarantine station buildings for various uses (this has since been decided by the lease to Kamakau school).

- Kahuna La`au Lapa`au – Renovation of the mauka maintenance building to house a healing center, enabling kahuna la`au lapa`au to reside there and grow their medicinal plants in the area. A program could be developed in partnership with Papa Ola Lokahi and/or Ke Ola Mamo to provide alternative medical services at this location. The building can also be used for workshops, preparation of kapa, etc.

- Hula Halau Planting Areas – Hula halau from Ko`olaupoko would be offered areas where they can plant the greenery needed for their performances, in an effort to eliminate the necessity for them to gather in the forest.

- Charter School and Cultural Learning Centers – Renovate and provide space in buildings at the Quarantine Station for a native Hawaiian charter school, in combination with Hawaiian language and hula classes. (Most already established)

- Cultural events – Construct a hula mound on the makai side of the OMEGA station and clear vegetation/install landscaping to allow for viewing hula presentations and other Hawaiian cultural events, such as chanting competitions or slack-key Hawaiian music festivals. Organize areas where traditional Hawaiian games and sports can be played, both for learning or in competitions.

- Establishment of native plant habitat and tropical gardens – clear invasive alien species and replace them with species native or indigenous to the Hawaiian islands.

- Burial ground for Iwi Kupuna: Identify a suitable location for the burial of iwi kupuna inadvertently discovered during construction or other activities in the Ko`olaupoko area; or to allow `iwi of modern-day kupuna for Hawaiian-style burials.

- Additional archaeological studies, if possible, to develop a comprehensive understanding of pre-contact use of the area

Strategic Plan

Development of a strategic plan would be among the first initiatives following a decision on the longterm use of the valley property. Such a plan could achieve the following objectives:

1. Identify all stakeholders, their interests and concerns

2. Identify all resources on the property and, if possible, assessed value of each resource

3. Identify all liabilities, constraints, or other restrictions on the property; who is responsible for correcting or addressing these issues; and what funding, if any, would be necessary to satisfy or mitigate these concerns

4. Assess the cost of cleaning and removing hazardous conditions – and securing – all buildings (other than those already leased to Kamakau school or others)

5. Assess the cost of clearing invasive vegetation

6. Assess the condition of roads and paved areas, and the cost of repairs or restoration

7. Assess the cost of restoring basic infrastructure and/or utilities to the two main buildings (OMEGA and Maintenance)

8. Assess the cost of renovating the OMEGA Station and the mauka Maintenance Building for conversion into a museum facility

9. Assess the cost of constructing a hula mound on the property makai of the OMEGA station

10. Assess the cost of constructing several outdoor halau – learning places – for cultural and environmental educational programs and presentations

11. Assess the cost of installing electronic gates and a security system on the property

Prospective Collaborative Partners

- **Ko`olau Foundation**
- **Ko`olaupoko Hawaiian Civic Club**
- **Komomua `Ohana**
- **Department of Hawaiian Home Lands**
- **Kane`ohe Neighborhood Board**
- **Ha`iku Village Community Association**
- **Office of Hawaiian Affairs**
- **Board of Water Supply**
- **Kamehameha Schools**
- **Department of Education**
- **Windward Community College**
- **Kane`ohe Business Group**
- **Hawai`i Institute of Marine Biology**
- **Hui Ku Maoli Ola / Papahana Kuaola**
- **Samuel Kamakau Charter School**
- **Hakipu`u Charter School**
- **Others**

Brief History of the Valley

- 18th century – Komomua awarded lands in He`eia ahupua`a, including property in Ha`iku Valley
- 1940s – Kupa`aina families of Ha`iku Valley relocated to makai lands
- 1940s - OMEGA Station facility constructed by Navy
- 1970s-80s – Studies and work begin on Interstate H-3; preliminary work in Ha`iku
- 1995 – U.S. Coast Guard announces its plan to close down its OMEGA Station operations
- 1995 – Ko`olau Foundation holds community meetings to discuss future hopes for valley

- 1996-2000 – OMEGA station facility cleared, lands transferred to DHHL

A Community's Vision for Ha`iku

In the mid-1990s, the Ko`olau Foundation held community meetings to identify what the people of Kane`ohe would like to see when the Coast Guard vacated the property. Their mana`o has been incorporated into this vision for the valley.

Primary Uses & Functions

- ✓ Cultural Preserve to protect burials, heiau and other cultural areas in the valley
- ✓ Provide for cultural and environmental education programs
- ✓ Provide for passive recreation activities
- ✓ Reconnect the community with the `aina of Ha`iku
- ✓ Renovate the OMEGA Station and establish a Ko`olau Museum to honor the history and heritage of Ko`olaupoko and the OMEGA station, and display artifacts from H-3

Land Use Planning Framework

Recommendation: lands in Ha`iku Valley be acquired from various landowners – by license or in fee – as part of a new Ha`iku Valley Cultural Preserve.

Major landowners include:

- **Dept. of Hawaiian Home Lands**
- **Board of Water Supply / C&C of Honolulu**
- **Kamehameha Schools**
- **State of Hawai`i**

Estimated Start-up Costs

Land Acquisition	Unknown
Interim Security Program	$100,000 (fencing, new gates, securing 2 buildings, security surveillance service, security guards) – 1 year
Strategic Plan	$50,000 (estimated)
Master Plan	$300,000 (estimated)
Implementation	tbd (based on strategic & master plans)
5-year Demonstration Start-up costs	tbd

"To malama na wahi pana…is restorative to our mana, to our physical and spiritual health…"

Ko`olau Foundation
P. O. Box 4749
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KEY COMMUNITY PARTNERS:

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Ph. (808) 235-8111
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REPORT TO THE TWENTY-FOURTH LEGISLATURE
STATE OF HAWAII
REGULAR SESSION OF 2007

HOUSE CONCURRENT RESOLUTION 278, HD 1

REQUESTING THE OFFICE OF HAWAIIAN AFFAIRS, DEPARTMENT OF TRANSPORTATION, DEPARTMENT OF HAWAIIAN HOME LANDS, DEPARTMENT OF LAND AND NATURAL RESOURCES, CITY AND COUNTY OF HONOLULU, HONOLULU BOARD OF WATER SUPPLY, QUEEN EMMA FOUNDATION, AND KAMEHAMEHA SCHOOLS TO SUPPORT THE ESTABLISHMENT OF A CULTURAL PRESERVE IN HA`IKU VALLEY AND NORTH HALAWA VALLEY

PREPARED BY:
THE OFFICE OF HAWAIIAN AFFAIRS
DECEMBER 2006

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EXECUTIVE SUMMARY

This report documents the work done by the Office of Hawaiian Affairs (OHA) in response to HCR 278 HD1 [hereinafter called HCR 278], and makes recommendations to the Legislature based on meetings with the departments named in the concurrent resolution, comments by the community from public meetings, and those who contacted the Halawa-Luluku Interpretive Development office.

Pursuant to House Concurrent Resolution 278 HD1, it is the intent of the Legislature that cultural preserves be established in the Ha`iku and North Halawa Valleys as the end result of the Halawa-Luluku Interpretive Development Plan, and to that end, OHA, the Departments of Transportation, Hawaiian Home Lands, Land and Natural Resources, the City and County of Honolulu, and the Honolulu Board of Water Supply are requested to work with the Queen Emma Foundation, Kamehameha Schools, and Hawaiian community representatives, including kupuna, kupa`aina, and cultural experts of the affected areas to achieve these objectives. HCR 278 establishes the State House of Representatives' intent, with Senate concurring, that cultural preserves be established in the Ha`iku and North Halawa Valleys as the result of the Halawa-Luluku Interpretive Development Plan (IDP). The concurrent resolution requests named state agencies to work with the Queen Emma Foundation, Kamehameha Schools, and Hawaiian community representatives to achieve these objectives.

OHA was requested to be the lead agency.

The IDP mentioned in HCR 278 is part of the Halawa-Luluku Interpretive Development project, which seeks to mitigate the adverse impacts resulting from construction of the Interstate Route H-3. Under the National Historic Preservation Act, Section 106, the federal government is responsible for avoiding, minimizing, or mitigating any adverse impacts created by any federal undertaking. The Federal Highway Administration (FHWA) is the federal agency required by Section 106 to mitigate adverse impacts from the H-3 freeway. In 1987, it signed an H-3 Memorandum of Agreement (MOA) with the Advisory Council of Historic Preservation (ACHP), and State Historic Preservation Officer (SHPO) which established the mitigating actions required as a result of H-3 construction. OHA and the state Department of Transportation (HDOT) were concurring agencies in the MOA. Stipulation B in the MOA requires development of the IDP. OHA and HDOT recognized that the archaeological and cultural resources along the freeway corridor required preservation and interpretation, and they joined in signing a cooperative agreement to proceed with the IDP. OHA agreed to complete the IDP if HDOT provided funding. This effort is known as the Halawa Luluku Interpretive Development (HLID) project.

HLID began in April 2000 and is being accomplished in three phases. Phase One (Plan to Plan), and Phase Two (Strategic Plan) are completed, and the Strategic Plan establishes a cultural preservation theme in both North Halawa Valley and Ha`iku Valley. In June 2006, work on the IDP was started and it is to be completed by June 2007. Implementation of the IDP is projected for December 2008.

HCR 278 states the Legislature's intent that the objective for the HLID IDP in North Halawa Valley and Ha`iku Valley is a cultural preserve. It also declares that departments, agencies and the community should work together to accomplish this objective.

OHA's response to HCR 278 HD1 involved meeting with stakeholders including those departments, agencies, and community members who had an interest in Ha`iku Valley and North Halawa Valley becoming a cultural preserve. OHA met with each department/agency that was named in the resolution and conducted public meetings at Castle High School on November 14, 2006, and Moanalua High School on November 15, 2006, to gather community input. Several questions guided OHA's effort. These were:

- What is the jurisdiction and role of the departments/agencies named in the resolution, with regard to North Halawa Valley and Ha`iku Valley, and who will have jurisdiction over the cultural preserves once they are established?
- What are the obstacles/benefits of establishing cultural preserves in the two valleys?
- What is the department/agency's perspective regarding establishment of cultural preserves in these valleys?
- What is a cultural preserve and how is it defined? From where must the definition come? (EA, EIS, Preservation Plan, etc.)

The meetings with departments, agencies, and community, lead us to draw the following conclusions:

a. In reaching out to the departments, agencies and community we found that there is support for cultural preserves in North Halawa Valley and Ha`iku Valley. However, the departments and agencies viewed their role as being passive stewards.

b. In developing plans for these cultural preserves, the `ili of Luluku should be included. The `ili of Luluku is historically known for its agriculture production on terraces which descended the slopes of the Ko`olau mountains. Kalo, banana, sweet potato production was prominent in this area.

c. The State's condemnation of North Halawa Valley was filed on July 13, 1992 (Civil No. 92-2435-07), and is still unsettled. Until the State's condemnation is settled, completion of the HLID project in the valley will be not be fully utilized.

d. Several planning issues need clarity for good decisions to be made regarding these cultural preserves. Departmental jurisdiction and responsibilities, assessment of previous archaeology studies and integrity of the land, defining what is meant by "cultural preserve," and resolving access into Ha`iku Valley are some of the component issues. Clarity in these and other areas will aid the development of these cultural preserves

e. There was a community sentiment that OHA be a part of these cultural preserves, and several community members in the Ha`iku area felt OHA should be the steward in the Ha`iku Valley.

f. Funding is required to make the cultural preserves a reality. The HLID project's $11 million will address some cultural aspects within these valleys. However, the HLID purpose is more specific in nature, and does not include the entire valleys in North Halawa and Ha'iku. If the Legislature's intent is to become a reality, it requires the Legislature's funding support.

Based on the conclusions drawn from talking with the departments, agencies, and community stakeholders, the following recommendations are made:

a. Implement planning actions which encompass the complex issues involved in making North Halawa Valley and Ha'iku Valley cultural preserves, and that provide the State a plan of action for these areas becoming cultural preserves. We recommend the Legislature provide a $250,000 planning grant to address the planning issues and potential for the areas addressed in the resolution.

b. The Legislature should assess the need for funding of actions to develop these cultural preserves. The items requested in HCR 278, and other planning action could not be accomplished without sufficient funding.

c. A statement or resolution from the Legislature requesting settlement of Civil No. 92-2435-07, State of Hawaii v. Kamehameha Schools, would help complete the condemnation of North Halawa Valley and allow the HLID Interpretive Development Plan to be fully utilized.

I. INTRODUCTION

Pursuant to House Concurrent Resolution 278 H.D. 1 [hereinafter called HCR 278], it is the intent of the Legislature that cultural preserves be established in the Ha`iku and North Halawa Valleys as the end result of the Halawa-Luluku Interpretive Development Plan, and to that end, the Office of Hawaiian Affairs, Departments of Transportation, Hawaiian Home Lands, Land and Natural Resources, the City and County of Honolulu, and the Honolulu Board of Water Supply are requested to work with the Queen Emma Foundation, Kamehameha Schools, and Hawaiian community representatives, including kupuna, kupa`aina, and cultural experts of the affected areas to achieve these objectives. The Office of Hawaiian Affairs (OHA) was requested to be the lead agency.

HCR 278 establishes the State House of Representatives' intent, with Senate concurring, that cultural preserves be established in the Ha`iku and North Halawa Valleys as the result of the Halawa-Luluku Interpretive Development Plan (IDP). The concurrent resolution requests named state agencies work with the Queen Emma Foundation, Kamehameha Schools, and Hawaiian community representatives to achieve these objectives. The IDP is part of the Halawa Luluku Interpretive Development project, which seeks to mitigate the adverse impacts resulting from the construction of the Interstate Route H-3.

This report documents the work done by OHA in response to HCR 278, and makes recommendations to the Legislature based on meetings with the departments named in the concurrent resolution, comments by the community from public meetings, and those who contacted the Halawa Luluku Interpretive Development office

HISTORY OF THE RESOLUTION

House Concurrent Resolution 278, entitled: "House Concurrent Resolution Requesting the Hawaii Community Development Authority to Report on the Carrying Capacity of the Infrastructure in the Kakaako District on Oahu," was introduced in the Hawaii House of Representatives on March 15, 2006, and received a single referral to its Committee on Water, Land, & Ocean Resources (WLO). The WLO amended the resolution by deleting its substantive provisions and inserting proposed provisions that requested the Office of Hawaiian Affairs, Departments of Transportation, Hawaiian Home Lands, and Land and Natural Resources, the City and County of Honolulu, the Honolulu Board of Water Supply, Queen Emma Foundation, and Kamehameha Schools to support the establishment of a cultural preserve in Ha`iku Valley and North Halawa Valley. The title of the resolution was changed to reflect the new intent. WLO considered the concurrent resolution at its April 7, 2006 hearing. Testimony in support of the proposed amendments was received from the Office of Hawaiian Affairs, the Department of Land and Natural Resources, Honolulu Board of Water Supply, Association of Hawaiian Civic Clubs, Koolau Foundation, Koolaupoko Hawaiian Civic Club, and Na Iwi o Heeia Kea. The Department of Transportation supported the intent of the proposed amendments provided that they be allowed to maintain the H-3 Freeway.

The Committee made further amendments to the proposed concurrent resolution which can be summarized as follows:

- It noted previous work done by community groups regarding cultural preserves in Ha`iku and North Halawa Valleys that are part of the Halawa-Luluku Interpretive Development Plan (HLIDP).
- The Legislature's request for named departments and agencies to support establishment of cultural preserves was replaced by a statement which clarifies the Legislature's intent that cultural preserves be established in the two valleys, and that the identified public and private organizations work with community groups, interested individuals, and cultural experts to effectuate the objectives of the HLIDP.
- It named OHA as the lead agency in completion of the HLIDP and required a report be submitted to the Legislature at least 20 days prior to their 2007 Legislative Session on actions taken because of the resolution.
- It requested a current archeological study and inventory of each valley be included as a necessary step toward completing the HLIDP.

On April 12, 2006, the concurrent resolution was passed out of the Committee on Water, Land & Ocean Resources as HCR 278 HD1, entitled: Requesting The Office Of Hawaiian Affairs, Department Of Transportation, Department Of Hawaiian Home Lands, Department Of Land And Natural Resources, City and County Of Honolulu, Honolulu Board Of Water Supply, Queen Emma Foundation, And Kamehameha Schools To Support The Establishment Of A Cultural Preserve In Ha`iku Valley And North Halawa Valley."

HCR 278 HD1 was adopted by the House of Representatives on April 12, 2006, and by the Senate on April 26, 2006.[1]

BACKGROUND

HALAWA LULUKU INTERPRETIVE DEVELOPMENT PLAN. The Halawa Luluku Interpretive Development Plan is being developed by the Halawa Luluku Interpretive Development (HLID) project. HLID was established to fulfill responsibilities under Section 106 of the National Historic Preservation Act. It is a combined effort of the Federal Highway Administration (FHWA), the State Department of Transportation (HDOT), and the Office of Hawaiian Affairs (OHA) to mitigate adverse impacts caused by construction of Interstate Route H-3. On July 21, 1987, FHWA, State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP), with concurrence by OHA and HDOT, executed a Memorandum of Agreement (MOA) to mitigate adverse impacts resulting from the construction of Interstate H-3 Highway. Stipulation B of the MOA directs an Interpretive Development Plan be completed by the HDOT in consultation with the FHWA, SHPO and OHA.

On August 10, 1999, HDOT and OHA executed an agreement that recognized that archaeological and cultural resources along the H-3 freeway corridor required preservation and interpretation, and agreed to proceed with the Interpretive Development Plan for Halawa Valley and the Luluku Discontiguous District. The project is known as the Halawa-Luluku Interpretive

[1] House Standing Committee Report No. 1732-06.

Development project (HLID), and is funded by $11 million set aside from Federal/State (90/10 matching) highway funds.

HLID began in April 2000, and is being accomplished in three phases. Phase 1, which was completed in April 2003, was the Plan-to-Plan Phase, which set down the process to be used in developing the IDP. It included community outreach to inform the community about the project and identified stakeholders and cultural caretakers who would be important in the community consultation. A working group of community members was established and the overall process of how to develop the interpretive development plan was discussed and documented in the HLID Plan-to-Plan. Besides the Plan-to-Plan phase, two other phases are identified. These are the Strategic Plan Phase, which was completed in January 2006, and the Interpretive Development Plan Phase, which began in June 2006, and is ongoing.

The Strategic Plan was developed during the second phase. It is based on vision, mission, and goals developed by the Working Group (WG). These principles form the basis for the selection of the measures that are proposed to mitigate the adverse effects associated with the construction of the H-3 freeway. It also brings together the review of existing studies/reports on the archeology and history of the land, and the community consultation whose recommendations are a large part of the plan. [2]

A significant component in the formulation of the Strategic Plan was the participation by the community on three levels: a working group of stakeholders, the interested public, and government agencies. In this participation process, community members offered mitigation elements for consideration by the WG. The discussion further focused the WG's attention to four areas: North Halawa Valley, Ha`iku Valley, Luluku Agricultural Terraces, and Kukui o Kane Heiau. Vision, mission, and goals were developed for these areas by the WG.

The Strategic Plan describes the Development Theme for North Halawa Valley as follows: "*Healing and Learning Center. North Halawa Valley serves as a healing and learning center through the preservation of traditional cultural practices. North Halawa Valley is observed as a healing place for the mind and body, a place for learning and a place of worship. Practitioners, students and visitors are immersed into an environment that is healing itself through the efforts of volunteers working on restoring native vegetation, stabilization and restoration of cultural sites. Knowledge and education is promoted through the teaching of traditional and contemporary practices on the land.*"[3] The objectives listed in the Strategic Plan for North Halawa Valley are:

- Healing of the `Aina
- Sustainability
- Access
- Natural/Ecological Resources
- Educational Program
- Recreational Programs

[2] HLID Strategic Plan, October 3, 2005
[3] HLID Strategic Plan, Pg 21

The Strategic Plan identifies the development theme for Ha`iku Valley as follows: *"Hawaiian Cultural Preserve. Ha`iku Valley serves current and future generations by preserving the history and heritage of native Hawaiians through its collection of literature, artifacts, and cultural practices. The former OMEGA station has been transformed into a gathering place for knowledge, learning, and conservation (of artifacts, etc.); and a place where there is an opportunity [to] teach culture. Practitioners, students and visitors are immersed into an environment that has been transformed over the years into an example of an impact zone that is trying to heal itself through the efforts of volunteers working on restoration projects that will transform the ecology and preserve links to the past. Ha`iku serves as a place for renewal of the spirit and re-connection with the `aina. Conservation projects to preserve former agricultural features and places of honor and worship continue through the efforts of volunteers under the guidance of knowledgeable kupuna and professionals.* The objectives listed in the plan for Ha`iku Valley are:

- Healing of the `Aina
- Sustainability
- Access
- Natural/Ecological Resources
- Educational and Cultural Programs
- Recreational Programs
- Monitoring Program

The Interpretive Development Plan Phase began in June 2006, and is scheduled for a December 2008 completion. Community consultation continues through this phase. The projected timeline for this phase is completion and approval of the IDP by May 2007, followed by Design and implementation by December 2008.[4]

LAND OWNERSHIP. Based on 2004 information, land ownership in North Halawa Valley and Ha`iku Valley belongs to several different owners. The State of Hawaii Department of Transportation owns the entire right-of-way of the H-3 freeway. Owners of lands adjacent to the right-of-way include:

- City and County of Honolulu
- Kamehameha Schools
- Queen Emma Foundation (currently called Queen Emma Land Company)
- Hawaiian Home Lands
- United States Navy
- Board of Water Supply

In North Halawa Valley, the present landowners are Queen Emma Foundation and Kamehameha Schools. Queen Emma Foundation owns the land where the Hawaiian Cement Company quarry and plant exists, and Kamehameha Schools owns the remainder of the valley. The State of Hawaii is condemning North Halawa Valley from ridge to ridge from Kamehameha Schools under Civil No. 92-2435-07, which was filed on July 13, 1992. Progress in the HLID project or this cultural preserve depends on settlement of the condemnation.

[4] Ibid, Page 27

In Ha`iku Valley, the Department of Hawaiian Home Lands owns the bottom (flat) land of the valley and the top ridges of the Ko`olau Mountains. The slopes between the bottom land and ridges are owned by the Board of Water Supply, which has responsibility for the watershed in the valley. The United States Navy owns a small parcel adjacent to the entry gate to Ha`iku Valley. The City and County of Honolulu owns the Stairway to Heaven, although the land under it is owned by the Board of Water Supply. Outside of the valley, Kamehameha Schools owns the land north of the valley entrance and extending to the sea. Most of their land is leased to tenants.

ARCHAEOLOGY. Several archaeology studies of North Halawa Valley and Ha`iku Valley have been completed under a contract between the State Department of Transportation and the Bishop Museum. They can be summarized as follows:

- 1987, Five Upland 'Ili: Archaeological and Historical Investigations in the Kaneohe Interchange, Interstate Highway H3, Island of Oahu (Jane Allen)
- 1987, (Draft) Archaeological Inventory Survey of the United States Coast Guard Omega Transmission Station, Ha`iku Valley, He`eia Ahupua'a, Ko`olaupoko, Island of O`ahu (TMK 4-6-15), Matt McDermott, et al., November 1987, Cultural Surveys Hawaii.
- November 2002, Four sites in Upland Kane`ohe Supplemental Survey and Archaeological Monitoring For Interstate Route H-3; Jane Allen, Heidi A. Lennstrom, Barbara Dolan, Helen Higman Leidemann.
- November 2002, Mo`olelo Ha`iku Archaeological Inventory Survey, Data Recovery, and Monitoring Investigations For the Interstate Highway H-3 within Ha`iku Valley, He`eia Ahupua`a, Ko`olau Poko District, Island of O`ahu
- January 2003, Continuity and Change in Upland Kane`ohe Habitation, Data Recovery and Monitoring Investigations in Luluku, Kapalai, and Punalu`u Mauka `Ili, O`ahu, (Helen Leidemann et al)
- February, 2003, Windward Highway Archaeological Investigations, Inventory Survey, Data Recovery, and Monitoring for Interstate Route H-3 in Kane`ohe, O`ahu; John Dockall et al.
- April 2003, Imu, Adzes, and Upland Agriculture Inventory Survey Archaeology in North Halawa Valley, O`ahu, Volume 1: Overview, Recommendations, and Appendices
- April 2003, Imu, Adzes, and Upland Agriculture Inventory Survey Archaeology in North Halawa Valley, O`ahu: Site Reports , Volumes 2a thru 2d.
- April 2004, Continuity and Change in Upland Kane`ohe Agriculture, Data Recovery and Monitoring Investigations at Site 50-80-10-1887, Luluku `Ili, O`ahu; Helen Leidemann, John Dockall, Heidi A. Lennstrom, Susan A. Lebo

The State Department of Transportation and Federal Highway Administration funded these archaeological studies that were completed by Bishop Museum. There is some

disagreement in the community with the archaeological interpretation in these reports. However, the HDOT's perspective is that the cost for another archaeological study would be under another agency's jurisdiction. In 1997, another archaeological study was completed for the United States Coast Guard during the dismantling of the Omega Station in Ha'iku Valley. Because of the previous studies done in Ha'iku and North Halawa Valley, SHPD believes that an overall assessment of previously completed work needs to be completed prior to requesting a new archaeological survey be done. A significant question regarding a new archaeological inventory survey is whether the Legislature will provide funding for it?

II. APPROACH

In preparing our response to the resolution, several questions needed answering. These were:

a. What is the jurisdiction and role of the departments/agencies named in the resolution with regard to North Halawa Valley and Ha'iku Valley, and who will have jurisdiction over the cultural preserves once they are established?
b. What are the obstacles/benefits of establishing cultural preserves in the two valleys?
c. What is the department/agency's perspective regarding establishment of cultural preserves in these valleys?
d. What is a cultural preserve, and how is it defined? From where must the definition come? (EA, EIS, Preservation Plan, etc.)

OHA's response to HCR 278 HD1 involved meeting with stakeholders including those departments, agencies, and community members who had an interest in Ha'iku Valley and North Halawa Valley becoming a cultural preserve. OHA met with each department/agency that was named in the resolution and conducted public meetings at Castle High School on November 14, 2006, and Moanalua High School on November 15, 2006, to gather community input. Community meetings were advertised in the Honolulu Advertiser, Honolulu Star Bulletin, and MidWeek prior to the date of the meetings. Additionally, a notice was placed on the *hlid.org* website, and notices were mailed to over 200 individuals who had previously indicated interest as well as residents of the immediate areas.

III. FINDINGS

In OHA's meetings with the named departments, agencies, and community stakeholders there is overall support for cultural preserves in Ha'iku Valley and North Halawa Valley. However, there are important concerns and issues which need attention. Appendix D, Interagency Meeting Notes, summarizes our findings.

The Honolulu Board of Water Supply (BWS) owns the vertical cliffs of Ha'iku Valley, which is classified as Preservation/Conservations District. Their primary responsibility is to ensure management and sustainability of watershed resources, and would be a passive stakeholder when a cultural preserve is established. It plans to update its Watershed Management Plan within the next 24 months and is interested in how the water resource would be used in the cultural preserve. Important questions for them are:

- Will access be restricted or open to the public? Right now access is very restricted. Security of water resources is a concern if access is open to the public.
- What is a cultural preserve?
- Are there any known cultural sites on BWS lands and is it BWS' responsibility to preserve those sites?
- What effect will cultural projects have on the health of the watershed?

Recommendations by the BWS include: Partnering with landowners by way of a memorandum of understanding which would interpret issues in HCR 278 and define goals.

The State Historic Preservations Division (SHPD) of the Department of Land and Natural Resources strongly supports the idea of establishing cultural preserves. Although it supports HCR 278, the language in HCR 278 is badly drafted. For example, paragraphs three and four on page three of the resolution are contradictory. As far as the federal government is concerned [i.e., Federal Highway Administration (FHWA)], the archaeological studies have already been done. The Bishop Museum completed inventory survey and data recovery for these areas under contract to the State Department of Transportation. These studies were funded by FHWA (See Archaeology Section of this Report). Although the studies were done, not all the reports have been turned in yet. Important concerns for SHPD are:

- Archaeological plans have not all been reviewed. The community has concerns that interpretations are inaccurate.
- Not all the reports have been reviewed, nor have all the reports been turned in. It is difficult to develop a plan when you don't know what you're protecting.
- How will the cultural preserve be defined? There is no official definition of "cultural preserve," but a good place to start would be a cultural preservation plan. Good examples are Hokulia (Big Island) and Palauea (Maui).
- Members from the community and of the HLID working group have an archaeologist whom they want to review the Bishop Museum study reports. However, he must be paid by the State or his opinion would be considered as just another community opinion.
- Funding is needed. Cost and funding sources need to be identified. SHPD has limited resources and staffing, and is not able to support HCR 278 without funding.

Recommendations made by SHPD include: revisiting the issue of Area of Potential Effect (APE) with the Advisory Council of Historic Preservation. In Ha'iku Valley the APE is defined to be the area within the footprint of the H-3 freeway. Community stakeholders would like to see it defined more broadly to include more of the valley. Also, contact archaeologist whom the community recommended to review reports/plans when funding is obtained.

The Department of Hawaiian Home Lands owns the bottom land and the ridge land of Ha'iku Valley. It was aware of HCR 278 but did not provide any testimony to the Legislature. Its mission is to develop homesteads for Native Hawaiians, and is focused on achieving that mission. It does not have any objection to a Ha'iku cultural preserve, but would sell or exchange their land in Ha'iku Valley to focus on their mission of developing Hawaiian homesteads. In 2003, DHHL and the City and County of Honolulu entered negotiations to swap City land for a

part of Ha`iku Valley which included the Stairway to Heaven. Important comments from DHHL include:

- DHHL would consider a land exchange, with the condition that the charter school (Ke Kula o Samuel Kamakau) remains.
- Cultural preserves are not compatible with DHHL's mission but would be more compatible with Kamehameha Schools.
- An archaeology survey would have to be done prior to any building. DHHL would have archaeology surveys performed when there are plans made to develop its property.
- DHHL has not allowed anyone to use its property to access the Stairway to Heaven, which is on BWS land.
- The underground infrastructure of Ha`iku Valley is unknown. They requested blueprints from the Coast Guard, but the Coast Guard was not able to provide them to DHHL.

The City and County of Honolulu's involvement with Ha`iku Valley in the past few years has been primarily focused on the area near and including the Ha`iku Stairs (Stairway to Heaven). The City owns the Ha`iku Stairs but does not own the land under the stairs. This land is owned by the BWS. Since 2000, the City was involved with the repair and renovation of the stairs, and swapping of land with DHHL under the Harris Administration. Renovation of the stairs was completed in 2002, but the land swap encountered problems. In May 2005, the current Mayor offered the stairs to the State, but the Governor declined the Mayor's offer. The Director of DLNR felt that there was no compelling reason for the state to take over responsibility of the stairs from the City. The stairs had recreational value, but not enough to qualify for inclusion in the state's Na Ala Hele Statewide Trails and Access Program.[5] Items which are important to the City, include:

- The disposition/transfer of the Haiku Stairs is an unresolved issue. The City is reviewing its options.
- Integrity of the valley slope is a concern to the City if the Haiku Stairs is dismantled or demolished.
- The City doesn't have a position regarding the cultural preserve. Its only concern would be what impact it would have on the road system.

Access into Ha`iku Valley is a major issue and must be resolved if a Cultural Preserve is implemented. Higher traffic density in nearby community areas, trespassing of residents' property, loitering, and liability for landowners are important concerns. The access issue tops the list of concerns in any discussion on the use of Ha`iku Valley.

The State Department of Transportation is the state agency responsible for the H-3 freeway and the lands surrounding the freeway in North Halawa Valley and Ha`iku Valley. Under Section 106 of the National Historic Preservation Act, the area of potential effect (APE) defines the area in which HDOT works to mitigate any adverse impact caused by construction of the H-3 freeway. Important comments from HDOT include:

[5] "City should make one last try at saving stairs," Editorials, The Honolulu Advertiser, December 6, 2006.

- Any discussion of areas outside the APE requires dispute resolution of which HDOT is a consulting party. HCR 278 expands the areas of consideration for the Memorandum of Agreement and Record of Decision for H-3, and this would require additional costs not currently in the H-3 budget.
- Having another archaeological survey completed is an obstacle. The cost would be under another agency's jurisdiction, perhaps funded by the Legislature.
- OHA is the designated State agency that should start the process to decide who should be part of the discussion.
- If you establish cultural preserves in Halawa/Luluku, the Legislature needs to determine public/private partnerships for long-term maintenance of the cultural preserves.
- The Halawa Luluku Interpretive Development Plan exists with the intent for cultural preservation. HDOT is the landowner who grants the use of the land based on conditions for use and occupancy.
- The DLNR/SHPO should be the lead State agency for those lands under the jurisdiction of HDOT.

Prior to construction of the H-3 freeway in North Halawa Valley, Kamehameha Schools (KS) and Queen Emma Land Company (QELC, formerly known as Queen Emma Foundation) were the owners of the land in that valley. The State is condemning the inner part of the valley from KS, and QELC leases the outer portion of the valley to Hawaiian Cement Company.

Stewardship is KS' primary concern for North Halawa Valley. Best practices for ongoing preservation and care of cultural and natural resources are important to them. Invasive species control and management, ungulate (pigs, or other hoofed animal) management, replacing invasive species with native species are some of the practices that must be implemented. Other concerns are:

- Securing funding for sustainability and program operations is a challenge. There is concern that under HDOT ownership of the valley there would not be sufficient funding for historic preservation and cultural and natural resource management. HDOT's focus is highways, harbors, and engineering.
- Regarding the condemnation, KS is concerned about getting it settled. However, if the State received all of the valley would they take care of it and be a good steward of the land?
- In the Ha`iku Valley area, KS is open to an easement for an access road, provided that is what all parties want, and that someone is going to pay for it.

QELC had concern about the condemnation and where it would stop. However, the State's condemnation in North Halawa Valley only involves land owned by KS, and not QELC. There were over 60 archaeological features discovered in Halawa Valley during Bishop Museum's Archaeological survey of the valley. The Halawa Luluku Interpretive Development project will address the interpretations and mitigations in their interpretive development plan. QELC had concerns about how will access issues be identified. There are two important

considerations regarding access: those involve security of the area and identifying who is allowed to enter. The HLIDP is addressing this concern with its working group.

The HLID Working Group was asked to provide input regarding HCR 278. They provided the following statement: "The Halawa Luluku Interpretive Development Working Group supports the Legislature's intent of establishing cultural preserves in North Halawa Valley and Ha`iku Valley, but recommends the `ili of Luluku and a learning center in North Halawa Valley also be included in the resolution. Objectives for these areas are documented in the Strategic Plan, Volume 1, Halawa-Luluku Interpretive Development Plan, dated October 3, 2005, and the Working Group recommends that these objectives be the basis for any preservation planning to establish cultural preserves in North Halawa Valley, Ha`iku Valley and the `ili of Luluku."

During November 2006, two public meetings were held to gather community input from the Ha`iku and Halawa areas. Transcripts and comment sheets from these meeting are attached to this report as Appendix A and Appendix B. We found the community very receptive to the idea of establishing cultural preserves in North Halawa Valley and Ha`iku Valley. General findings from these meetings include:

- The public input was supportive of HCR 278
- There is a strong opinion that OHA should buy Ha`iku Valley so cultural preserves could be established.
- Funds from the 2005 State Legacy Lands Law or City and County of Honolulu funding of important lands could be considered for purchase of the valley.
- The `Ili of Luluku should be considered along with North Halawa Valley and Ha`iku Valley.
- The cultural preserve should include formal and informal learning opportunities for adults and children, residents and visitors.
- The Hawaiian culture needs to be respected. People who have memories of Ha`iku Valley want to see things like taro lo`i restored, and heiau and iwi properly respected.
- What are the agreeable alternatives for access to the valley? Residents are concerned about trespassing and higher traffic density.

IV. CONCLUSIONS

a. In reaching out to the departments, agencies and community we found that there is support for cultural preserves in North Halawa Valley and Ha`iku Valley. However, the departments and agencies viewed their role as being passive stewards.

b. In developing plans for these cultural preserves, the `ili of Luluku should be included. The `ili of Luluku is historically known for its agriculture production on terraces which descended the slopes of the Ko`olau mountains. Kalo, banana, sweet potato production was prominent in this area.

c. The State's condemnation of North Halawa Valley was filed on July 13, 1992 (Civ. 92-2435-07), and is still unsettled. Until the State's condemnation is settled, completion of the HLID project in the valley will be fully utilized.

d. Several planning issues need clarity for good decisions to be made regarding these cultural preserves. Departmental jurisdiction and responsibilities, assessment of previous archaeology studies and integrity of the land, defining what is meant by "cultural preserve," and resolving access into Ha`iku Valley are some of the component issues. Clarity in these and other areas will aid the development of these cultural preserves.

e. There was a community sentiment that OHA be a part of these cultural preserves, and several community members in the Ha`iku area felt OHA should be the steward in the Ha`iku Valley.

f. Funding is required to make the cultural preserves a reality. The HLID project's $11 million will address some cultural aspects within these valleys. However, the HLID purpose is more specific in nature and does not include the entire valleys in North Halawa and Ha`iku. If the Legislature's intent is to become a reality, it requires the Legislature's funding support.

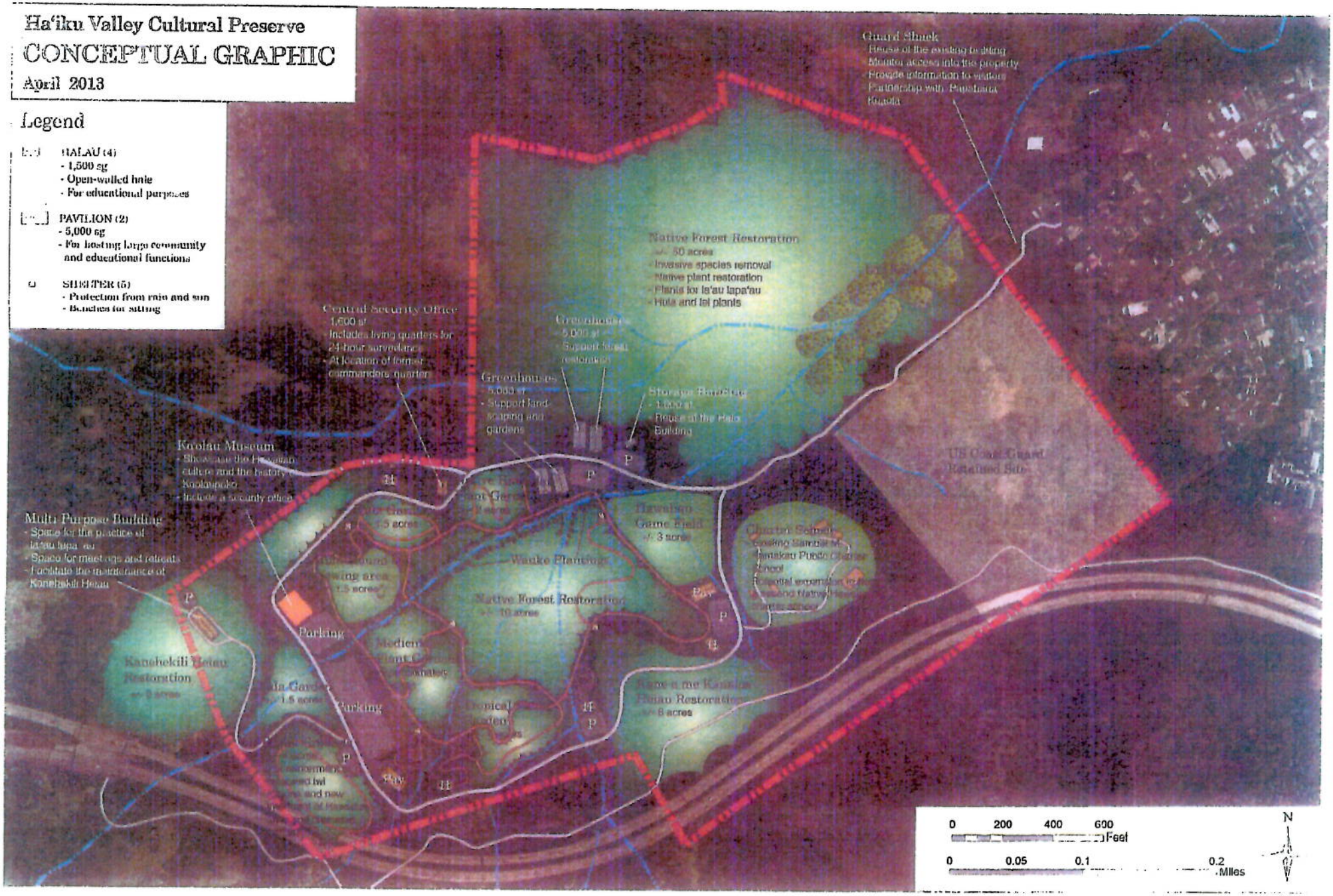
V. RECOMMENDATIONS

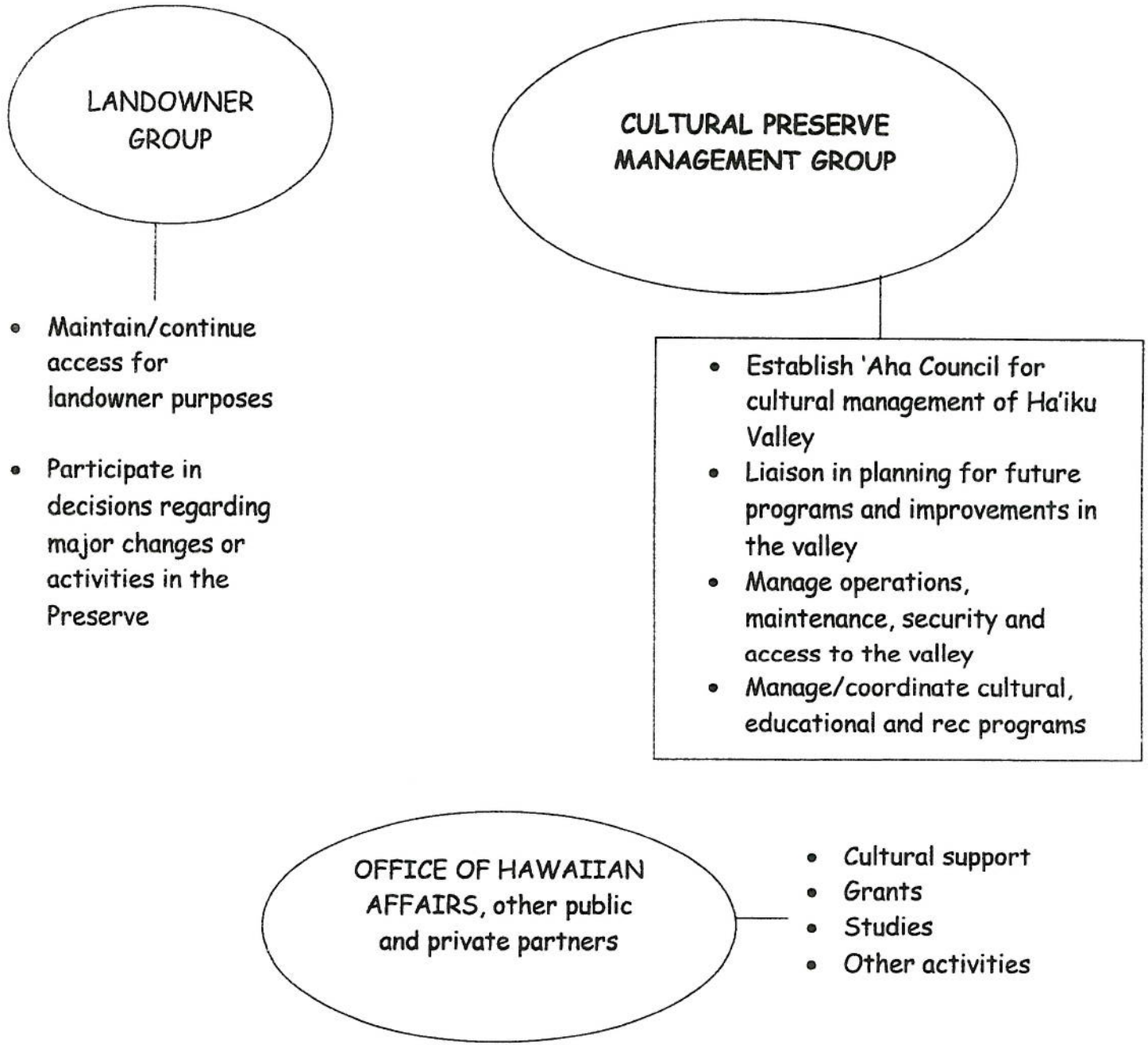
The following recommendations are made:

a. Implement planning actions which encompass the complex issues involved in making North Halawa Valley and Ha`iku Valley cultural preserves, and that provide the State a plan of action for these areas becoming cultural preserves. We recommend the Legislature provide a $250,000 planning grant to address the planning issues and potential for the areas addressed in the resolution.

b. The Legislature should assess the need for funding of actions to develop these cultural preserves. The items requested in HCR 278, and other planning action could not be accomplished without sufficient funding.

c. A statement or resolution from the Legislature requesting settlement of Civil No. 92-2435-07, State of Hawaii v. Kamehameha Schools, would help complete the condemnation of North Halawa Valley and allow the HLID Interpretive Development Plan to be fully utilized.


Ha'iku Valley Cultural Preserve
CONCEPTUAL GRAPHIC
April 2013
Legend
HALAU (4)
- 1,500 sg
- Open-walled hale
- For educational purposes
PAVILION (2)
- 5,000 sg
- For hosting large community and educational functions
SHELTER (5)
- Protection from rain and sun
- Benches for sitting
Guard Shack
- Reuse of the existing building
- Monitor access into the property
- Provide information to visitors
- Partnership with Papahana Kuaola
Native Forest Restoration
+/- 50 acres
- Invasive species removal
- Native plant restoration
- Plants for le'au lapa'au
- Huia and lei plants
Central Security Office
1,600 sf
- Includes living quarters for 24-hour surveillance
- Relocation of former commanders quarter
Greenhouses
5,000 sf
- Support landscaping and gardens
Greenhouses
5,000 sf
- Support forest restoration
Storage Building
- 1,000 sf
- Reuse of the Hale Building
US Coast Guard Retained Site
Kaolau Museum
- Showcase the Hawaiian culture and the history of Kaolapoko
- Include a security office
Multi Purpose Building
- Space for the practice of le'au lapa'au
- Space for meetings and retreats
- Facilitate the maintenance of Kanehekili Heiau
Hawaiian Game Field
+/- 3 acres
Cluster School
existing kamiki at Kamakau Puuki Cluster School
potential expansion to the east and native plant restoration
Wauke Plantings
Native Forest Restoration
+/- 10 acres
Parking
Medicinal Plant Garden
Kanehekili Heiau Restoration
+/- 3 acres
Ia Garden
+/- 1.5 acres
Parking
Tropical Garden
Kaao a me Kanaka Heiau Restoration
+/- 8 acres
Pay
0 200 400 600 Feet
0 0.05 0.1 0.2 Miles
N


LANDOWNER GROUP
Maintain/continue access for landowner purposes
Participate in decisions regarding major changes or activities in the Preserve
CULTURAL PRESERVE MANAGEMENT GROUP
Establish 'Aha Council for cultural management of Ha'iku Valley
Liaison in planning for future programs and improvements in the valley
Manage operations, maintenance, security and access to the valley
Manage/coordinate cultural, educational and rec programs
OFFICE OF HAWAIIAN AFFAIRS, other public and private partners
Cultural support
Grants
Studies
Other activities

ABOUT

THE KO`OLAU FOUNDATION

KO'OLAU FOUNDATION
2014
NARRATIVE DESCRIPTION

The Ko'olau Foundation is a community-based organization comprised primarily of native Hawaiians and others who are involved in cultural and educational activities in the moku of Ko'olaupoko (Windward) on the island of O'ahu, Hawai'i.

Our organization has been very active in providing tours, lectures and programs to educate the community about Hawaiian historic sites and cultural areas. We conduct research, prepare educational materials and offer comments, as needed, on various matters affecting historic sites and historic preservation here in Hawai`i.

Prior to the closure of the Ha`iku Valley OMEGA Station in 1998, our organization conducted community outreach and educational programs to inform the public of historic and cultural resources in the area, and to solicit input from the public about the possible development of a cultural preserve in the vicinity of Ha'iku Valley, located in He'eia ahupua'a near Kane'ohe, O'ahu.

During the mid-1990s, a series of meetings were held to explore a community vision for the future use of this valley, which had been held under military control since the 1940s and which was in the process of base closure. Feedback received at that meeting was incorporated into a proposed plan for establishment of a cultural preserve in Ha'iku Valley, which would provide opportunities for the community to use the ahupua'a (land area from mountain to sea) as a living, educational and cultural environment. These community suggestions were also incorporated into comments of the Halawa-Luluku Interpretive Development Plan working group.

Members of the Ko'olau Foundation represent various other community organizations which work to educate and inform the public about cultural and historic areas, primarily in the Windward region of the island of O'ahu. In addition, they are participants in numerous community forums and other activities that perpetuate traditional and cultural practices of native Hawaiians. The Foundation recently hosted a series of workshops in the valley aimed at teaching students in the health fields to recognize Hawaiian medicinal plants in their community.

Current activities of the Ko'olau Foundation are focused on establishing their non-profit IRS status and seeking funding to support an expanded community outreach effort for its cultural and educational programs. The foundation seeks to partner with public and private agencies in the future to provide and support cultural and historic preservation education and activities.

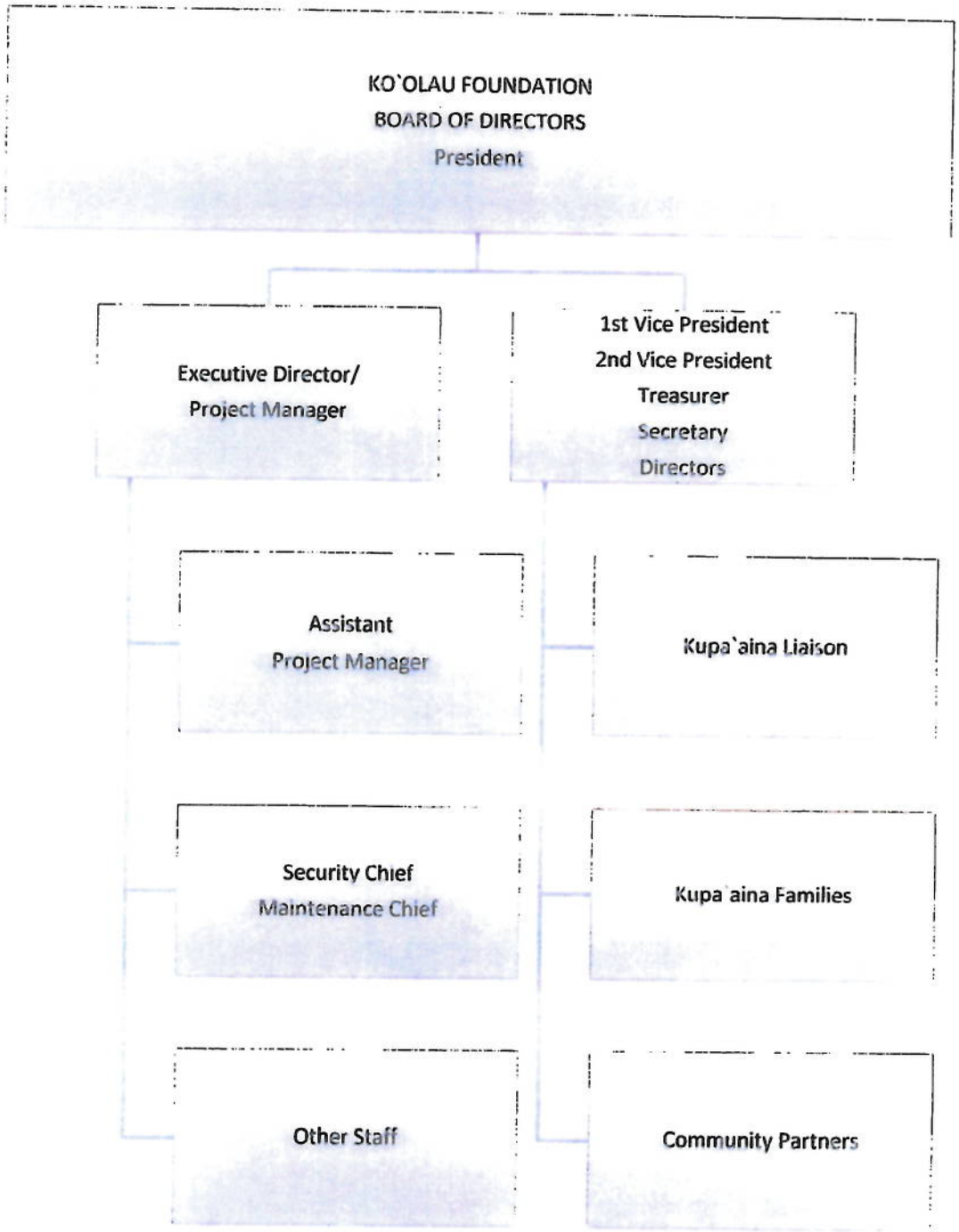
We see our mission as providing educational programs, support and encouragement for the preservation of historic and cultural areas, and traditional and cultural practices of Native Hawaiians throughout the State of Hawai`i. We also hope someday to participate in actively securing and preserving historic properties in perpetuity.

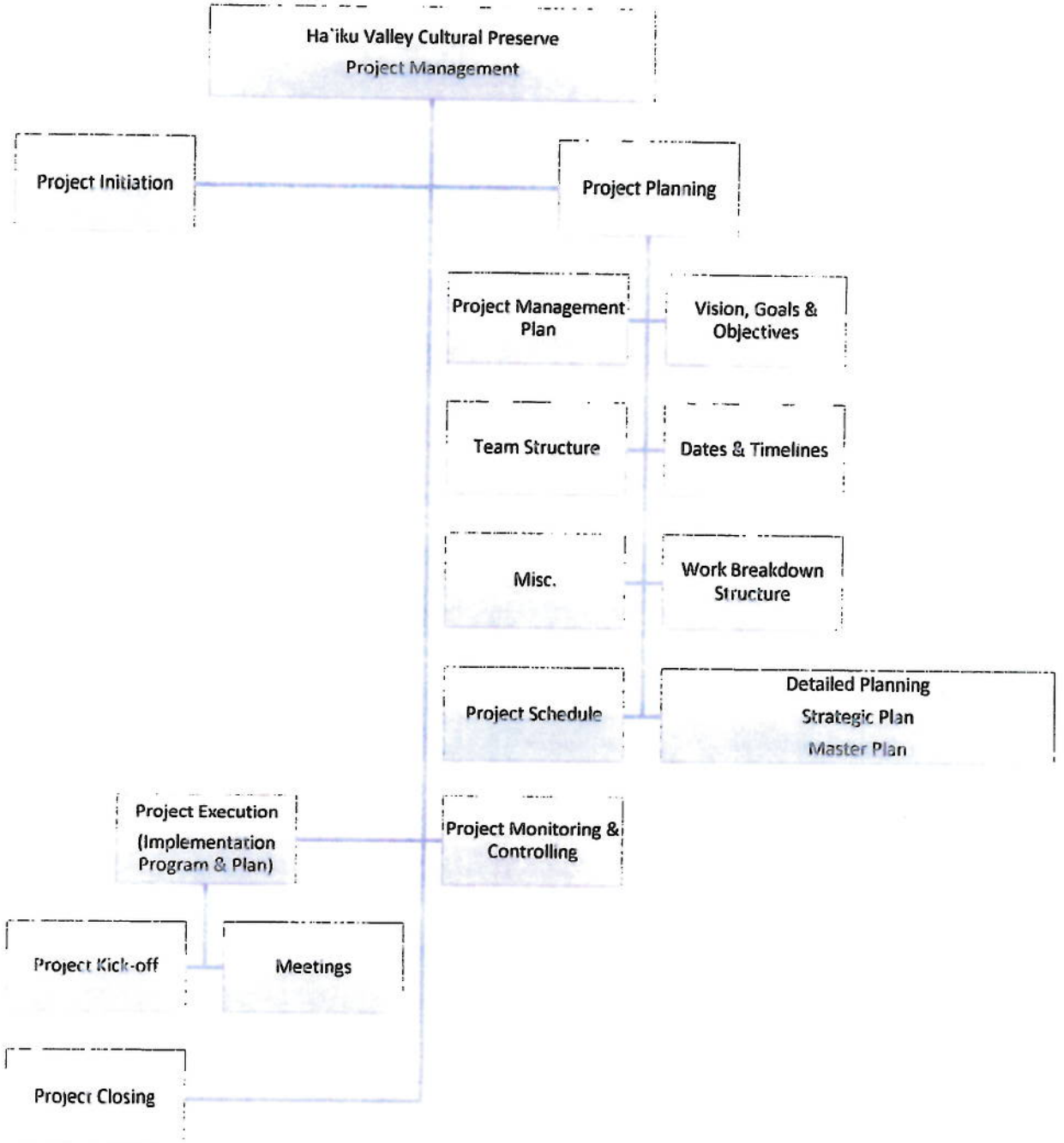
KO`OLAU FOUNDATION
OFFICERS AND DIRECTORS
2014-2015

NAME	OFFICE	DATE
MAHI, Aaron	P	July 13, 2014
AKINA, LAWRENCE JR	D	July 13, 2014
WONG, GORDON	Vice President	July 13, 2014
CYPHER, MAHEALANI	S	July 13, 2014
JONES-TOLLEFSEN, LEILANI	T	July 13, 2014
AKANA, JILL	D	July 13, 2014
AKINA, DONNA	D	July 13, 2014
BRIGHT, THERESA	D	July 13, 2014
HEWETT, ALICE	D	July 13, 2014
KALUHIWA, FRANCES L	D	July 13, 2014
KALUHIWA, JERRY M	D	July 13, 2014
LOPES, SHANDRY	D	July 13, 2014
LUM, EDWIN	D	July 13, 2014

Submitted by:

MAHEALANI CYPHER, Secretary
Ko`olau Foundation
Ph. (808) 226-4195
Email: malamapono744@aol.com


KO`OLAU FOUNDATION
BOARD OF DIRECTORS
President
Executive Director/
Project Manager
1st Vice President
2nd Vice President
Treasurer
Secretary
Directors
Assistant
Project Manager
Kupa`aina Liaison
Security Chief
Maintenance Chief
Kupa`aina Families
Other Staff
Community Partners


Ha'iku Valley Cultural Preserve
Project Management
Project Initiation
Project Planning
Project Management Plan
Vision, Goals & Objectives
Team Structure
Dates & Timelines
Misc.
Work Breakdown Structure
Project Schedule
Detailed Planning
Strategic Plan
Master Plan
Project Execution (Implementation Program & Plan)
Project Monitoring & Controlling
Project Kick-off
Meetings
Project Closing

OTHER DOCUMENTS

POLICIES & PROCEDURES

JOB DESCRIPTIONS

DRAFT CURATOR AGREEMENT

KO`OLAU FOUNDATION
POLICIES & PROCEDURES

A. Administration

1. Personnel Standards:

a. Employees of the Ko`olau Foundation shall be defined as anyone who is hired on contract or for permanent employment by the Ko`olau Foundation.

b. Employees shall comply with all requirements of their employment agreement as well as all county, state and federal laws.

c. Employees shall report directly the President of the Board of Directors or his/her designee unless otherwise stipulated in the employment agreement.

d. Employees and members of the Board of Directors will be expected to understand, accept and practice Hawaiian cultural values of aloha and respect when representing the Ko`olau Foundation in any capacity.

2. Operating Procedures

a. The Ko`olau Foundation operates as a not-for-profit community organization and, as such, its board is comprised of volunteer officers and directors.

b. The board of directors will convene at a scheduled meeting in February of each year, or at any special meetings as requested by the President or board members.

c. The Ko`olau Foundation shall approve an annual budget for operations of the Foundation, and may approve periodic amendments to the budget as needed.

d. Employees of the Ko`olau Foundation shall be hired by and shall report to the President or his/her designee, unless otherwise determined by the President and/or the board of directors.

e. The President or his/her designee shall determine the work schedule for any employee of the Ko`olau Foundation, and shall be required to supervise the work product of employees.

f. The President or his/her designee shall ensure that employees are compensated according to the approved budget of the Ko`olau Foundation, and shall determine a schedule for payment, to be included in the employment agreement.

3. Disciplinary Measures or Discharge

a. The board of directors shall adopt a procedure for disciplinary measures or discharge of employees.

b. The President or his/her designee shall follow such measures should it be necessary to discipline or discharge an employee.

4. Documentation and Record-Keeping

a. All correspondence, invoices, receipts, reports, agenda, minutes and other documents, including electronically transmitted documents, shall be copied and kept on file with the records of the Ko`olau Foundation.

b. Responsibility for maintenance of these files shall be assigned to the Ko`olau Foundation Secretary or his/her designee.

c. All records shall be maintained in an office or file cabinets secured by the Ko`olau Foundation.

5. Data-gathering and Reporting

a. Officers and employees of the Ko`olau Foundation shall be responsible for keeping track of all data collected in connection with any work programs or projects of the Foundation, according to their specific assignments.

b. Officers shall be responsible for collecting information or data relating to their specific kuleana as officers

c. Logs or other forms of data-gathering and reporting shall be presented to the President of his/her designee as appropriate for consignment to the official files of the Ko`olau Foundation.

d. The President and/or his/her designee shall present regular reports to the President and/or board of directors for on-going programs, projects or activities of the Foundation. The schedule for these reports shall be determined by the President and/or the board of directors.

6. Financial Administration

a. All monies collected by the Ko`olau Foundation shall be turned over to the Treasurer for deposit into the Foundation's bank account(s).

b. All invoices or other bills presented to the Ko`olau Foundation shall be turned over to the Treasurer for payment.

c. The Ko`olau Foundation shall approve an annual budget to meet its expenses for the year, and shall comply with that budget to the greatest extent possible.

d. The Treasurer shall provide an updated accounting of all receipts, disbursements, and bank account balances at the annual meeting of the board of directors, or upon request during any special meeting of the board.

e. Funds received on behalf of the Ko`olau Foundation by its fiscal sponsors shall be maintained and managed by the 501(c)(3) fiscal sponsor. Disbursement of such funds shall be determined by the fiscal sponsor, the President, and the project manager.

f. The Ko`olau Foundation's fiscal sponsor shall be responsible for auditing any grant monies received for projects coordinated by or through the Foundation.

7. Quality Assurance

a. To ensure that the quality of work done by or on behalf of the Ko`olau Foundation meets best practices and standards for effective delivery

of goods and services, the Ko`olau Foundation shall adopt a "Quality Assurance Plan".

b. The plan shall include, but not be limited to, the following:
   i. Determination of adequate technical requirements of inputs and outputs
   ii. Certification and rating of suppliers, whenever possible
   iii. Testing of procured material or services for its conformance to established quality, performance, safety and reliability standards, whenever possible
   iv. Proper receipt, storage (as needed), and issuance of material or services, as appropriate
   v. Audit of the process quality, as needed
   vi. Evaluation of the process to establish appropriate corrective response; and
   vii. Audit of the final response for conformance to technical, reliability, maintainability and performance requirements.

8. Monitoring and Evaluation

a. Evaluation of projects or activities conducted by the Ko`olau Foundation shall include a variety of approaches.

b. These approaches may include, but are not limited to, the following:
   i. Providing survey forms to obtain feedback from recipients of the program or activities.
   ii. Evaluating the surveys to identify remedies or effective activities carried out on behalf of the Ko`olau Foundation.
   iii. Reviewing response to outreach efforts to achieve maximum participation by target groups for the Ko`olau Foundation's programs, projects and activities.
   iv. Identifying potential problems and alternative solutions for adjusting programs, projects and activities of the Ko`olau Foundation.

c. Such evaluations and monitoring of effectiveness shall be carried out at the board level, for broad-spectrum initiatives of the Ko`olau Foundation; or at the project team level, for subordinate activities of a project.

d. Evaluations and reviews/problem-solving shall be conducted in a timely manner to maximize successful conclusion of the Foundations programs, projects and activities.

KO`OLAU FOUNDATION

Ha`iku Valley

Cultural and Community Access Procedures

Purpose

These procedures and protocols are to be followed in allowing access to the `ili of Ha`iku, ahupua`a He`eia, moku Ko`olaupoko, under the auspices of the Ko`olau Foundation. The purpose of these procedures and protocols is to ensure that the wahi pana and wahi kapu are properly respected and protected, and that all behavior while on the property acknowledges proper care and safeguarding of the premises and people visiting this `aina.

It is the desire of the Ko`olau Foundation that a culturally-sensitive security program be established to enable and facilitate access to cultural areas for native Hawaiian practitioners and kupa`aina families. It is also the goal of the Ko`olau Foundation to employ a cadre of trained na koa – native Hawaiian warriors trained to protect and defend – to serve as security for this property.

Protocols and Procedures

1. As this `aina is bestowed upon us by our `Akua and because we are guided by our kupuna kahiko and our aumakua, we regard it to be the kuleana of all who enter this property to be respectful, responsible, and pono at all times.

2. Caretakers of the property will exercise proper diligence to safeguard the `aina, the wahi kapu and the people who are present on the property.

3. Visitors to the property will ask permission to enter the property by checking in at the security gate and, whenever possible, by submitting advance request for admission to the premises.

4. All visitors to the property will be expected to assume their own liability for their personal safety and for safeguarding their own possessions while on the premises, and shall sign a waiver of liability upon entrance to the property. In the case of minor visitors, a responsible adult shall accompany such minors at all times and sign the waiver form on their behalf.

5. Access to the property shall be **managed access**, in that admission to the property will be through a security gate, upon signing a waiver of liability form with the guard, and allowable during posted hours. In addition, there shall be a limitation

upon the number of people allowed access into the property according to a schedule to be determined by the Ko`olau Foundation.

6. Vehicular access into the property shall be limited to passenger cars and vans, bicycles, delivery and utility trucks. Access for buses shall be limited to no more than two buses per day, unless prior permission for more large vehicles for special events is granted by the Ko`olau Foundation.

7. Access to the property shall be limited to five days per week on a schedule to be determined by the Ko`olau Foundation.

8. The Ko`olau Foundation reserves the right to refuse admission to any person at any time, with the exception of lessees and representatives of state and county agencies, landowners, or other partners permitted access by previous arrangement.

KO`OLAU FOUNDATION
Ha`iku Valley
Security Procedures

Purpose

The purpose of these procedures is to ensure the safeguarding of the land and property of Ha`iku Valley located on TMK Parcels 1-C, Parcels 6-10, Parcels 13-15, and addressing the security of visitors to the property when it is open to the public. Note: these procedures will be updated upon completion of a comprehensive security plan for Ha`iku Valley that includes participation by major landowners, lessees and other stakeholders in the area.

Overall approval for these procedures will be under the jurisdiction of the `Aha Council of Ha`iku Valley, to include the landowners and lessees such as the Department of Hawaiian Home Lands, the Office of Hawaiian Affairs, the Honolulu Board of Water Supply, the Ko`olau Foundation, Samuel Kamakau Charter School, and other lessees and landowners of interest.

It is the desire of the Ko`olau Foundation that a culturally-sensitive security program be established to enable and facilitate access to cultural areas for native Hawaiian practitioners and kupa`aina families. It is also the goal of the Ko`olau Foundation to employ a cadre of trained na koa – native Hawaiian warriors trained to protect and defend – to serve as security for this property.

Procedures

1. Access to Ha`iku Valley shall be via the main gate at the top of Ha`iku Road.

2. A guard station shall be located at the entrance gate and will be staffed on all days and times to be coordinated by the Ko`olau Foundation and Samuel Kamakau Charter School. Other guard stations may be established at the intersection of the valley loop road and the Board of Water Supply cut-off, at the OMEGA station, and elsewhere as needed.

3. Security guards shall be employed to staff the entrance guard station during all public open hours, and a security guard station at the OMEGA building during evening hours. In addition, there shall be at least one roving security guard patrolling throughout the valley during all public hours.

4. All visitors, including delivery trucks, vans, pedestrians, bicyclists, etc., are required to sign in at the entrance gate. For occasional visitors, a waiver form will be provided at the gate. For large groups or businesses, waiver forms can be provided and submitted in advance and a special authorization placard will be provided.

5. Personnel or students from the Charter School, Board of Water Supply, or Ko`olau Foundation will be provided with authorization permits to facilitate their daily access into the area.

Security Guidelines

1. Visitors will be allowed to bring in the following items:

   - Picnic lunches and soft beverages/water
   - Bicycles and passenger vehicles/vans
   - Beach chairs and mats
   - Cameras
   - Other personal items as needed

2. The following items will not be permitted into the valley:

   - Firearms (except those authorized for law enforcement)
   - Weapons (except those authorized for law enforcement or for cultural demonstrations)
   - Illegal drugs
   - Alcohol (except those authorized by permit for special events)
   - Motorcycles or mopeds

3. The following behaviors are permissible in the valley:

- Cultural access for native Hawaiians to visit wahi kapu in the area
- Visiting the OMEGA station
- Volunteer service work for maintenance, security, cultural or educational programs
- Maintenance of halau or native plant gardens
- Touring cultural sites as indicated on visitor guide-maps
- Hiking on trails as authorized on visitor guide-maps
- Jogging, bicycling, walking
- Makahiki games/sports
- Other authorized recreational and educational activities

4. The following behaviors will not be permitted in the valley:

- Substance abuse
- Assault
- Theft from buildings, vehicles, or people
- Damage to people, property or premises
- Unauthorized gathering of plants or foliage
- Unauthorized entrance into certain areas marked "off-limits"
- Remaining on the property after closing hours
- Speeding – the speed limit is 20 mph on the loop road

5. The `Aha Council reserves the right to refuse admission to any entity on the grounds that their access may pose a risk or hazard to the `aina, the wahi kapu, or the people charged with caring for the property.

(These procedures and guidelines are subject to review and have not yet been approved by any of the parties identified in this document.)

KO`OLAU FOUNDATION
Ha`iku Valley
Emergency Procedures

Purpose

The purpose of these procedures is to ensure that staff and personnel assigned to work in Ha`iku Valley are aware of their responsibilities to address incidental emergencies that may arise on the property.

Procedures

1. Fully-equipped First-Aid kits and communications devices shall be kept available at major sites in the valley (i.e., guard stations, OMEGA and Maintenance Building, etc.) during all public hours of operation.

2. Communications devices shall be made available to all security personnel while on property to respond to emergency calls for assistance. In addition, the chief of security shall be equipped with a communications device and be available on-call at all times for emergency response.

3. Security personnel, administrative staff and docents shall be provided with first-aid training to respond to incidental minor emergency requests for help.

4. County emergency personnel shall be called in the event a visitor, volunteer or staff person encounters a major emergency situation. Major emergencies shall include but not be limited to the following:
    a. Adverse respiratory condition
    b. Injuries to limbs from falls
    c. Dizziness that continues beyond 3-5 minutes
    d. Fire hazard in buildings or hiking areas
    e. Other major emergencies as defined by County emergency response agencies

5. Educational/cultural groups entering the valley to present their programs will be required to have portable communications devices to call for help, should emergencies occur. They will also be required to sign liability waiver forms, prior to entry, to establish their responsibilities to safeguard their personnel and guests.
6. Coordination with other lessees and landowners in the valley will be established to ensure all occupants/visitors in the valley are aware and address similar emergency procedures.

7. Other emergency procedures as needed.

KO`OLAU FOUNDATION

Executive Director
Position Description

Position Title: Executive Director
Reports To: Ko`olau Foundation President and Board of Directors

Summary

Under the direction of the Board of Directors, the executive director is responsible for overall management and operation of the Ko`olau Foundation and protection of the organization's financial assets while ensuring compliance with board directives, and applicable grantor, federal and state requirements.

The executive director serves as project manager to oversee the design, development and implementation of strategic and master plans for the organization in a cost-effective and time-efficient manner. The executive director is also responsible for the day-to-day operation of the Ko`olau Foundation, including managing committees and staff and developing business plans in collaboration with the board for the future of the organization. The executive director is accountable to the President of the Board and reports to the board on a regular basis - quarterly, semiannually, or annually. The Board may offer suggestions and ideas about how to improve the organization, but the Executive Director decides whether or not, and how, to implement these ideas.

Essential Duties and Responsibilities

The executive director is responsible for overall operations, asset protection and marketing/public relations for Ko`olau Foundation, a 501(c)(3)non-profit private research and education corporation providing a flexible funding mechanism for the conduct of programs, operations and activities of the Foundation. The incumbent also:

- Oversees all accounting functions including those necessary for auditing, budgeting, financial analysis, capital asset and property management and payroll in accordance with generally accepted accounting principles, board and Foundation policies and procedures, and all other applicable rules and guidelines. These functions may be outsourced but the executive director must assure that the organization is in compliance with all legal requirements.

- Handles all aspects of human resource management of employees including but not limited to hiring and termination, developing position descriptions, setting compensation, working with employees' supervisors and applying board-approved employee policies and benefits in accordance with federal and state requirements; regularly supervises

Ko`olau Foundation administrative staff. Such services may be outsourced as a cost-efficiency measure.

- Interacts with other personnel and organizations, such as Samuel Kamakau Charter School, the Board of Water Supply, the Department of Hawaiian Home Lands, the Office of Hawaiian Affairs, Hui Ku Maoli Ola, Hakipu`u Learning Center, the Kamehameha Schools, Windward Community College, Ha`iku Village Residents Association, the Kane`ohe Neighborhood Board, the Ko`olaupoko Hawaiian Civic Club, Kako`o `Oiwi, and other organizations and government agencies in regard to matters affecting the Ko`olau Foundation.

- Is responsible for grants and contracts management including negotiating property use agreement terms that reflect the needs of Ko`olau Foundation; coordinates with legal advisors to finalize agreement terms; monitors progress of agreements and maintains agreement documentation to ensure fulfillment of agreement terms including receipt and expenditure of funds.

- Assists in the development of current and long-term organizational goals and objectives as well as policies and procedures for Ko`olau Foundation operations. Establishes plans to achieve goals set by the Board of Directors and implements policies, subject to approval by the Board of Directors.

- Works closely with department supervisors and their staff members to ensure they are provided with appropriate support systems.

- Analyzes and evaluates vendor services, particularly for insurance, employee benefits and management of Ko`olau Foundation funds, to determine programs and providers that best meets the needs of Ko`olau Foundation and makes recommendations to the Board, as appropriate; negotiates services, terms and premiums and executes contracts with benefit plan providers, supply and service vendors, auditors and consultants ; manages payroll and benefits programs. Such services may be outsourced as a cost-efficiency measure.

Core Competencies

To perform effectively in this position, the individual should demonstrate the following competencies. These core competencies represent effective administration of the Ko`olau Foundation and its programs fulfilling the Foundation's mission.

Management: Maintains effective systems of internal controls to account for all receipts and expenditures of funds. Manages corporate funds to maximize the earnings under the federal regulations. Develops options available to the board for using corporate resources to support the programs, goals and objectives of the Ko`olau Foundation.

Job Knowledge: Understands the technical aspects of managing a nonprofit organization; provides advice to its Board and staff directly and/or solicits guidance from experts. Understands the duties and responsibilities of the position and keeps job knowledge up-to-date. Clearly understands the cultural heritage preservation and education mission of the organization and continuously works to promote the Ko`olau Foundation and achieve its goals.

Communication: Communicates effectively with multiple audiences using a variety of formats. Examples include: written communications that clearly outline the situation and action items; verbal presentations and briefings to the research and education managers, the board of directors and other parties; presenting at local meetings and to outside groups regarding a variety of issues affecting the Ko`olau Foundation and Ha`iku Valley.

Dependability: Seeks increased responsibility while remaining conscientious, thorough, accurate, and reliable with respect to achieving the organization's goals, and the needs of the native Hawaiian community, the Ko`olau Foundation and staff. This includes being available and responsive to issues and concerns as they arise.

Education and/or Experience

No specific education required. However, the executive director must possess above skills, experience, knowledge and qualities which may result from formal education or at least three years experience in business, government, non-profit operational management, or related areas.

Physical Demands

While performing the duties of this Job, the executive director is regularly required to sit, stand, walk, speak and hear. There will also be some hiking involved to inspect terrain and identify areas to be addressed in formation of planning and implementation of improvements to Ha`iku Valley. The position requires extensive computer use so the employee must have sufficient hand dexterity to use a computer keyboard and be capable of reading a computer screen and be able to work with most standard computer programs.

Travel

The executive director must be able to travel to attend conferences, training and other events as required to acquire and maintain proficiency in fulfilling the responsibilities of the position.

Ko`olau Foundation

Job Title:	Administrative Assistant	**Job Category:**	
Department/Group:		**Job Code/ Req#:**	
Location:	He`eia/Kane`ohe, O`ahu	**Travel Required:**	
Level/Salary Range:	40,000/year ($20,000 = ½ time)	**Position Type:**	½ time
HR Contact:		**Date posted:**	
Will Train Applicant(s):	yes	**Posting Expires:**	
Internal posting URL:			

Applications Accepted By:

Fax or E-mail: larryakina@gmail.com Subject Line: Ha`iku Valley Cultural Preserve Project **Attention:** Employment	**Mail:** Mr. Larry Akina, Jr. Ko`olau Foundation P. O. Box 4749 Kaneohe, HI 96744

Job Description

Job Purpose:

Serves as principal assistant to the executive director and project manager and must be able to perform key responsibilities of that position periodically. On an operational basis, implements administrative systems, procedures, and policies, and monitors administrative projects.

Duties:

- Maintains workflow by studying methods; implementing cost reductions; and developing reporting procedures.
- Creates and revises systems and procedures by analyzing operating practices, recordkeeping systems, forms control, office layout, and budgetary and personnel requirements; implementing changes.
- Develops administrative staff by providing information, educational opportunities, and experiential growth opportunities.
- Prepares correspondence, as needed or as directed by the executive director.
- Coordinates scheduling of meetings and appointments for the board of directors and

the executive director.

- Takes and prepares minutes of board and staff meetings.
- Resolves administrative problems by coordinating preparation of reports, analyzing data, and identifying solutions.
- Ensures operation of equipment by completing preventive maintenance requirements; calling for repairs; maintaining equipment inventories; evaluating new equipment and techniques.
- Provides information by answering questions and requests.
- Maintains supplies inventory by checking stock to determine inventory level; anticipating needed supplies; placing and expediting orders for supplies; verifying receipt of supplies.
- Completes operational requirements by scheduling and assigning administrative projects; expediting work results.
- Maintains professional and technical knowledge by attending educational workshops; reviewing professional publications; establishing personal networks; participating in professional societies.
- Contributes to team effort by accomplishing related results as needed.

Skills/qualifications:

- Reporting Skills, Administrative Writing Skills, Microsoft Office Skills, Managing Processes, Organization, Analyzing Information , Professionalism, Problem Solving, Supply Management, Inventory Control, Verbal Communication

Reviewed By:		Date:	
Approved By:		Date:	
Last Updated By:		Date/Time:	

Ko`olau Foundation
Position Description

Ha`iku Valley Cultural Preserve
SECURITY & MAINTENANCE CHIEF (Na Koa)
(Salary range: $50,000-55,000)

Duties/Security:

Provides fulltime management and is responsible for oversight for on-call, part-time staff to ensure that the property is secured at all times, and to staff the preserve during all open hours; facilitate access to the property for native Hawaiian cultural practitioners and/or families with ancestral ties to burial sites within the area; and protect cultural, natural and built environments.

In keeping with the Ko`olau Foundation's desire to maintain a culturally-sensitive security program, works with community outreach staff to ensure that community concerns are addressed. Works with other partners, lessees, landowners and stakeholders on security concerns within and adjacent to the property.

Maintains weekly records of all unusual incidents regarding persons entering/exiting the property, and serves as liaison with Honolulu Police Department and DLNR DOCARE officers. Provides monthly report to Executive Director/Project Manager on all security matters, including copies of after-hours access logs. Oversees staff and ensures that a daily log is established to record all persons entering and leaving the property.

Other examples of work duties:

Assigns and schedules work of subordinate security attendants; orients and instructs new employees on duties to be performed and pertinent rules and procedures; prepares and revises work schedules; relays or transmits orders from a superior; keeps superior informed of activities and work performance of subordinate personnel; makes periodic rounds of inspections of buildings, grounds, and/or equipment; prevents disorder, loitering, trespass, or theft, and investigates irregular occurrences; inspects doors, windows, locks and sprinkler system pressures; reports fires, unusual conditions and evidences of hazard, and takes preliminary protective measures; answers night telephones and responds to callers at the entrance door; requests and checks identification of after-hour callers; keeps records of arrival and departure of employees; reports violations of rules governing the use of buildings and grounds; checks vehicles within a specified area to insure windows and doors are securely locked; may perform miscellaneous tasks such as turning lights, electrical equipment and sprinkler systems on and off, etc.

Duties/Maintenance:

Provides fulltime management and is responsible for oversight of part-time staff to ensure that the property is maintained at all times, and to provide daily trash pickup at facilities on the property; assist native Hawaiian cultural practitioners and/or families with ancestral ties to burial

sites within the property to support their maintenance of these sites; and oversee maintenance of cultural, natural and built environments. Maintains weekly records of all maintenance activities.

Supervises the development, maintenance and beautification of landscaped areas surrounding buildings and other facilities; and performs other related duties as required.

Plans and makes work assignments for the development, maintenance and beautification of landscaped areas surrounding existing facilities and other structures; inspects grounds and landscaped areas to see that they are in proper condition and to review work of subordinates; inspects plants for diseases, determines means of combatting or controlling same, and supervises the fumigation, spraying or application of insecticides, fungicides and herbicides; determines future needs for flowers, grass and plants; plans landscaping layouts on minor projects and in renovating existing areas, and assists contract landscape architects in planning layouts and selecting proper plants and shrubs; supervises the planting, fertilizing and spraying of trees, plants and shrubs; supervises the screening and spreading of top soil and manure, and the grading of lawns; supervises the construction of vine supports, layout of plant beds and borders, and the excavating of ditches to prevent soil erosion; supervises the operation of power equipment including grass cutters and mowers, light tractors, shrub cutters, saws, sprayers, and tillers; trains subordinates in groundskeeping and chemical treatment operations and techniques; estimates time, labor and material costs and makes requisitions for material and equipment; insures proper maintenance and care of tools and equipment; keeps work and time records; reviews, prepares and submits operational reports; initiates and enforces safe practices; conducts experiments on weed control and directs a program on soil management involving aerating, compost-making, and mulching; provides information and answers inquiries from the public concerning plants, trees and shrubs.

Works with executive director to develop a long-term maintenance plan, including identification of resource needs and support, and a program to address short- and long-term maintenance activities in Ha`iku Valley

Provides daily monitoring of maintenance needs on the property, assigning work crews and volunteers to specific areas as needed, and maintaining weekly maintenance logs.

Works with community outreach staff to encourage community volunteers to assist in large cleanup projects. Works with other partners on maintenance concerns within Ha`iku Valley.

Provides monthly report to executive director on all maintenance matters, and provides copies of maintenance logs.

Qualifications:

1) Training and Experience: A combination of education and experience substantially equivalent to completion of high school, and sensitivity training in native Hawaiian cultural practices; experience in supervising other staff. Experience and/or training of sufficient scope and quality to show competence in the care, maintenance of grounds

and landscaped areas, and minimum of one-year's experience in a supervisory capacity.

2) Experience in working with community groups and government agencies (1 year)
3) Experience in managing maintenance or property management (min. 1 year)
4) Valid Hawaii Driver's License
5) Three (3) letters of reference.

License Requirement: Possession of a valid Hawaii State driver's license.

Knowledge of: the availability of local protective and security agencies; duties and responsibilities of security personnel; basic recordkeeping practices; native Hawaiian cultural protocols; principles and practices of supervision; characteristics and adaptabilities of various plants, shrubs, trees and grasses; methods of soil preparation for planting; the propagation, planting and general care of plants, flowers, shrubs, trees and lawns; the kinds of fertilizers and their uses; plant diseases and methods of eradication and control; methods of chemical application; operation of grounds maintenance equipment and tools.

Ability to: assign and supervise the work of others; keep simple work records; give and receive simple oral and written instructions; think and act quickly in an emergency; appraise situations and people and decide upon appropriate courses of action; handle all security functions with sensitivity to the Native Hawaiian community and cultural resources within Ha`iku Valley. Able to work effectively with law enforcement and emergency response agencies to safeguard people and resources within Ha`iku Valley; plan, lay out and develop landscaped areas; select proper plants for specific usage and conditions; prepare estimates of cost and prepare requisitions for materials, tools and equipment needed for maintenance work; detect and recognize plant diseases and initiate methods for their eradication and control; instruct and train subordinates in proper maintenance methods and safety practices; keep records and prepare reports; give and follow oral and written instructions.

Physical Requirement:

Persons seeking appointment to positions in this class must meet the health and physical condition standards deemed necessary and proper for performance of the duties.

Physical Effort Grouping: Moderate

KO`OLAU FOUNDATION

VOLUNTEER COORDINATOR

Position Description

Purpose

The purpose of this position is to ensure constant, reliable coordination of volunteer services to support the goals, objectives, programs and activities of the Ko`olau Foundation.

Duties

The duties of the volunteer coordinator may include, but are not limited to, the following:

1. Develop and maintain list of past and current volunteers.

2. Communicate regularly with Ko`olaupoko HCC and other organizations to notify them of volunteer service opportunities and schedules.

3. Set up regular schedule to publicize volunteer services via website, email, internet, etc., and carry out publicity activities as needed.

4. Take photos as needed for use in presentations or other informational materials.

5. Maintain communications with landowners regarding access to ensure regular access for cultural volunteer work days.

6. Maintain KF's tools and keep an inventory of them; replace tools as needed.

7. Coordinate with volunteers for lunches and water for volunteer service days.

8. Coordinate development and maintenance of Ko`olau Foundation website to include information on cultural service work activities and volunteer opportunities.

9. Other related duties as needed.

POSITION DESCRIPTION

Security Officer (Na Koa)
(Salary range: $20,436 - $31,512)

Duties:

Provides security at Ha'iku Road gate or as a roving security officer within Ha'iku Valley and other areas of the Preserve as needed. Maintains daily log of persons entering and exiting the property.

Makes periodic rounds of inspections of buildings, grounds, and/or equipment to check against trespass, damage or theft; reports observations, unusual occurrences or property damage; and performs other related duties as required.

Performs in a manner that is sensitive to native Hawaiian cultural practitioners, to the neighboring communities abutting Ha'iku Valley or the Preserve, and to the general public.

Serves on a part-time, 19-hours per week basis, on-call. Provides assistance to the Security Chief and performs other duties as needed.

Qualifications:

Training and Experience: A combination of education and experience substantially equivalent to completion of the eighth grade and one year of work experience. Ability to handle maintenance of access records.

License Requirement: Possession of a valid Hawaii State driver's license (Type 3), as required.

Knowledge of: the availability of local protective and security agencies; duties and responsibilities of security personnel.

Ability to: understand and carry out simple oral and written instructions; think and act quickly in an emergency; appraise situations and people and decide upon appropriate courses of action. Possess skills to work with the public in a culturally-sensitive manner. Flexibility and adaptability to changing conditions, as needed.

Physical Requirement:
Persons seeking appointment to positions in this class must meet the health and physical condition standards deemed necessary and proper for performance of the duties.

Physical Effort Grouping: Light

POSITION DESCRIPTION

Maintenance Worker
(Salary range: $24,564 - $24,816)

Duties:

Cares for and maintains lawns, hedges, trees, shrubbery, walks, medial strips and other planted areas by cleaning, planting, watering, fertilizing, trimming, mowing, sweeping and raking; assists in planting shrubbery and plants, sodding lawns, and propagating plants and shrubs from seeds, cuttings and roots; cares for grounds surrounding buildings and other facilities within the valley; maintains trails; cleans comfort stations, water fountains and other facilities throughout the property; operates light motorized or power equipment and tools as required; may make minor maintenance repairs such as changing light bulbs and worn sockets and replacing faucets, washers and toilet floats; may assist in making minor repairs and adjustments to pipes such as extending sprinkler systems, raising and replacing sprinkler heads, removing and replacing valves and faucets; occasionally assists in the various trades as required.

Performs other related duties as required.

Qualifications:

Training and Experience: None

License Requirement: Possession of an appropriate valid Hawaii State driver's license, as required.

Ability to: read, understand and apply written instructions and guidelines regarding work schedules and assignments, safety practices and departmental directives; care for plants, trees and landscaped areas; handle weights; operate hand and power equipment and tools used in grounds maintenance; learn pertinent rules and regulations and enforce them with tact and courtesy.

Physical Requirement:

Persons seeking this position must meet the health and physical condition standards deemed necessary and proper for performance of the duties.

Physical Effort Grouping: Heavy

CURATORSHIP AGREEMENT

HA`IKU VALLEY

This curatorship agreement, executed on the respective dates indicated below, is effective as of _____, 20___, between the STATE OF HAWAI`I (hereinafter "State"), through its Office of Hawaiian Affairs (OHA) by its Chairperson, whose address is 560 North Nimitz Highway, Honolulu, Hawai`i 96817, and the Ko`olau Foundation (also referred to herein as "Curator"), by Aaron Mahi, President, whose address is P. O. Box 4749, Kane`ohe, Hawai`i 96744.

INTRODUCTION

The Department of Hawaiian Home Lands (DHHL) obtained approximately 145 acres of land in Ha`iku Valley from the United States government in 1998, and has subsequently sought productive use of the property through a land exchange or some other purpose. Although some of the acreage has already been leased for use as a charter school, most of the property remains uncommitted for future use. The Ko`olau Foundation, comprised of residents of the Kane`ohe and He`eia communities, has long advocated for conversion of the property into a cultural preserve due to the historic and cultural resources located in the valley.

In 2010, the Office of Hawaiian Affairs entered into discussions with DHHL to pursue advancing the cultural preservation initiatives sought by the Ko`olau Foundation and its Windward community members. The lands have since been transferred by DHHL to the control of OHA under a 50-year license, and OHA has subsequently renewed discussions with the Ko`olau Foundation and the community to ensure their involvement in management of the valley.

This agreement establishes the Ko`olau Foundation as curators of Ha`iku Valley (TMK: _____, Attachment 1) for the purposes of working with the Office of Hawaiian Affairs (OHA) in the maintenance, management, interpretation, documentation, and monitoring of the historic properties within the area.

The State, through DHHL, is owner of Ha`iku Valley and its resources and has absolute and ultimate authority over all activities including management, care, planning, maintenance, and restoration within the property. DHHL's licensee, the Office of Hawaiian Affairs, hereinafter referred to as OHA, manages Ha`iku Valley for the Department of Hawaiian Home Lands. The staff of OHA shall oversee the operations and activities of the Curator for compliance with this agreement.

The Curator will also work with OHA in fulfilling the planning and compliance requirements needed to implement these management and interpretive initiatives. The Curator will rely on the technical expertise and historical resources of the State Historic Preservation Division as it assumes the responsibilities of curator. The Curator will perform all duties and responsibilities without pay from the State of Hawai`i.

BACKGROUND

Ha`iku Valley contains a number of historic and cultural resources, most notably the recently decommissioned Ha`iku OMEGA station, built in 1942, formerly operated by the U.S. Coast Guard as a global communications facility. Among pre-contact sites on the property are two ancient Hawaiian religious sites – Kane a me Kanaloa heiau and Kahekili (also known as Kanehekili) heiau. Also reportedly scattered throughout the area are pre-contact Hawaiian burial sites, some of which were encountered during construction of the station during the 1940s.

THE AIM OF THE STATE OF HAWAI`I'S CURATOR AGREEMENTS

The State of Hawai`i's curator agreements were first initiated by DLNR's State Parks and its Historic Sites Section in 1986 and 1987. The aim is to:

1. Better maintain significant historic sites and natural resources and protect them from vandalism, natural factors, and unintentional human actions that will damage sites.
2. Provide the State's citizens greater access to view and understand the importance of these sites and the State's past history.

CURATOR RESPONSIBILITIES

1. The Curator will coordinate all actions and activities undertaken in the execution of this Curator Agreement with OHA.
2. The Curator will designate a project manager who is subject to approval by OHA. All volunteer participants must submit a completed volunteer waiver form (Attachment 2).
3. The Curator wills ubmit an annual report of its activities and volunteer hours under this agreement to OHA.
4. The Curator will help maintain the grounds within Ha`iku Valley by clearing vegetation and removing litter if appropriate. Unless otherwise approved, this shall be done without ground disturbance to prevent damage to the structgural integrity of the historic sites and to subsurface archaeological deposits. Weed-eaters, machetes, lawnmowers, chainsaws, and other hand tools may be used. With OHA's approval, an herbicide with dissipation properties such as Round-up, may be used to control weeds and vegetation growth around the rocks of the historic sites where appropriate.
5. The Curator may initiate projects to clear alien vegetation from heiau identified by kupa`aina families with ties to the valley.
6. The Curator may undertake landscaping, watering and planting activities for the purpose of providing ground stabilization and minimizing erosion of the area, contingent upon approval of specific plans by OIIA.
7. All cut and gathered vegetation should be taken to a designated area. Curator may arrange for recycling of green-waste either on-site or off the property. There is to be no unauthorized burning within the area covered by the Curator agreement except for cultural activities such as food preparation; the Honolulu Fire Department shall be notified in advance of such activities.
8. The Curator may sponsor volunteer projects and cultural or educational tours in addition to their regular maintenance responsibilities but OHA must approve and shall be notified 5 working days in advance of volunteer projects and educational tours. For volunteer projects and cultural or educational programs that are regularly scheduled and of a repetitive nature, notification to OHA can be made on a quarterly, biennial or annual basis.

9. The Curator is required to assist in coordinating volunteer efforts that may be forthcoming from other organizations or individuals. Such other groups or individuals may participate in curator activities without being required to become a member of the Curator organization.
10. The Curator will seek ongoing involvement of the local community, potentially affected private landowners, and relevant organizations.
11. The Curator may prepare and install interpretive devices or displays, contingent upon approval of specific interpretive plans by OHA and the DLNR's Historic Preservation Division for the review and approval in accordance with Sec. 13-277, HAR.
12. Upon approval by OHA and DLNR, the Curator may retain the services of a professional archaeologist for the purposes of conducting archaeological work needed to fulfill the objectives of this curator agreement or to contribute to meeting the requirements of the historic preservation project review process (Sec. 6E-7 and 8, HRS; Sec. 13-275, HAR). The archaeologist shall meet the professional qualifications establisdhed by Sec. 13-281, HAR, and hold a valid permit to conduct archaeological activities in Hawai`i in accordance with Sec. 13-282, HAR.
13. The Curator may propose amendments to this agreement to undertake other tasks. Depending on the scope of the proposed amendments, approval by OHA or its Chairperson may be necessary. Upon approval, the amendments will become a part of this agreement.
14. Use of the property by the Curator shall be in accordance with all of the Rules and Regulations of the Office of Hawaiian Affairs, the Division of State Parks (Hawai`I Administrative Rules Title 13, Chapter 146), the Conservation District (Hawai`I Administrative Rules Title 13, Chapater 5) and all other applicable rules and regulations of the Department of Land and Natural Resources as well as all other applicable rules, regulations and permit requirements of the City & County of Honolulu, Sate of Hawai`i and U.S. government, including requirements under HRS Chapter 343 concerning environmental and cultural review prior to any actions that would trigger this chapter.
15. All proposed maintenance, management and interpretive plans developed under this curator agreement shall be submitted by OHA to the Historic Preservation Division for review in accordance with Sec. 6E-7 and 8, HRS, and all applicable administrative rules.

16. The Curator will periodically monitor the condition and integrity of historic properties and their respective settings on the property. Where possible, attempts shall be made to prevent vandalism and damage. Should any damage be discovered, the Curator will notify OHA as soon as possible.
17. Restoration work, as needed, may be undertaken by the Curator, contingent upon approval of specific restoration plans by OHA and their submittal by OHA to the Historic Preservation Division for their review and approval in accordance with Sec. 13-277, HAR.

SPECIAL CONDITIONS

The Curator shall not:

1. Conduct or permit commercial activity, including the sale of any items or advertising of commercial products, to be conducted in conjunction with the curation without prior approval from OHA;
2. Install interpretive devices without the prior approval of OHA and the State Historic Preservation Division;
3. Permit participants to possess, display, use/consume alcoholic beverages or illegal drugs on the property;
4. Permit any temporary or permanent residence to occur on the property except for security and caretaking purposes;
5. Cause any significant disruption to normal property usage;
6. Undertake site improvements unless these tasks are covered in the curator agreement or in later amendments to each agreement.

These constraints are extremely important to ensure that the sites are properly protected and are properly interpreted, thereby benefiting native Hawaiians and all the citizens of the State of Hawai`i.

RESPONSIBILITIES OF THE OFFICE OF HAWAIIAN AFFAIRS

1. OHA, in its sole discretion, will continue to be responsible for the area covered by this curator agreement and may issue permits or allow Curator to issue permits, including commercial permits; may conduct archaeological and other research and other investigative activities, install interpretive devices and regulatory signs, and implement management plans. OHA will consult with the curator on these activities.
2. OHA agrees to provide the Curator with information relating to Ha`iku Valley, including but not limited to archaeological and historical information, surveys conducted of archaeological sites or features, draft environmental impact statements, and plans regarding existing or proposed future uses of lands within the valley.
3. The assistance of OHA and State Parks may be requested by the Curator for large clearing and hauling and with herbiciding. Such requests should be coordinated between the Curator, OHA, O`ahu State Parks District Superintendent, and the State Archaeologist.
4. In accordance with Sec. 6E-7 and 8, HRS, and Sec. 13-275, HAR, OHA shall be responsible for obtaining concurrence from the State Historic Preservation Division to proceed with any proposals under this agreement that could have an effect on historic properties in the valley and for submitting for review and approval any reports or plans prepared in compliance with Sec. 13-275 through Sec. 13-280, HAR.
5. The Curator will be consulted on proposed activities in the valley and may assist with cultural protocol as may be needed. The Curator may be given the opportunity to assist in work done in the valley by OHA or approved by OHA.

RESTRICTIONS ON THE CURATOR'S ROLE

1. The Curator may not undertake tasks which are not specified in this agreement. This restriction is to protect the property and its resources. The Curator may propose amendments to this agreement to undertake other tasks on the property. These proposed amendments must be approved by the Board of the Office of Hawaiian Affairs or its designee.

2. It must be emphasized that failure to obtain prior approval of additional tasks may lead to revoking of the curator agreement and may result in civil or criminal penalties upon the Curator under Sections 6E-11, 6E-11.5, or 6E-11.6, HRS, if historic properties are damaged or altered without prior approval of the department.
3. It is the role of the Curator to help protect the historic properties covered by this agreement and to help manage public access for native Hawaiians and for all citizens of the state of Hawai`i.

CHECKS TO INSURE PROPER SAFETY

OHA will make, at a minimum, two (2) agreed-upon field checks per year to see that the curator agreement is proceeding as envisioned. If it is determined that tasks specified in the curator agreement are not being appropriately performed, OHA will notify the Curator in writing of the problem and will provide the Curator with suggestions to correct the problem. The Curator will be allowed a reasonable time to correct the problem. If the Curator fails to correct the problem, this agreement will be subject to revocation.

CHECKS TO INSURE PROPER SAFETY

1. The Curator agrees to perform their services in a safe and reasonable manner. It is the Curator's responsibility to become acquainted with the procedures and tools necessary to perform these tasks and to monitor the actions of their group of volunteers.
2. Prior to commencement and periodically throughout the agreement, the Curator will conduct safety briefings with their staff and volunteers to ensure that they are aware of any potential safety hazards. The Curator will have volunteers sign the OHA/State Parks volunteer waiver forms (Attachment 3) and instruct all volunteers in the proper method of performing their tasks.

To assist OHA, the Division of State Parks is available to provide safety presentations and written documentation on safety and proper methods of performing the work. An on-site

evaluation, to discuss procedures, can be scheduled prior to the commencement of this agreement.

THE TERM OF THIS AGREEMENT

The term of this agreement shall be for five (5) years from the date of execution. Continuation of this agreement after five (5) years is subject to written agreement by both the Curator and OHA. If either party wishes to terminate the agreement, 30 days written notice shall be given to the other party.

LIABILITY

The members, staff, volunteers and invitees of the Curator who perform the Curator's responsibilities under this agreement will be deemed to be volunteers for purposes of Chapter 90-4(4), HRS. As such, these persons, when acting as volunteers, are entitled to be regarded as "employees of the State" solely for the purposes of Chapter 662, HRS.

In VIEW OF THE ABOVE, the parties execute this Curator Agreement by their signatures, on the dates below, to be effective as of the date written below.

OFFICE OF HAWAIIAN AFFAIRS

_____

COLETTE MACHADO
Chairperson

_____

Date

CURATOR:
KO`OLAU FOUNDATION

_____

Aaron Mahi
President

_____

Date

CONCURRENCE:
DEPARTMENT OF LAND & NATURAL RESOURCES

_____

William Aila
Director

_____

Date

JOIN THE KO'OLAU FOUNDATION AND KO'OLAUPOKO HAWAIIAN CIVIC CLUB

CULTURAL SERVICE WORK DAYS

HAIKU VALLEY

SUNDAYS:
MAY 24 • JUNE 28 • JULY 26

9:00 AM – 1:00 PM

FOR INFORMATION

OR TO VOLUNTEER

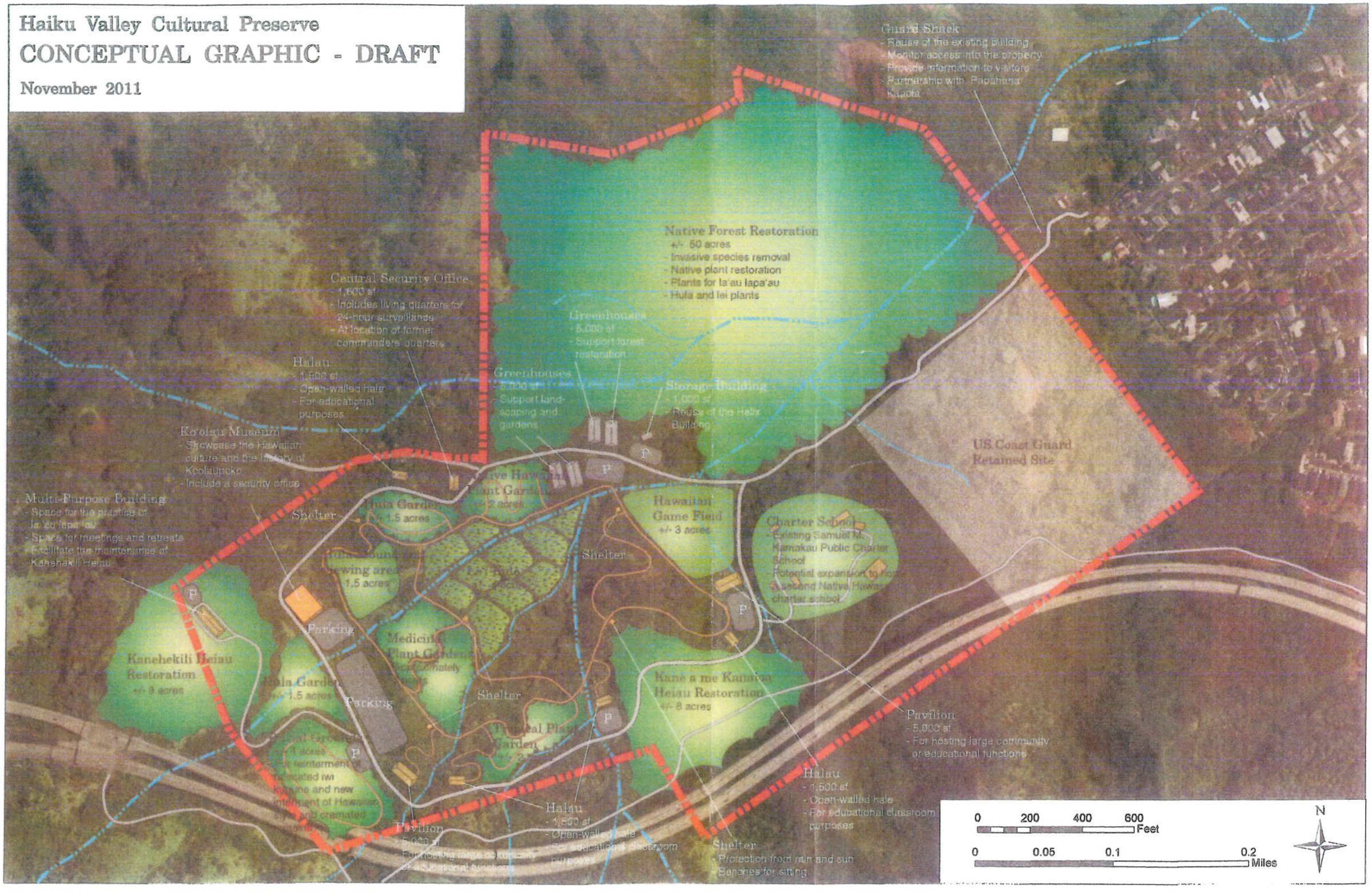
EMAIL:

MALAMAPONO744@AOL.COM

Haiku Valley Cultural Preserve

CONCEPTUAL GRAPHIC - DRAFT

November 2011



From: Jay Silberman <paucdawg1@yahoo.com>
Sent: Monday, August 24, 2015 1:08 AM
To: BWS Board
Subject: Board agenda for August 27
Attachments: omsta.ea.doc; RESEARCH.DOC; Scanned_.pdf

Dear Board Members:

Thank you for considering management options for the Ha`iku Stairs.

I worked as an Environmental Protection Specialist for the U.S. Coast Guard for 36 years, 30 of which were in Hawaii . My educational background includes a BA in Political Science and an MS in Environmental Health Sciences. I prepared the environmental assessment (EA) for the closure of the Omega Station in 1997, which I have enclosed in this e-mail, but I am writing to you as a private citizen.

The EA addressed several issues that you may find of interest.

1. Five structures within the former Omega Station, including the Ha`iku Stairs, are eligible for the National Register of Historic Places. The station as a whole is also eligible as a historic district (a complex of interrelated units and structures), based on Register Criterion A, historical association with World War II and radio technology, and Criterion C, distinctive architecture and engineering of a Naval Radio Station unique to the Cold War period. Please see the second and third attachments. If the Stairs were demolished or allowed to disintegrate into an unrecognizable/irreparable form, this would result in a significant adverse effect on the historic integrity of the overall site.

2. Experts in botany and natural history have described the Stairs as unique in the Hawai`ian Islands, for several reasons. Their most outstanding feature is their steep ascent, more than 2,000 feet above the valley floor. As a result, the hiker passes through several different climate and vegetation zones.

3. It is estimated that more than 20,000 people per year hiked the Stairs when the Coast Guard formally opened them to the public between 1982 and 1987. The only hiker management performed by the Coast Guard was to require people to sign in and out. To my knowledge, there were no serious injuries during this time period.

4. A conservative figure of 40,000 cars per year [110 cars/day] was used to determine the environmental effects of heavy Stairs usage following a potential public re-opening. The EA determined that this would cause an insignificant adverse impact on traffic and air quality conditions in the project region, assuming that the station was accessed using Ha`iku Road, and that most cars traveled during non-peak traffic hours.

Sincerely,

Jay Silberman
1326 7th Avenue Apt

A

Honolulu HI 96816
(808) 735-0596 [h]

DEPARTMENT OF TRANSPORTATION

UNITED STATES COAST GUARD

E N V I R O N M E N T A L A S S E S S M E N T

BASE CLOSURE

OMEGA STATION HAWAI`I

PREPARED BY:

U.S. COAST GUARD
CIVIL ENGINEERING UNIT HONOLULU
300 ALA MOANA BOULEVARD
HONOLULU, HAWAI`I 96850

JUNE 1997

U.S. COAST GUARD

FINDING OF NO SIGNIFICANT IMPACT

FOR

BASE CLOSURE

OMEGA STATION HAWAI`I

This action has been thoroughly reviewed by the Coast Guard and it has been determined, by the undersigned, that this project will have no significant effect on the human environment.

This Finding of No Significant Impact is based on the attached U.S. Coast Guard prepared Environmental Assessment, which has been determined to adequately and accurately discuss the environmental issues and impacts of the proposed action, and provides sufficient evidence and analysis for determining that an environmental impact statement is not required.

Date	Preparer	Title/Position
Date	Environmental Reviewer	Title/Position
Date	Responsible Official	Title/Position

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CHAPTER I

PURPOSE AND NEED FOR THE PROPOSED ACTION

1. Purpose of Action

The proposed action analyzed in this environmental assessment (EA) is the closure of U.S. Coast Guard (USCG) Omega Station Hawai`i. Closure involves termination of station operations, followed by several equipment removal and cleanup projects, and then turning the property over to the General Services Administration (GSA) for disposal. As discussed in a March 8, 1997 EA preparation notice published in the State of Hawaii, Office of Environmental Quality Control (OEQC) Bulletin, these projects, and their alternatives, will be analyzed in this EA.

The City and County of Honolulu (CCH) has proposed immediate interim reuse of the station, prior to final disposal by GSA. CCH's current plan for reuse will be analyzed in this EA. It should be emphasized that CCH's plans are still being formulated;

if these plans were to change substantially, USCG would reevaluate the conclusions in this EA. Moreover, CCH will prepare their own environmental assessment of their proposed use, prior to implementing their plans.

Before GSA transfers the property to a new occupant, they will undertake a similar analysis of the potential environmental impacts from the proposed new use.

2. Need for Action

In the October 11, 1996 Federal Register, the Coast Guard published a notice of its intent to terminate involvement in the worldwide Omega Radionavigation System on September 30, 1997. This notice included closure of the two stations located in the U.S. (Lamoure, ND and Ha`iku, HI), and termination of the existing bilateral agreements with the six partner nations (Argentina, Australia, France, Japan, Liberia, and Norway). Figure 1 shows the locations of these stations.

The Omega navigation system, when first established in 1968, allowed ships, aircraft, and submarines worldwide to determine their position, with an accuracy of one to two nautical miles. The system at present primarily serves aviation and weather users. With the satellite-based Global Positioning System (GPS) being declared fully operational, the use of Omega has dwindled to the point where continued operation is not economically justified. The Federal Aviation Administration (FAA) recently completed its review of Omega navigation requirements for the U.S. aviation industry, and notified the U.S. Coast Guard that most users will complete their conversion to GPS technology by September 1997.

CHAPTER II

Location and description of facilities

1. Location.

The USCG Omega Station Hawai`i is located in the back of Ha`iku Valley at 46-500 Ha`iku Road, near the town of Kane`ohe, Ko`olaupoko District, O`ahu, Hawai`i. The station occupies 689 acres of military reservation land in the upper valley on the Windward (eastern) side of O`ahu (Figure 2).

The Windward side is separated from Central Honolulu and the Leeward side of O`ahu by the Ko`olau Mountains. Ha`iku Valley is an amphitheater-headed valley in the southern Ko`olau range. The valley is ringed on the north, west, and south by vertical cliffs, or pali.

2. Description of facilities.

The Omega Station serves as part of a worldwide radionavigation system that provides global coverage for maritime and aviation users. The Station employs 17 Coast Guard personnel. No personnel are housed at the Station.

The station was originally established in the 1940's by the U.S. Navy as the Ha`iku Naval Radio Station, and was converted into an Omega Station during the early 1970's. In 1973, the facility was transferred to the USCG. During the Navy's tenancy, 51 buildings were present on the site. In the early 1970's, in preparation for converting the facility to a fully operational Omega station, the Navy demolished most of the buildings on the site.

Remaining facilities include the Transmitter/Helix Building; the valley-span antenna; a counterweight tower; a Maintenance/Storage Building; a potable water system consisting of pumps, a water storage tank, and distribution piping; and a few unused structures that were transferred to the Coast Guard with the property. Figure 3 depicts a plan (aerial) view of the station, with the antenna spans superimposed above the buildings and roads.

a. Transmitter/Helix Building (Building #1). A two story concrete structure built by the US Navy during World War II. The building was used as a critical communications center and therefore was designed to be bomb-proof, with reinforced concrete walls up to 10 feet thick.

b. The antenna. Six cables spanning steep mountain ridges on each side of the valley. Suspended approximately 2,000 feet above the valley floor, each span consists of 7,000 feet of heavy aluminum-clad steel cable. The spans are interconnected to each other and held taut by the counterweight tower. The antenna also
has a ground plane consisting of copper wires buried every 1 degree, with a 1,100 foot radius around the transmitter Building.

The antenna spans are held in place on the ridge lines by anchors. Each anchor consists of a leveled area with an I-shaped concrete pad and steel anchor tower, a coarse gravel-lined area around the pad, and a grassed area.

c. Maintenance/Storage Building (Building #25). A 3500 square foot single story wooden structure.

d. Electrical Building (Building #9). An 80 square foot concrete structure housing the switchgear for the incoming commercial power.

e. Utilities. The water system consists of a tank, pumps, and distribution piping. Electrical distribution lines are underground. The sewage system includes a 6" sewer line, running from the main building to a 1000-gallon septic tank. The septic tank effluent drains into a leaching field, which consists of three 100-foot parallel lines of 4" perforated pipe. The septic tank and leaching field are located across the roadway from Building 6.

f. Non-operational buildings that were part of the old World War II Navy Base:

(1) Building #6, 2500 square foot concrete and hollow tile structure on the valley floor (former Helix Building). The roof of this building has long ago rotted away.

(2) Building #18 (Microwave Building), a 294 square foot concrete structure on the Pali ridge. At various times, this structure housed Navy remote control equipment for the old VLF Naval Communications Station, Air Force microwave repeater dishes, and a Marine Corps fire alarm repeater antenna system.

(3) Building #19 (Cable House), a 405 square foot concrete structure on the Pali ridge. In order to haul materials up 2,800 feet to construct the concrete anchors, a cable car system was installed by the Navy. The Cable House contains a winch for the cable car and held the large gears needed to lift the heavy cargo.

g. Antenna Access Stairs ("Ha`iku Stairs" or "Stairway to Heaven"). Steel stair structures are present on top of the Pali and Kahuku ridges along the antenna anchors. A separate access stair structure was built into the mountain side and runs from the valley floor up to the top of the Pali ridge. This structure is called the "Stairway to Heaven". The Stairs can be seen in the right hand side of Figure 3; they are also shown in Figure 4, which is a three-dimensional representation of Ha`iku Valley and the surrounding area.

The Stairway was built to inspect/service the antenna spans. It consists of 60 sections, with a total of 3922 steps. When they were formally opened to the public in 1982, the Stairs became very popular; estimates are that more than 20,000 people made the hike each year. The Stairs were permanently closed to the public in 1987, due to their unsafe condition.

3. Surrounding land use.

The Omega Station is the major land use in the Valley. Other land uses include a U.S. Department of Agriculture Hawai`i Animal Import Center, the Interstate (H-3) Viaduct and twin bore tunnels, City and County Board of Water Supply easements and wells, and Hawai`ian Electric Company easements.

a. Within station boundaries.

(1) The Department of Agriculture, Animal and Plant Health Service (APHIS), operates the Hawai`i Animal Import Center (HAIC). APHIS acquired the lease under an Interdepartmental Use Agreement with the Navy

to use the land in December 1969. APHIS' agreement was transferred from the Navy to the Coast Guard in 1973, when the Coast Guard acquired the property. HAIC can be seen in the right hand side of Figure 3; HAIC's layout is shown in Figure 5.

In the May 22, 1997 Federal Register, USDA published a notice that it would be closing HAIC on June 30, 1997. The environmental impacts of this closure will be addressed in Chapter IV.

APHIS built its first quarantine holding building on the site in 1973, and the remaining four quarantine buildings in 1974. The Agency added an incinerator shelter in 1982, an equipment/repair office in 1984, and an asphalt turnaround area in 1989. The mission of HAIC is to quarantine birds, poultry, and other animals imported from foreign countries, as required by Federal law.

(2) The H-3 Interstate Viaduct was constructed through Coast Guard land in Ha`iku Valley in 1988-93. The freeway traverses northeasterly through Halawa Valley (on the leeward side of the Ko`olau Mountains), to 5,100 foot long twin-bore tunnels passing through the Ko`olau Range. Emerging in Ha`iku Valley, at the base of the back of the valley, it passes in a southeasterly direction via an elevated section of roadway along the southern wall of Ha`iku Valley, ultimately terminating at Mokapu Point at the Kane`ohe Marine Corps Air Station. (Figure 3). The freeway is expected to open on December 1, 1997.

(3) The City and County of Honolulu Board of Water Supply (BWS) operates a tunnel and well system located on the Omega Station that provides potable water, primarily to the Windward area. BWS personnel service the facilities, which include a chlorination facility and pump station.

b. Outside station boundaries.

(1) The Omega Station is bordered by a 300-foot wide Hawai`ian Electric Company (HECO) easement to the northeast, and by the walls of the valley in all other directions. Beyond the HECO easement, on the north-northeast perimeter of the Station is a 58 acre parcel owned by Bishop Estate. To the south-southeast of the Station is a 38+ acre state housing subdivision called "Hokulele". Other residences are located to the east of the Omega Station, beyond the HECO easement. Kane`ohe State Hospital/Windward Community College and Kane`ohe District Park are located to the southeast of the Station.

(2) Currently, Ha`iku Road serves as the primary route to and from the Omega Station. A temporary road, built for construction of the H-3 viaduct also connects to the Station's loop road. Ha`iku and Kahuhipa Roads channel traffic from the Ha`iku Valley residential areas into Kahekili and Kamehameha Highways and Kane`ohe town. Residences and several small commercial operations, including a plant nursery, equipment rental company and restaurant, are located along Ha`iku Road, within a mile below the Omega Station main gate.

CHAPTER III

PROPOSED ACTION AND ALTERNATIVES

1. Introduction.

This chapter describes the proposed action and its alternatives. The potential environmental impacts from the proposed action will be described in Chapter IV, and those of its alternatives in Chapter V.

2. Proposed Action.

Federal regulations (41 CFR 101-47.201-2) require agencies to report property which is excess to their needs to the General Services Administration (GSA) for disposal. These regulations (41 CFR 101-47.501-3) also mandate that "No property which is dangerous to public health or safety shall be abandoned...without first rendering such property innocuous or providing adequate safeguards therefor."

Accordingly, the following projects are proposed to be taken:

a. ANTENNA: All six spans would be lowered to the valley floor. A winch line would be helicoptered up, attached to an anchor (either Pali or Kahuku side). This line would be fed through a large winch, to allow a controlled lowering of the span. The span would then be released from its anchor, and slowly lowered by letting out the winch line. A second winch would connect to the span and guide the spans down, to allow them to be directed away from both H-3, and significant archeological and botanical resources.

Once the spans were on the valley floor, they would be cut into sections and removed off-site to be recycled. Span segments that could not be cut and hand-carried out would be hooked onto by a helicopter, and flown out. The 27 oil-filled insulators (each containing 3.5 gallons of mineral oil) would be recycled or disposed of.

The steel anchor A-frames would be cut flush to the ground surface and removed. The concrete foundations for the antenna spans would left buried at ground level. The concrete swales surrounding the antenna ridge anchors would be left in place.

b. HA`IKU STAIRS RESTORATION: The Stairs are approximately 9000 feet long, and cross three different parcels of land: BWS watershed (for which USCG has an easement); Federally-controlled ceded land; and Federally-controlled fee simple land.

The terms of the easement require USCG to remove all improvements if so requested by BWS. Representatives of USCG met last year with BWS to discuss termination of this easement, including the disposition of the Stairs. BWS requested that the Stairs be removed, but agreed to allow them to remain, if USCG repaired them, and found a responsible party to assume responsibility and maintenance for them.

USCG is currently negotiating with the City and County of Honolulu (CCH) to assume management of the Stairs, if USCG were to repair them to a mutually

agreeable level of rehabilitation. The repair level currently proposed is as follows:

(1) Replacing worn out anchor pins (~300);

(2) Replacing rusted out railings (~100): unbolting old ones, putting on new ones;

(3) Ten sections of stairs are out of alignment. Fixing this requires removal of connecting pin (connects one section to another), and the anchor pins. Misaligned sections would have to be "muscled" back into place.

(4) Replacing three missing sections of stairs.

(5) Replacing damaged handrail connection sections (~30).

(6) Addition of a center rail along ~15 sections of very steep stairs.

Estimate of work effort: five-person crew on the ridgeline (lower) stairs working 30 days, and a seven-person crew on the summit (upper) stairs working 30 days.

c. BUILDINGS: The Transmitter/Helix building (#1) would have its electronic equipment, generator, and all hazardous substances removed, and then all ground level entrances would be sealed. Stairs leading to upper decks would be removed. The wooden Maintenance/Storage building (#25) would be demolished and removed. The counterweight tower would be cut flush to the ground surface and removed. The concrete buildings on the valley floor would be left as-is. The asbestos roof and electrical switch equipment on the ridge line Cable House and Microwave Building, respectively, would be removed.

No BWS facilities would be affected by this action.

d. UTILITIES: All underground electrical & communication cables would be left in place. Power to the station would be disconnected at the property line. The water system, sewage treatment system, paved roads, parking surfaces, road curbs, street lamps and poles would be left in place. The copper ground plane would be left buried underground.

e. QUARANTINE STATION: The USDA would perform the following closure actions:

(1) All improvements would remain, with the exception of the incinerator, propane tank, dumpster, two conex boxes, and all personal property.

(2) Comply with City and County of Honolulu regulations for the closure of cavitettes, including cleaning them out.

(3) Remove and properly dispose of all hazardous substances (as defined under Section 101 of CERCLA) stored at and/or contained in USDA-built improvements.

(4) Every building that housed an animal would be decontaminated in accordance with USDA's "Protocol for Post-Rejection Cleaning and Disinfection of Buildings Contaminated by Animals Harboring Foreign Disease Agents".

f. ISSUE INTERIM USE LICENSE TO CITY AND COUNTY OF HONOLULU.

The City and County of Honolulu (CCH) has proposed immediate interim reuse of the station, prior to final disposal by GSA. (Harris, 1997; Appendix A).

CCH's intention, as formulated so far, is to create a nature park/preserve. The basic concept would be to provide watershed protection, preserve the valley in its natural state, and provide recreational opportunities associated with the Ha`iku Stairs and the upper valley.

Rather than managing the facilities themselves, CCH is considering having a nonprofit group manage the Stairs and buildings for environmental education programs. At least one building at the Quarantine Station would be used for staging visits to the Stairs. Some of the other buildings at the Quarantine Station, and possibly the Transmitter Building, would be used by the Parks Department for operations, or by other City departments.

g. NAVY DEBRIS AREAS: In preparation for a housing project, USCG studies of the northeast corner of the property ("Site A") uncovered fifteen debris areas on this heavily vegetated, bamboo-dominated site. The site is bordered to the northeast by a fence running along a Hawai`ian Electric Company easement, to the northwest by Ha`iku Road, and to the south by an east-west trending escarpment (Figure 6). (Woodward Clyde Consultants, 1996).

Surface debris at the site includes empty drums, telephone poles, cable, concrete foundations, metal pipe, barbed wire, metal containers, and tires. During the Navy occupation, Site A was known as the "Bone Yard" because it was used mostly for storage of parts for the old antenna, particularly telephone poles.

The sites have been extensively sampled for herbicides, insecticides, semi-volatile organics, polychlorinated biphenyls (PCBs), RCRA metals, organochlorine pesticides, and total petroleum hydrocarbons. Of the 15 sites, only two (Debris Areas 2 and 6) were found to have hazardous material releases above action levels.

Debris Area 2 contains large quantities of debris, indicating repeated disposal activities at this location. The quantity, composition, and lateral and vertical extent of material encountered in Debris Area 6 indicates that this area was used as a general dump site in the past. Metallic debris was encountered at depths of as great as eight feet below ground surface in borings drilled in Debris Area 6, suggesting a significant vertical extent of buried debris at this site.

As a result of these findings, excavation work was initiated in February 1996 to determine if any of the previously discovered buried debris consisted of hazardous material.

Two areas of potential environmental concern were encountered during excavation of Debris Area 6. On the steep slope located to the north of the main debris area, numerous small electrical components (batteries, capacitors, etc.) were encountered in one area ("Electrical Component Area") and a strong creosote odor was encountered in another area ("Creosote Area"). The work conducted in Debris Area 2 consisted largely of removing buried metallic debris located in a small area close to the access road and in removing numerous other metallic objects which were observed at or near the surface downhill of this main site.

Follow-on sampling conducted during this investigation evaluated the extent of contaminants within Debris Areas 2 and 6. The analytical data was used to calculate 95% Upper Confidence Level (UCL) values for the contaminants, which reflect the risk posed to human health by the contaminant levels present at each site, and the level of confidence that there are no residual "hot spots" requiring remediation in these two areas.

The contaminant levels measured in both debris areas as a whole, as well as the levels measured in the two subareas located within Debris Area 6, have been evaluated. These levels were compared to three regulatory cleanup goals to evaluate whether or not the site as a whole, and/or the two subareas, pose a threat to human health or the environment. The three regulatory cleanup goals evaluated were the USEPA Region IX Preliminary Remediation Goals (PRGs) for both residential and industrial settings and the default State of Hawai`i Department of Health (HI DOH) cleanup goals for contaminated soil.

Although there were individual soil samples collected from both Debris Area 2 and Debris Area 6 which exceeded the USEPA Region IX Residential PRG for lead, the site as a whole has a conservative aggregate mean concentration of lead below the Hawai`i DOH recommended cleanup goal and USEPA Region IX Residential PRG, and thus does not pose an undue risk to human health.

Additional investigations are being carried out for the Electrical Component and Creosote areas located in Debris Area 6. These areas require additional work due to the elevated levels of PCBs and benzo(a)pyrene measured in soils collected from each respective area.

(1) ELECTRICAL COMPONENT AREA

Both the normal and lognormal 95 percent UCLs exceed the USEPA Region IX Residential and Industrial PRG, as well as the Hawai`i DOH recommended cleanup goal (1.0 mg/kg) for PCBs. In addition, six of the eleven samples analyzed for lead in this area exceeded the USEPA Residential PRG and the Hawai`i DOH cleanup goal of 400 mg/kg. This suggests that many of the electrical devices which contained PCBs contained significant amounts of lead.

(2) CREOSOTE AREA

All of the soil samples collected from the Creosote Area contained benzo(a)pyrene concentrations which exceeded the USEPA Residential PRG. As a result, additional soil sampling has been conducted in this area, in order to better delineate the vertical and horizontal extent of contamination.

Additional sampling has been also been conducted for lead and PCBs in the Electrical Component Area. The additional sampling points for these two areas were located on modified sampling grids which extend beyond the previous grids, in order to encompass all of the surrounding areas which may have been potentially impacted. The sample results should be available at the end of June 1997.

USCG is also conducting a HI DOH Tier 3 risk assessment, which will evaluate the health risk associated with potential exposure to these sites. The risk assessment will allow a more accurate estimate of the risk posed, by incorporating the following site data into the risk calculations: area extent of contamination, thickness of impacted soil, soil density, particle density, soil moisture content, fraction of organic carbon in soil, fraction of surface

covered/vegetated, and windspeed. The risk assessment will be completed in July 1997.

The amount of soil removed from these sites during remedial activities would be based on the amount of soil found to exceed risk levels. Preliminary data suggest that the amount of soil needed to be removed is approximately 300 cubic yards. Sampling would be done both during and after excavation work is complete, to ensure that all "hot spots" have been removed.

3. Alternatives to the Proposed Action.

a. NO ACTION ALTERNATIVE. Upon initial review, it would appear that there are two potential "No Action" alternatives: (1) continue to operate the station as is; and (2) shut down operations and vacate the property, but take no physical actions (e.g., span lowering, site cleanups). In fact, "alternative" (1) is not viable, since the U. S. Department of Transportation has already made the decision to terminate involvement in the worldwide Omega System, and to close the two stations located in the U.S.

b. RETURN PROPERTY TO PRE-COAST GUARD CONDITIONS. Remove everything associated with the Coast Guard Station except roads and underground utilities. Remove all Coast Guard controlled buildings within property lines, whether used or not. Remove concrete foundations of buildings and counterweight tower to two feet below grade. Remove concrete antenna anchors from the mountain ridges.

c. ALTERNATIVES TO INDIVIDUAL CLOSURE PROJECTS. There are alternatives to, and alternative methods of, carrying out the proposed closure projects.

(1) ANTENNA: The six spans could be dropped via uncontrolled lowering methods. This can be accomplished with either explosive charges attached to the spans, or by simply cutting them below their anchors. Either method can be used to sever the spans individually or simultaneously.

With uncontrolled lowering, at least a portion of the spans would land along the mountain walls. Those portions lying in inaccessible areas could be (a) abandoned; (b) hooked onto by a helicopter, and flown out; or (c) dragged down to the valley floor for cutting.

(2) HA`IKU STAIRS: If USCG negotiations with City and County of Honolulu (CCH) to assume management of the Stairs are unsuccessful, the Stairs would be removed. Alternately, they could be abandoned in place.

Removal would involve using tools such as a saw or crowbar to release the 3' long anchor pins. Handrails and treads would probably be removed from the stairs frame, to lessen the weight. Individual components would then be hand-carried to several staging areas along the ridge line, where they would be hoisted out by helicopter.

Estimate of work effort to remove them: eleven person crew on the lower stairs working 30 days, and a seven person crew on the ridgeline stairs working 30 days.

Because the Stairs are located on very steep ridge lines, 60 days of helicopter time would be required to sling the stairway sections out of the valley.

(3) BUILDINGS; UTILITIES; QUARANTINE STATION: The alternatives of abandoning or demolishing all buildings and utilities are covered in paragraphs 3.a and 3.b above. There are no other reasonable alternatives.

(4) ISSUE INTERIM USE LICENSE TO CITY AND COUNTY OF HONOLULU. One alternative is to simply to deny their request for a license. Another alternative is to grant their request, but to restrict or deny some of the uses they have requested.

(5) NAVY DEBRIS AREAS: Alternatives include "no action" (i.e., leave the contaminated soil as-is), and removing the contamination by means other than digging it out (e.g., bioremediation).

CHAPTER IV

DESCRIPTION OF THE AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This chapter consolidates the discussions of affected environment, potential impacts, and mitigation measures, rather than creating separate chapters for them. It is hoped that this format will facilitate understanding of the issues. For example, all discussions of endangered species potentially affected by the various closure projects will be together in one section of this chapter. Similarly, all discussions of historic resources will be together in one section, etcetera.

1. Measurement of Environmental Consequences. To provide clear impact criteria, this environmental assessment defines three types of impacts: significant, insignificant and negligible. These thresholds, or significance criteria, will be defined for each environmental issue discussed in this chapter.

Significant impacts include beneficial and adverse effects which exceed established or defined thresholds. For example, air emissions that result in an exceedance of federal ambient air quality standards, or elimination of rare or endangered species, would be considered significant impacts.

Insignificant impacts include beneficial and adverse effects which are noticeable but do not exceed established or defined thresholds. For example, changes in ambient noise levels of 3 decibels would be perceptible, but would not represent a significant change in noise levels.

Negligible impacts are those effects which are barely perceptible. For example, if non-native plant species are affected in one small project area, and the rest of the total island populations of the species was unaffected, then the effects would be considered negligible.

2. Mitigation. During the course of project planning, several aspects of the proposed action were identified as having the potential to cause significant impacts, unless modifications were made to their method of execution. These modifications (referred to as mitigation measures) have been integrated into the proposed action, and are described in the discussions on potential impacts.

3. Biological environment.

a. Flora.

(1) Valley floor. In 1942, the Navy took over Ha`iku Valley to build a radio station to communicate with ships throughout the Pacific area. An intense program of construction was started, with the central portion of the valley cleared and a large antenna system constructed. The original antenna ground plane consisted of a radial system 3000 feet in diameter. In addition to the antenna and the transmitter, approximately 50 support buildings were constructed by the Navy, including quarters, a mess hall, and power substations.

As a result of this clearing, the valley floor vegetation type is now mostly mixed introduced forest and scrub, dominated largely by introduced or non-native species. No rare plants have been found on the valley floor and lower slopes. Extensive areas are covered by a forest composed of various introduced tree species such as clumps of large, old mango trees (Mangifera indica), stands of albizia (Paraserianthes falcataria), octopus trees (Schefflera actinophylla), Java plum (Syzygium cumini), African tulip (Spathodea campanulata), and Chinese banyan (Ficus microcarpa). The understory is often composed of a dense growth of guava (Psidium guajava), Christmas berry (Schinus terebinthifolius), and ti (Cordyline fruticosa). Shampoo ginger or 'awapuhu kuahiwi (Zingiber zerumbet) is locally common, often forming extensive patches under the forest canopy. Along the streams, hau (Hibiscus tiliaceus) forms dense, almost impenetrable thickets.

The areas dominated by introduced plants have little of botanical interest. Introduced species are all those plants which were brought to the Hawai`ian Islands by humans, intentionally or accidentally, after Western contact, that is, Cook's discovery of the islands in 1778.

The small gulches at the base of the cliffs on the Pali side support a few remnant patches of native forest which contain plants of papala kepau (Pisonia umbellifera), two Cyrtandra species, mamaki (Pipturus albidus), etc., but none of these plant species is considered rare.

A botanical survey of the station was conducted by Char and Associates for this EA. A summary of the report is provided below; the full report is attached as Appendix B.

(2) Summit and ridge crest areas. The main vegetation type in these areas is known as 'ohi'a wet shrubland. It is dominated by three species of 'ohi'a (Metrosideros): 'ohi'a lehua (Metrosideros polymorpha), lehua papa (M. rugosa), and 'ohi'a 'ahihi (M. tremuloides). A rich assemblage of other native trees, shrubs, vines, herbs, and ferns is also found here, including a number of rare species. This vegetation type is of low stature, as it is constantly buffeted by the trade winds, and is often cloud-covered. The branches of the low, windswept trees and shrubs are covered by a layer of leafy liverworts, mosses, and smaller epiphytic ferns.

(3) Cliff faces. These areas are dominated by the vegetation type known as 'uki mixed shrubland. On the Kahuku (north) side, it begins at about the 1,000-foot elevation; on the Pali (south) side, it begins at about the 1,500- to 1,600-foot elevation.

This low-statured shrubland is dominated by 'uki (Machaerina angustifolia), a member of the sedge family which forms rounded clumps, 2 to 3 feet tall. The 'uki clumps are surrounded by a dense low mat of other native grasses, ferns, herbs, and small shrubs. These include tufts of kawelu (Eragrostis variabilis), 'ohe (Isachne distichophylla), uluhe fern, and wawae'iole (Lycopodium cernuum).

Along its lower limits, many of the introduced components from the mixed introduced forest and scrub, such as octopus tree and guava, can be found. On the Kahuku side cliff face, there are numerous rocky outcroppings and sheer walls of stone. On the Pali side, the cliff face is not as steep, and the deeply fluted cliff faces support many small hanging valleys. These more protected areas contain a number of the woody elements in the 'ohi'a wet shrubland found on the summit and ridge crest areas.

(4) Rare plants on the project site. The areas dominated by native plant communities are of interest because they often harbor rare species, some

of them threatened and endangered. These plants are of particular concern to the government agencies which are charged with their protection through the endangered species laws.

(a) Antenna Spans. The small hanging valleys and the cliff faces below the summit ridges in the area of the antenna spans harbor rare plants such as the endangered Tetraplasandra gymnocarpa and Trematolobelia singularis, and species of concern (SOC) such as Labordia hosakana and Myrsine fosbergii. On the Pali side, the small hanging valleys are found roughly between 1,800 feet elevation and just below the summit ridgeline. On the Kahuku side, there are fewer hanging valleys and these are found closer to the summit at about 2,200 feet elevation.

(b) Antenna Anchors. Each antenna anchor or footing consists of a leveled area which contains an I-shaped concrete pad and steel anchor tower, a coarse gravel-lined area around the pad, and a grassed area on the remaining portions of the more or less level, disturbed site. No rare plants were found on the leveled antenna anchor areas.

A few rare plants are found in the 'ohi'a wet shrubland which surrounds the leveled area. Figures 7 and 8 show the location of rare plants at the Kahuku (K) and Pali (P) side anchors, respectively. A discussion of the plants found within two meters or so of the antenna anchors follows.

Kahuku side (K) anchors:

K1 - One large shrub of Myrsine fosbergii (SOC) is found on the southwest edge (Ha`iku Valley side) of the leveled area; part of plant overhangs leveled area.

K5 - Five Myrsine fosbergii shrubs are found on the west (leeward) side of K5 on steep slopes.

K6 - One small Myrsine fosbergii found on the southwest corner of leveled area on steep slopes.

Pali Side (P) anchors:

P6 - One plant of Myrsine fosbergii (SOC) is found on the south edge (leeward side) of the leveled area. About a dozen plants of Labordia hosakana (SOC) are found on the steep cliff face on the northwest edge (Ha`iku Valley side) of the leveled area.

(c) Ha`iku Stairs. Plants of Myrsine fosbergii (SOC) are found at three locations along the stairway - 1,890 feet; 2,010 feet; and 2,160 feet elevation. Plants of the endangered Trematolobelia singularis have been recorded from the top of Ha`iku Stairs, but we did not find any mature, flowering plants during our survey. Flowering material is needed to distinguish this species from the more common T. macrostachys, which is also present in the area in greater numbers.

(d) Ridge Trail/Stairway Between Anchors. The vegetation along the trail/stairway between the antenna anchors supports a number of rare species, especially on the Pali side.

Kahuku side trail/stairway: Between K4 and K5 anchors -- One plant of Myrsine fosbergii (SOC) found on the west side of the trail within the study corridor.

Pali side trail/stairway:

Between P1 and P2 anchors -- Six plants of the endangered Cyanea acuminata are found just off the metal stairway on the southeast side.

Between P2 and P3 -- One plant of Myrsine fosbergii found on the southeast side of the trail just before P3.

Between P3 and P4 -- About a dozen plants of Labordia hosakana (SOC) found on the steep cliff face (Ha`iku Valley side) and on the more protected leeward (southeast) slopes.

Between P4 and P5 -- Roughly 10 plants of Labordia hosakana on the Ha`iku Valley side. On the leeward side (south and southeast) of the trail, there are 12 plants of the endangered Cyanea humboldtiana on a steep slope just off the trail; most of the plants are seedlings.

Between P5 and P6 anchors -- Six plants of Labordia hosakana on the Ha`iku Valley side of the trail. Two seedlings of the endangered Cyanea humboldtiana are found on the south side of the trail.

(4) Significance Criteria. A significant adverse impact would occur if any listed threatened or endangered plant species or species of concern would be impacted by site development. An insignificant adverse impact would occur if no endangered or threatened plant species or species of concern would be impacted. Effects would be negligible if no endangered or threatened plant species or species of concern were to be disturbed.

(5) Potential Impacts.

(a) Valley floor projects. The projects described in Chapter 3 taking place on the valley floor ("BUILDINGS"; "UTILITIES"; "QUARANTINE STATION"; "INTERIM USE LICENSE"; "NAVY DEBRIS AREAS") will impact little if any vegetation; and any impacted vegetation would be non-native.

The plants found on the valley floor can be found on adjacent lands, and throughout the Hawai`ian Islands in similar environmental habitats. These projects are expected to have negligible impacts on the total island populations of the species involved. The anticipated impacts on the botanical resources are not considered significant, as the vegetation is dominated primarily by introduced species.

(b) Antenna lowering. The majority of the rare plants found in the area around the anchor sites are on steep slopes. Span removal activity will be restricted to the leveled, grassy, disturbed anchor sites. The large Myrsine fosbergii shrub which abuts and overhangs a portion of the southwest corner of the K1 site is not directly under the antenna span, and can easily be avoided. The location of this plant will be pointed out to the contractor and crew who will be removing the span. Span removal activity on the leveled areas of the antenna anchors should not have a significant impact on rare plants.

The small hanging valleys and cliff faces below the summit ridgeline, which support rare species and are dominated by native plant communities, must be avoided. The Kahuku side valley walls are almost perpendicular, and the antenna spans should drop without hitting most of the valley walls. The Pali side valley walls have a number of hanging valleys and small ridges which extend out below the summit ridgeline, then drop steeply at about the 1,800-foot contour. Controlled lowering of the spans on the Pali side should keep them away from most of the sensitive areas.

The span removal crew will use the ridge trail/stairway between the anchors during the removal operation. Because of the presence of rare plants on or adjacent to the connecting ridge trail, no vegetation will be removed or cut. The location of the

endangered Cyanea acuminata is especially sensitive as the plants can be easily broken given its close proximity to the stairway. The location of these plants will also be pointed out to the span removal crew.

Leaving the swales surrounding the antenna anchors in place would minimize the potential for impacting on adjacent rare plants. Removal would also cause erosion impacts from a sudden destabilization of the ridgeline.

If the swales are not removed, they would degrade over time, allowing vegetation to take over the area. Leaving them in place would pose a negligible impact.

(c) Ha`iku Stairs Rehabilitation.

(i) Ridgeline (lower) Stairs. Rehabilitation of this portion of the stairway should have only a limited impact on the vegetation. The only rare plant located here during the field survey is Myrsine fosbergii, a species of concern. The plants are found in three locations along the stairway; all of the plants are located 6 to 10 feet from the stairway. As much of the vegetation will be left intact if the stairway is removed to slow soil erosion and to revegetate the bare areas.

(ii) Upper Stairs (stairway between anchors). The 'ohi'a wet shrubland found along this section contains a rich assortment of native species as well as several rare plants.
Rehabilitation removal of the Stairs may have an impact on the rare plants if not carefully supervised.
A botanist will be present when the work on this section of the stairway is being conducted. The areas with rare plants will be roped off and identified. If possible, no native plants will be cut or removed.
There is expected to be some soil loss through erosion if the Stairs are removed. Keeping as much of the vegetation intact on the steeply sloping portions should slow soil loss. The surrounding vegetation should more or less quickly cover over the areas now occupied by the metal stairs.

(iii) City license. If the Stairs are restored, and the City chooses to open them up to the public, USCG will require the City to prepare a management plan for the rare/endangered/species of concern. This plan will have to be approved by USCG and the U. S. Fish and Wildlife Service (USFWS).

(6) Consultation with U. S. Fish and Wildlife Service.
The federal Endangered Species Act requires assurance that actions taken do not jeopardize the continued existence of endangered and threatened species. This act affords protection by requiring consultation with USFWS for projects with potential impacts to species formally listed as endangered or threatened species.

The Coast Guard has consulted with USFWS on the proposed antenna lowering method, and concluded that it was not likely to adversely impact listed species or their habitat. USFWS has concurred with this finding (Appendix C).

Because of the greater number and sensitivity of rare plants along the Stairs, and because project implementation is not imminent, USCG requested of USFWS that

the consultation process for the Ha`iku Stairs restoration be postponed. Consultation will occur when USCG can provide a more detailed project scope, and finding of effect.

It is expected that a project scope can be developed that is protective of these species, and that will receive USFWS concurrence. However, if such a scope cannot be developed, USCG will prepare a follow-up environmental impact statement (EIS) to this EA.

b. Fauna.

(1) Valley floor. A survey of avifauna and feral mammals on the valley floor was conducted four years ago (Bruner, 1993). A summary of the report is provided below.

A typical array of exotic birds and one migratory bird species were detected. No endemic land birds were recorded. The migratory bird found on the survey was the Pacific Golden Plover (Pluvialis fulva), which prefer open areas such as plowed lawns along the roads and on the lawns at the Animal Quarantine Station. The plover arrive in Hawai`i in early August and depart to their arctic breeding grounds during the last week of April. Plover are extremely site-faithful on the wintering grounds and most establish foraging territories which they defend vigorously. Five plover were consistently recorded on each day of this survey. The only other possible shorebird species which might forage on the lawn areas is the Ruddy Turnstone (Arenaria interpres).

The U.S. Fish and Wildlife Service (USFWS) has reviewed their files on the project site and determined that, to the best of their knowledge, there are no listed or proposed endangered or threatened species of animals within their jurisdiction that would be expected to be found in the vicinity, or would be affected by, the housing project (Smith, 1993). The endangered Hawai`ian Hoary Bat was not recorded at this site but it is known to occur on O`ahu.

Feral mammals at the site include the Small Indian Mongoose (Herpestes auropunctatus) and feral cats, rats, mice, and pigs. The valley may have a large feral pig population. Pigs are a destructive force in native forests. It is unknown whether the endemic and endangered Hawai`ian Hoary Bat (Lasiurus cinereus semotus) exists in the valley. No bats were found on this survey.

(2) Summit and ridge crest areas. USFWS recently surveyed these areas, as well as the upper quarter of the Ha`iku Stairs, for endangered Achatinella tree snails, and all other snail species (Miller, 1997). Although native vegetation capable of supporting these snails is present, no snails were found.

(3) Significance Criteria. A significant adverse impact would occur if any of the proposed closure projects affected habitat for Federally of State listed endangered, threatened, or candidate animal species. Should only introduced species be present, the action is considered to have an insignificant adverse effect on fauna. The absence of fauna in the impact area would result in a negligible impact on fauna.

(4) Probable Impacts. Insignificant impacts to fauna would occur based on the absence of any known listed threatened, endangered, or candidate fauna and the presence of only introduced and migratory avifauna.

4. Historic and archaeological resources.

In accordance with Sections 106 and 110 of the Historic Preservation Act, archaeological and historic surveys have been initiated to assess the presence or absence of cultural resources at the station.

The study of historic resources consists of an evaluation of five World War II-era structures, for their potential significance; this study is still ongoing. These five structures are from the original Naval Radio Station: the main transmitter building, two power sub-stations (one abandoned), the Ha`iku Stairs, and a concrete retaining wall with "USNRS Ha`iku" (United States Naval Radio Station Ha`iku) molded into it, in the area where the station's mess hall was located.

An archaeological reconnaissance survey was conducted by Cultural Surveys Hawaii for the areas under the antenna spans, and at the base of the Ha`iku Stairs. The survey report is attached as Appendix D. A complete survey of the station will be performed prior to closure.

The archaeological survey involved a review of available prehistoric and historic information on the project area, systematic pedestrian surveys, and excavation of test units. Survey results are summarized below.

a. Previously identified archeological resources.

Seven archaeological studies were conducted within Ha`iku Valley, prior to the survey performed for the proposed action. None of these previous studies surveyed the valley as a whole. The first three were nothing more than limited walk-overs of only small portions of the valley. The intensive investigations conducted in conjunction with Interstate H-3 construction were limited to the planned highway corridor along the south rim of the valley and an area of antenna expansion in the central portion of valley, with some reconnaissance along Ha`iku Stream. The last three were performed for proposed housing areas in the northeast corner of the station. These latter areas were never developed.

The previous studies recorded a total of 21 archaeological and historical sites within the valley. These 21 sites include the traditional locations of two heiau, or shrines (Kahekili or Kahekili Heiau, and Kane ame Kanaloa Heiau), a named cave with legendary associations and possibly containing burials (Kaualehu Cave), three housesites, one large lo`i (irrigated terrace for growing taro) complex; along Ha`iku Stream, smaller agricultural sites, and several isolated cooking features (McAllister, 1933; Sterling and Summers, 1978; Williams, 1991; Williams and Nees, 1992).

b. Prehistoric and Historic Background.

Ethnographic sources such as Handy and Handy (1972) identify the ahupua`a (land division from uplands to the sea) of He'eia as a region renowned for the cultivation of taro. In both the prehistoric and historic periods, the region was often the residence of powerful ali`i (Kamakau 1992:137-138; Devaney et al. 1982:5). He`eia, and the surrounding ahupua`a along Kane`ohe Bay, were known for their rich agricultural and marine resources (including the many fish ponds) and were undoubtedly heavily populated (Devaney et al. 1982:7-9).

The settlement pattern would have reflected this spectrum of resources. Habitation was most likely concentrated in the coastal and intermediate areas, and more dispersed in the upland areas closest to the pali. Prehistoric and

early historic land use would have covered the landscape with traditional structures, ranging from the abundant agricultural features and their associated irrigation features, residential sites, fish ponds, religious structures, and burials.

From the available radiocarbon dates, it is fairly certain that land use in Ha`iku Valley was widespread by the fifteenth century. During the Mahele (land division of 1848), the Land Commission awarded numerous land awards in He`eia - the majority of which were taro fields (Alexander and Baldwin Map 1913). Three of these awards (LCAs 5969:2, 3307:1 and 2, and 3393:1) were for taro lo'i along Ha`iku stream (Williams 1993:3) within the current project area (Webster Map 1851; Williams 1993:3).

Little is known about the use of the valley between 1800 and 1940. Princess Bernice Pauahi Bishop and Bishop Estate owned most of Ha`iku Valley from the 1850s to World War II, and portions of the lower valley were leased for growing sugar cane during the 19th century (Williams, 1993b).

Archaeological sites found in two locations not awarded during the Mahele indicate that at least two families were living in the valley at that time or shortly after. Both sites are house sites (State sites 50-80-10-2041 and -2078); radiocarbon dates and artifact types indicate the houses were occupied both in the pre-Contact period and between the mid and late 19th century (Williams and Nees, 1992). At least one of the sites (Site 2041) appears to have been occupied during the time of the Mahele. Sometime before 1940, and most likely before 1900 (based on artifact evidence), the last family moved out of the inner valley.

As discussed above, the central portion of the valley was cleared to construct the Naval Radio Station. It is this central portion of the valley that would have been most suitable for Hawai`ian habitation and agriculture. This portion would likely have had the highest site density. Woodbury (1946) relates that the initial Navy land clearance leveled a number of terraces in the central portion of the valley.

However, previous investigations have found that some site remnants in the central portion of the valley survived the military land alterations. These alterations were less extensive in the peripheral portions of the valley, closer to the vertical pali. Site types that could still be present in these peripheral areas include agricultural features (especially lo`i along drainages), house sites, shrines or other religious structures, and isolated earth ovens.

During construction of the main access road into the valley, a large number of pre-Contact burials were reportedly uncovered. According to the only known historical record of the discovery (Woodbury, 1946), such a large number of burials were uncovered that the local workers, who were mostly Hawai`ians, refused to continue working. In order to complete the road, the Navy reburied the remains on the side of the road as they were uncovered (Woodbury, 1946). The number or location of these reinterred remains is not recorded.

In 1973, the Coast Guard took over the transmitting facilities from the Navy for operation of the Omega Navigation Station. During that time, a new underground radial antenna system with a diameter of 2200 feet was installed, further impacting the center of the valley. The Navy demolished most of the buildings prior to transfer of the facility to the Coast Guard.

c. Current survey findings and archaeological interpretations.

Nineteen of the 21 archaeological sites previously recorded in Ha`iku Valley are outside of the boundaries of the proposed project area. Archaeological sites located within the proposed project area are summarized below.

The survey documented four archaeological sites (state site numbers 50-80-10-2078, -2083, -5498, -5499). Two previously identified sites (-2078 and -2083) were evaluated and their current state of preservation was checked with that recorded during previous archaeological investigations. Sites 50-80-10-5498 and 50-80-10-2083 are both agricultural terraces that were found away from the central portion of the valley, along the banks of Ha`iku Stream. Sites 50-80-10-5499 (excavated pits) and 50-80-10-2078 (habitation terraces) were located away from the central portion of the valley on the crest of fairly steep ridges. These four sites are shown in Figure 9, in relation to the antenna spans, Board of Water Supply (BWS) and Omega Station buildings and roads.

Site 50-80-10-2078, the ridge top habitation terraces, had been described and mapped by crews from the Bishop Museum (Williams and Nees 1994b). This site is a house site comprised of seven features (six terraces and a depression) located on a ridge approximately 305 m. (1000 ft.) north of the Transmitter Building in the antenna expansion area, on a small spur ridge overlooking Ha`iku Stream.

The site was named Hale Pia (Arrowroot House) for a small patch of pia growing on it, the only place this plant was noted in the valley. The site covers an area approximately 85 m. in length by 50 m. in width (4250. m2).
Seven features are present at this site, including five earth terraces, one stone-paved terrace, and a surface depression and mound, as well as early post-Contact artifacts on the site surface.

The present condition and appearance of the site matches the descriptions and map prepared by the Bishop Museum. Evidence in the form of radiocarbon dates and temporally diagnostic artifact types, fairly conclusively demonstrate that this site was utilized in both the prehistoric and historic periods. Whether the site was utilized in the same manner, e.g., habitation, from the prehistoric into the historic period remains in question. The Bishop Museum report suggests that the site may have been used discontinuously during the two epochs. It is clear that, as one of the few habitation sites left in Ha`iku Valley, site 50-80-10-2078 offers potential to further inform on both prehistoric and historic habitation within the valley.

The other previously recorded site (50-80-10-2083; two agricultural terraces) was found in the same poor state of preservation as described by Williams and Nees (1994b). As noted by Williams and Nees (1994b:117-118), these terraces are undoubtedly part of the overall terrace system that was constructed along Ha`iku Stream in prehistory [one radiocarbon date on terraces further down the valley yielded a calibrated age range of A.D. 1410-1640 (Williams and Nees 1994b:88)] and were used into the historic period (based on Land Commission documents from the mid-1800s).

The poor state of preservation of the terraces is undoubtedly due to stream erosion and flooding. A possible secondary cause of the degradation of the site is the removal of the stones from the terrace facings for use in nearby modern construction.

Site 50-80-10-5499, the excavated pits, is somewhat enigmatic and has only been tentatively assigned a function - ti oven remnants. The two roughly circular excavated pits were dug into a moderate/ steep sloping ridge just south and above site -5498, at an elevation of approximately 750 feet above mean sea level (amsl). The two pits are located approximately 4.5 meters apart from center to

center. Both of the pits appear to have been originally hand dug in soil, not naturally formed or machine excavated, and no rock facings are evident. No cultural material of any kind was found in the vicinity of the excavated pits.

It seems unlikely that the pits were related to military activities, due to the complete absence of modern garbage and debris which was found in association with all other military activity areas during the survey. It is more likely that the

pits are the result of some indigenous land use activity. Although no charcoal was uncovered during the excavation, based on feature morphology and context (amid all the ti plants), it is not unreasonable that the pits functioned as ti ovens.

Site 50-80-10-5498, the previously unrecorded agricultural terrace complex, is a complex of 17 terraces and one retaining wall. Figure 10 is a plan view of the site. Feature 1, the uppermost terrace, is located approximately 60 meters SE of one of the numerous plunge pools at the base of the pali--the head of a prominent catchment basin on the northwest side of Ha`iku Valley. The drainage along which the terraces are constructed is one of the major tributaries of Ha`iku Stream. The drainage, previously perennial, now only flows intermittently during periods of heavy rain.

This change in the flow of this tributary to Ha`iku Stream can be traced to the 1940 construction by the City and County of Honolulu of Ha`iku water tunnel. Prior to the installation of the tunnel, the maximum water table elevation was roughly 730 feet amsl. When the tunnel was completed, water stored in the dike compartments in the vicinity of the tunnel was drained to the level of the tunnel--550 feet amsl. This effectively stopped the flow of springs which previously fed the streams in the intermediate elevations. This clearly affected the drainage adjacent to site 50-80-10-5498, which flows from a plunge-pool located at approximately 700 feet amsl.

No traditional Hawai`ian cultural materials were observed on the surface in site -5498. Remnants of both the Naval Radio Station and Omega Station ground planes were evidenced by three felled ground radial antenna poles and stumps, accompanied by numerous ground wires and metal stakes.

The terraces are clearly a lo`i (agricultural pondfield) complex for the cultivation of taro. Typologies for pondfield complexes of differing forms have been discussed by Riley (1975), Kirch (1977; 1985:218-227), and Allen (1987:245-251). Following both Kirch (1985:226) and Allen (1987:247), site 50-80-10-5498 is a type II complex, consisting of "terraces on a colluvial slope or alluvial flat; single, short ditch to upper terraces; step flow below" (Allen 1987:247). The water inlet to the complex would have been in the upper portions of feature 1. This inlet was most likely fed from a pool created by a constructed dam, or pani wai, that raised the stream water level to that required to feed the short ditch into the feature 1 terrace. The rather uncomplicated layout and adequate slope of the terraces would have allowed for simple step flow from the upper terraces to the lower ones. Although there may have been more formal channels laid out to distribute water among the terraces, no evidence of these channels was observed on the current terrace surfaces.

Except for the three lower terraces (Features 16-18), which have been reduced to remnants due to flooding and encroachment of hau,

and some areas of collapse, the terraces are in good condition. Judging by the largely destroyed remnants of features 16-18, the terraces found below the main terrace complex, it is likely that more terraces once existed along this tributary of Ha`iku Stream than were recorded. During the survey, ample

evidence of stream erosion related to heavy rains was observed, including up-rooted trees and boulders and numerous intermittent flood channels. One of these flood channels was cutting through the remnant of feature 16. It is clear that terraces have been destroyed. It is also possible, but less likely, that they have been buried under colluvium or alluvium.

Unfortunately, no charcoal was recovered from the test unit, and no radiometric dating of the feature is currently possible. However, the terraces of site 50-80-10-5498 can be tentatively dated by their association with other dated agricultural terraces along the Ha`iku Stream. Williams and Nees reported a charcoal sample from a terrace further down Ha`iku Stream that yielded a calibrated age range of circa A.D. 1410-1640. This same terrace complex was evidently used continuously until at least the mid-1800s (based on Land Commission documents [Williams and Nees 1994b:88]).

d. Resource evaluation.

Of the four sites found in the inventory survey of the project area, all but one appear to have been impacted by modern disturbances. Informants reported to Williams and Nees (1994b) that site 50-80-10-2078 was widely "pot-hunted" in the recent past. The ridge on which the site sits, just south of the site, was cut by a bulldozer to create a road. Site 50-80-10-2083 was potentially used as a rock gathering source for modern construction. It was also impacted by the emplacement of the 1972 ground antenna system. Even site 50-80-10-5498, tucked away at the base of the pali, has the pole and wire remnants of radial 12 of the radial ground antenna system. Only site 50-80-10-5499 did not appear to have been impacted by modern disturbance.

The extensive modern modifications and constructions have undoubtedly removed a substantial amount (quite possibly the vast majority) of the archaeological resources that were once extant in Ha`iku Valley. Historic sources such as Woodward (1946) remark on the archaeology that was destroyed in the valley by the military during World War II. We know from ethnographic and historic studies that the prehistoric population of Windward O`ahu was great. Well watered Ha`iku was part of this agriculturally productive, populated region. It is reasonable to conclude that the entire range of prehistoric Hawai`ian land use was carried out, resulting in a rich archaeological record, consisting of habitations, agricultural sites, burials, religious sites, and other remnants of traditional practices. From previous archaeology reports, there is evidence that all of these site types existed or still exist within Ha`iku Valley.

Although the survey to date has only covered the areas under the antenna spans, and the base of the Ha`iku Stairs, the four sites identified so far are most likely representative of traditional land use in Ha`iku Valley. The two agricultural sites (50-80-10-2083 and 5498), both lo`i complexes as would be expected in the extremely well watered valley of Ha`iku, are representative of the numerous terraces that were most likely spread across the valley. The single house site (50-80-10-2078), with its possible prehistoric and historic occupation components, represents the other habitations which likely dotted the valley. Finally, the excavated pits of site 50-80-10-5499, although their function designation is less sure, represent the less structured use of the landscape, e.g., the harvesting of ti and other resources of the "tended landscape" that would have existed in Ha`iku Valley.
No burials or religious structures were observed during the survey, however, the existence of these features in other portions of Ha`iku is reported in historic sources (Woodward 1946) and previous archaeology reports (McAllister 1933; Williams and Nees 1994a 1994b).

e. Determination of eligiblity.

Site significance is determined after evaluation of each site, in light of the five broad criteria used by the State of Hawai`i and National Registers of Historic Places (36 CFR Part 60).

All four sites found within the survey area appear to meet Criterion D; i.e., they have yielded information important to the prehistory and, in some instances, history of Ha`iku Valley. Additionally, site 50-80-10-5498, the lo`i complex at the base of the pali, because it is well preserved and largely intact, appears to meet Criterion C: "...excellent example of a site type."

The five World War II structures mentioned above are currently being evaluated for their historic significance. Initial findings indicate that all five structures (with the possible exception of the Ha`iku Stairs, and the Transmitter building) are not individually eligible for listing in the National Register of Historic Places. However, the Omega Station as a whole may be eligible as a historic district under Criteria A [historical association with World War II], and Criteria C [distinctive architecture and engineering of a Naval Radio Station unique to the Cold War period] (Barton, 1997a, 1997b).

f. Significance Criteria. Under the National Historic Preservation Act, an action is considered to have a significant impact if it may adversely affect districts, sites, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historical resources.

Section 106 of the ACHP regulations requires federal agencies, before any undertaking, to take into account the effect of the undertaking on archeological and historic resources, and to consult with the State Historic Preservation Officer (SHPO) on these undertakings. Section 106 consultation with the SHPO has not been completed for the resources identified above. This process will be completed prior to the start of any project work.

g. Probable Impacts.

(1) Antenna lowering. The proposed method of lowering by use of winches and tag lines would minimize potential damage to the archaeological sites, by allowing control over where the spans are placed.

If controlled lowering is used, the spans can be guided down to the valley floor, and away from the base of the cliffs where the archeological resources are found. If the control measures are not precise, and the spans were to come down in the resource areas, the spans would probably get caught up in the fairly dense vegetation (kukui, ti, ginger, thimbleberries, hau, mountain apple) surrounding the sites. The vegetation should serve to protect the sites from direct impacts from the spans.

In order to mitigate possible damage to the four sites during the removal of the antenna spans, an archaeologist will perform site investigations after the lowering, but prior to the removal, of any spans which may lie on or near any of the sites. This investigation will be necessary for only spans 1-3 (the three northernmost spans), since these are located above the sites. Since spans 4-6 (the three southernmost spans) are not above any sites, their lowering and removal should have no impact on any archaeological sites, and no investigation or monitoring would be necessary.

If it is determined that span removal, especially by dragging, could cause damage to a site, an archaeologist would be present to monitor the removal of the span, in order to insure protection of the site. If it is determined that

dragging could cause damage, the span would instead be cut in place and removed by means which will not impact the site, such as by helicopter.

(2) Ha`iku Stairs Restoration.

(a) Archaeological resources. Since the present inventory survey did not locate any archaeological sites at the area near the base of the Ha`iku Stairs, no adverse impact should be expected, and no archaeological mitigation is necessary for any work in the vicinity of the Stairs.

(b) Historic resources. As stated above, initial findings indicate that the Ha`iku Stairs may be eligible for listing in the National Register of Historic Places.

The first step in stringing the antenna spans above the valley for the Naval Radio Station required an ascent of the cliffs, to the summit of Pu'u Keahiakahoe. The initial ascent took 21 days by high-scalers, who drove spikes into the mountainside using rope, a rock/sledge/pick hammer, and three-foot steel pins.

During the three-week climb, workers down below were assembling sections of wooden ladders. When the high scalers descended, they hauled the sections of wooden ladders up the ridge one at a time, where they were lashed to spikes and to one another until they reached the top. In 1955, the original wooden ladder was replaced with a galvanized steel one made of steel ship ladders.

The Stairs are thought to be significant because of the uniqueness and difficulty of the engineering and construction methods employed. They visibly illustrate the inclusion of the cliffs as the vital component in creating this long wave radio station, and the danger of the climb for the World War II workers. The Stairs represent that part of the site that most clearly and effectively associates it with the innovative use of the natural topography. This innovative use was needed to create the radio system, which was a vital component in the Pacific defense in World War II (Barton, 1997b).

Materials should be used in the restoration that are sympathetic with the original, yet which make it possible for the observer to recognize that they are an addition. It is important that the original fabric is discernible, while maintaining the appearance and atmosphere of the original workmanship. As a general rule, the fewest alterations possible is preferable, with the necessary restoration being done with consideration for their historical association, and with as high level of integrity as possible.

Draft plans for the restoration involve using predominantly in-kind materials; e.g., galvanized steel railings will be replaced with the same size and shaped materials. If the Stairs are found eligible, restoration would be possible without an adverse effect on its integrity, if design plans were followed that ensured the location, atmosphere, and visible appearance were protected (Barton, 1997b).

The Section 106 consultation process will be completed prior to rehabilitation of the Stairs.

(3) Buildings; utilities; quarantine station; interim license; Navy debris areas. No archeological or historic resources would be

impacted by these projects, with the possible exception of the Transmitter Building. As noted above, this building may be eligible for listing in the National Register of Historic Places.

One of the proposed projects involves sealing all ground level entrances for this building, and removing the stairs leading to the upper decks. Since this is temporary, non-permanent alteration to the building, it is felt that this would not have
an adverse impact on the structure. Moreover, these actions would be cancelled if the license is granted to the City and County of Honolulu (CCH).

If the license is granted, and the City chooses to open the valley up to the public as a nature park/preserve, USCG will require the City to prepare a management plan for the protection of historic/archeological resources. This plan will have to be approved by USCG and the SHPO.

5. Hazardous waste sites.

USCG is presently conducting a State of Hawai`i Department of Health (HI DOH) Tier 3 risk assessment, which will evaluate the health risk associated with potential exposure to the Navy debris areas. The risk assessment will be completed in July 1997.

a. Significance Criteria. Contaminants present in concentrations above regulatory cleanup goals, if not cleaned up prior to unrestricted site access, would be considered a significant impact. Concentrations below these levels, if left in place, would be considered to have an insignificant impact to human health and/or the environment.

b. Probable Impacts. The proposed project would remove all soil found to exceed risk levels. Excavation activities, such as the use of backhoes and other earth moving equipment, will likely last several weeks. This will result in insignificant, short-term noise and air quality impacts; excavation activities will be limited to normal work hours.

6. Current and future land uses.

a. Background. The State Land Use Commission has placed all lands in the State in one of four land use districts: Urban, Agriculture, Conservation, and Rural. The entire Omega Station is designated Conservation district.

The State Department of Land and Natural Resources (DLNR) established subzones within the Conservation Districts and fixed boundaries for the subzones (DLNR, 1991). The lands owned in fee simple on the Omega Station property lie within "General" (G) and "Limited" (L) Subzones. (Figure 11). The permitted uses of L and G subzones includes "Governmental use not enumerated herein where public benefit outweighs any impact on the conservation district."

The objective for "General" subzone is to "designate open space where urban use would be premature." Permitted uses of "General" subzone include the following:
(1) Establishment and operation of marine, plant, and wildlife, sanctuaries and refuges, wilderness and scenic areas, including habitat improvements;

(2) Restoration or operation of significant historic and archaeological sites listed on the national or state register; and

(3) Governmental use not enumerated herein where public benefit outweighs any impact on the conservation district.

The objective of "Limited" subzone is to "limit uses where natural conditions suggest constraints on human activities." Boundaries for this subzone were designated to encompass: (1) Land susceptible to floods and soil erosion, lands undergoing major erosion damage and requiring corrective attention by the county, state, or federal governments; and (2) Lands necessary for the protection of the health and welfare of the public by reason of the land's susceptibility to inundation by tsunami and flooding or to volcanic activity and landslides which incorporate a general slope of 40% or more.

b. Overall significance criteria. The proposed action would be considered to have significant adverse impacts if it not consistent with current or future land use. Impacts would be considered nonsignificant if the proposed action does not interfere with current land use and/or future land use proposals.

Under the Supremacy clause of the U.S. Constitution, the Federal Government is exempt from State land use regulation. However, it is the Coast Guard's intention to provide the same protection of the land as is called for by its current zoning. To the maximum extent practicable, the Coast Guard will maintain consistency with State standards, condition, and guidelines.

c. Probable Impacts.

(1) Restoration of Ha`iku Stairs. (Recreation/education resources).

The Ha`iku Stairs, while never officially closed to the public, were not widely known until an article appeared in the Sunday Star-Bulletin & Advertiser in September 1981. Prior to that, it is estimated that approximately 1,000 people per year hiked the Stairs; following the article, more than 20,000 people per year did the hike.

The Stairs were closed to the public in 1987, due to a number of factors. Age and weather had caused significant deterioration; this, plus vandalism to three sections of Stairs led to the decision to close the Stairs, and service the anchors by helicopter.

(a) Significance Criteria. Normally, development projects are evaluated on the degree to which they provide recreational opportunities for the community. For example, addition of significant residential populations would be considered a significant adverse impact if it provided parkland at <2 acres/1000 people (City and County of Honolulu Park and Facilities Standards); conversely, exceeding this ratio would be beneficial.

Establishing significance criteria for the Ha`iku Stairs restoration differs from the other projects evaluated in this EA, and other development projects in general, in that adverse criteria do not exist. That is, the Stairs were not built for recreational use, nor does the Coast Guard have the authority or responsibility for providing recreational resources to the public. Therefore,

if the Coast Guard chooses not to restore them, that decision cannot be said to have an adverse impact to recreation values.

That being said, USCG is in a rather unique situation. As noted in Chapter III, the lower third of the Stairs lies on BWS land, for which USCG has an easement. The terms of the easement require USCG to remove all improvements if so requested by BWS. Cost estimating done by USCG determined that removal of this portion of the Stairs would be more expensive than restoration.

USCG also determined that the costs of removal would be more expensive than restoration for the middle third; and that for the upper third, the costs of removal would be about the same as restoration. Both of these portions lie on Federal land.

As noted in Chapter III, Federal regulations mandate that

"No property which is dangerous to public health or safety shall be abandoned...without first rendering such property innocuous or providing adequate safeguards therefor."

(b) Probable impacts. The recreational impacts from restoring the Stairs can be assessed indirectly, by describing their value to the public while officially open (1981 - 1987).

Experts in botany and natural history have described the Stairs as unique in the Hawai`ian Islands, for several reasons. (Culliney, 1987; Gagne, 1987; Smith, 1987; Cottrell, 1997). Their most outstanding feature is their steep ascent, more than 2,000 feet from the valley floor. As a result, the hiker passes through several different climate and vegetation zones.

Although some trails exist on Oahu which also include several different climate and vegetation zones, none do so in such a sudden and dramatic manner, in ways that sharply illustrate the interaction of topography, botany and climate. It would take at least six times as much trail to reach the summit without the Stairs (Cottrell, 1997). These other trails also require a day-long commitment to see features easily reached by the Stairs.

As such, the Stairs were used by educators to teach many subject areas, including geology, zoology, ornithology, entomology, botany, and ethnobotany. They were also valued highly by the hiking community. The issue of reopening the Stairs was presented at a 1996 meeting of the Na Ala Hele Oahu Advisory Council, which advises the Hawai`i Department of Land and Natural Resources' Trail and Access Program. The Council, which represents a diverse group of trail users (including hikers, hunters and mountain bikers), was very supportive of reopening the Stairs (Cottrell, 1997).

According to the Trail and Access Program, the Ha`iku Stairs is one of the two trails that receive the most public interest. (The other one is the Wiliwilinui trail on Waialae Iki ridge, which has been the subject of controversy due to access problems through a gated community). To be able to generate such interest after being closed for ten years, is a testament to their value in the public's mind.

The local community is also highly supportive of the Stairs' reopening. The Kaneohe Neighborhood Board voted unanimously in May 1997 to support any effort to preserve and restore the Stairs (Gould, 1997). The public is invited to

Board meetings, and there were no negative comments from the public at this meeting (Cunningham, 1997). The local community group "Friends of Heeia Park" is also interested in preserving the Stairs (Gould, 1997).

The general public, however, is probably most interested in the challenging hike ("I climbed Ha`iku Stairs"), the beautiful views, and the quick access to the summit that the Stairs offer.

Reopening the Stairs to the public would be consistent with current and proposed future land use. It would restore an important recreational resource, and as such would have a significant beneficial impact.

(2) City license. CCH's intention, as formulated so far, is to create a nature park/preserve. The basic concept would be to provide watershed protection, preserve the valley in its natural state, and provide recreational opportunities associated with the Ha`iku Stairs and the upper valley. Some of the other buildings at the Quarantine Station, and possibly the Transmitter Building, would be used by the Parks Department for operations, or by other City departments.

These proposed uses are compatible with the General and Limited subzone permitted uses discussed above. These uses would have a similar, low resource-intensive impact on the property's physical environment, to that of its current uses. However, the potential exists for these uses to have adverse impacts on other areas: air quality, and traffic.

(a) Air quality. The State of Hawai`i has air quality standards equal to or more stringent than Federal standards. State standards, like their Federal counterparts, may be exceeded once per year.

The State Department of Health maintains a limited network of air monitoring stations around the state to gather data on the following regulated pollutants: total Suspended Particulate Matter (TSP), particulate matter <10 microns (PM10), sulfur dioxide (SO2), carbon monoxide (CO), ozone (O3), and lead (Pb).

There are no monitoring sites in the Kane`ohe area; however, given the remoteness of the project site and its distance from stationary or mobile sources, it seems safe to assume that on-site air quality is in compliance with existing air quality standards.

(1) Significance Criteria. The criterion used to evaluate potential air quality impacts is the ability of the project itself and/or traffic impacts resulting from the project to meet federal and state air quality standards. Exceedance of these standards would constitute a significant adverse effect. Emissions which do not exceed the standards would have insignificant or negligible impacts.

(2) Probable impacts. An air quality impact analysis was performed by USCG in 1993, in preparation for the proposed construction of 144 housing units at the site. Among the impacts examined were that of air quality from increased residential traffic.

Air sampling for carbon monoxide (CO) emissions was conducted at the Ha`iku Road/Kahekili Highway intersection. Carbon monoxide was selected for modeling air quality impacts associated with motor vehicles, because it has a relatively long half-life in the atmosphere (about 1 month), and it comprises the largest fraction of automotive emissions.

Automotive emission factors for CO were generated for calendar years 1993, 1998 and 2018 using the Mobile Source Emissions Model [MOBILE-4.1] (Morrow, 1993). Estimates of maximum 1-hour carbon monoxide concentrations for A.M. and P.M. peak traffic hours from years 1993 to 2018 showed levels below existing State and Federal air quality standards for CO. The 1-hour "worst case" CO concentration estimates at the two Kahekili Highway intersections were all below state and federal 1-hour standards. It was also concluded that the 8-hour CO concentrations are in compliance with the federal and state 8-hour standards for CO.

The general trend in CO levels at both intersections over the 1993 to 2018 period was downward, despite projected increases in traffic. This is due to the effects of the federal motor vehicle emission control program which, in this case, has caused the rate of decline of per-vehicle and cumulative emissions to be greater than the rate of increase in motor vehicles. The increasing percentage of new cars meeting more stringent emission control standards and the attrition of older, more polluting vehicles contribute to this effect.

The study concluded that air pollution levels would be well within standards; and accordingly, that negligible impacts would occur to air quality on both connector roads and main thoroughfares in the project region from the proposed housing project. No adverse health impacts were anticipated.

(i) City use of office space. The Omega Station currently employs 17 personnel, and the Quarantine Station less than ten. Although CCH has no current projections for the number of personnel to be employed on the property, it can be safely assumed that this number will be within an order of magnitude of the current figure, due to the limited office space available. Given the figures cited above for housing project emissions, it is concluded that this proposed use would have a negligible adverse impact on traffic conditions.

(ii) Ha`iku Stairs. Between 1981 - 1987, when the Stairs were open to the public, it was estimated that 20,000 people hiked the Stairs each year. The following conservative figures have been used to calculate potential air quality impacts from reopening the Stairs: (a) the number of hikers increases to 40,000; and (b) all hikers arrive by car, with no car pooling involved. These figures are conservative, because some amount of car pooling and bus traffic will occur.

The air quality impact analysis mentioned above used the following projected number of vehicle trips, which were expected to result from full occupancy of the 144 housing units:

AM PEAK HOUR		PM PEAK HOUR	
Entering	Exiting	Entering	Exiting
26	83	80	45

If 40,000 cars/year were to transit the station property in each direction, and the Stairs were in use during a 10-hour day (8 AM- 6 PM), the number of cars per hour would be 11. This figure is substantially lower than the figures forecast for the proposed housing project.

The City has also stated their intention to avoid any significant increases in the current traffic flow. One possible approach would be to set limits regarding the maximum number of visitors and staff using the site (Hildebrand, 1997). It is therefore concluded that this proposed use would have a negligible adverse impact on air quality conditions.

(a) Traffic. Currently, Ha`iku Road serves as the primary route to and from the Omega Station. At the main gate of the Omega Station, Ha`iku Road is approximately 16 feet wide. Between the intersections of Kuneki Street and Ha`iku Road and Kahuhipa and Ha`iku Road the roadway is private and narrows to approximately 11 feet of paved surface. Below the intersection of Kahuhipa Street and Ha`iku Road the roadway varies in width, but there are always two lanes (one in each direction) with a minimum width of 10 feet per lane.

Ha`iku and Kahuhipa Roads channel traffic from the Ha`iku Valley residential areas into Kahekili and Kamehameha Highways and Kane`ohe town. Kahekili Highway intersects with Likelike Highway which is a primary travel route between the Primary Urban Center (PUC) and other areas to the south (Leeward) of the Ko`olau Mountains, and Windward and North Shore destinations. Kamehameha Highway intersects with both Likelike and Pali Highways which are primary routes over the Ko`olau Range.

(1) Significance Criteria. Traffic conditions are described by levels of service (LOS), which is indicative of the efficiency of a given intersection in terms of speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. A significant adverse impact would occur if the LOS for roadways serviced by the project were to decrease because of traffic from the proposed housing project. An insignificant adverse impact would exist if the LOS were to remain the same. A negligible impact would occur if no change in traffic were to occur because of the proposed action.

(2) Probable impacts. A traffic impact study was also performed for the proposed housing project, using the vehicle trip numbers cited above. The study concluded that the housing project would not change any LOS ratings for the intersections of Likelike/Kahekili Highways, Kea`ahala Road/Kahekili Highway, Kahuhipa Road/Kahekili Highway or Ha`iku Road/Kahekili Highway; and that, accordingly, the action would have an insignificant adverse impact on traffic conditions in the project region.

(i) City use of office space. As noted above, the number of City personnel to be employed on the property should be within an order of magnitude of the current figures. It is therefore concluded that this proposed use would have an insignificant adverse impact on traffic conditions.

(ii) Ha`iku Stairs. In order to calculate air quality impacts above, it was assumed that (a) the number of hikers would double, and (b) all hikers would arrive by car, with no car pooling

involved. In calculating traffic impacts, the following additional conservative assumption has been made: that the number of hikers would be uniform throughout the year. This is felt to be conservative, because historically, weekday figures were considerably smaller than on weekends.

As noted above, it was assumed that 40,000 cars/year would transit the station property in each direction, for an average number of cars/hour of 11; and that this figure is substantially lower than the figures forecast for the proposed housing project. Moreover, it is reasonable to expect that a majority of these vehicles would not be arriving during peak traffic hours, especially during the AM peak hours.

Factoring in the City's stated intention to avoid any significant increases in the current traffic flow, it is concluded that this proposed use would have an insignificant adverse impact on traffic conditions.

(3) Hawai`i Animal Import Center. In their May 22, 1997 Federal Register, USDA stated that "The closure of HAIC is not expected to have a significant impact on importers or other entities, large or small. Very few animals have been quarantined at the facility during the last two years."

(4) Board of Water Supply. The current Board of Water Supply (BWS) facilities will remain on the station property. The proposed action is not expected to have any impact on BWS facilities or maintenance activities in the project area.

(5) H-3 Interstate Viaduct. The Windward Viaduct of the Interstate H-3 passes through the Omega Station, at an elevation several hundred feet above ground level at some points. The H-3 construction access road utilized for construction vehicle access to the viaduct is expected to be returned to preconstruction conditions following completion of the H-3 project. The proposed action is not expected to have any impact on H-3 construction or use.

CHAPTER V

ENVIRONMENTAL IMPACTS OF ALTERNATIVES

1. No action alternative. This alternative is as follows: shut down operations and vacate the property, but take no physical actions (e.g., span lowering, site cleanups) to close the station.

The no action alternative would avoid the impacts inherent in the proposed action, all of which have been judged to insignificant and short-term in nature. However, as noted in Chapter III, USCG is mandated by several Federal and State laws and regulations to perform these closure projects before disposing of the property.

In addition, the consequences of no action would include the following:

a. ANTENNA. The antenna anchors and/or spans will wear out over time, which will cause the six 23,000-pound, 7000-foot-long spans to fall down to the valley floor. The most likely scenario involves one end of the span giving way, causing the span to swing down to the floor. In addition to the impact area (i.e., the area where the span first strikes the ground), the span's momentum will cause it to drag along the ground for a considerable length. Given the span's weight and momentum, the amount of destruction to structures and vegetation (and people) in its way is likely to be significant. As mentioned in Chapter II, the H-3 freeway is scheduled to open on December 1, 1997.

If the steel anchor A-frames were not removed, they would eventually fall over, creating a safety hazard. The A-frames are also coated with lead paint, which will eventually flake off. This represents a minimal, but easily avoidable impact.

b. HA`IKU STAIRS. If the Stairs are abandoned, and future occupants choose not to repair them, the Stairs will continue to rust out (i.e., oxidize into iron oxide), and eventually be overgrown with vegetation. The iron oxide would have a negligible environmental impact.

However, like the antenna spans, some sections of Stairs may fall off the ridge line from lack of maintenance before they rust out. The impact caused to vegetation below would depend on how high the sections fell from, and the type of vegetation they landed on (i.e., introduced versus native/rare/endangered species).

The Stairs are currently in an unsafe, dangerous condition; an accident can easily lead to serious injury or death. Their condition will only deteriorate with time. It is likely that people will attempt to climb the Stairs after station closure, when there are no longer Coast Guard personnel to monitor access.
If the Stairs are not repaired or removed, this very "attractive nuisance" would present a very serious safety hazard.

As discussed in Chapter IV, the Stairs are currently being evaluated for their historic significance, and that they may well be eligible for listing in the National Register of Historic Places. Moreover, the Omega Station as a whole may be eligible as a historic district.

Of the remaining structures of the Naval Radio Station, the Stairs hold as important a connection to the history of the site as the other major structure, the Transmitter Building. (Barton, 1997b). If the station and/or Stairs are determined eligible, and the Stairs were allowed to disintegrate into an unrecognizable/irreparable form, this would result in a significant adverse effect on the historic integrity of the overall site.

However, it will probably be many years before the Stairs disintegrate into such a state. If USCG does not restore the Stairs prior to excessing them to GSA, future landowners (including an interim use licensee) would have the opportunity to restore them. Accordingly, taking no action on the Stairs would have an insignificant adverse impact on this potentially eligible historic resource.

c. BUILDINGS: If the Transmitter/Helix building were not sealed, and its stairs leading to upper decks were not removed, this other "attractive nuisance" would entice people into potentially dangerous situations. If hazardous substances were not removed, their containers would eventually fail, causing these substances to escape into the environment.

The wooden Maintenance/Storage building (#25), with no one to maintain/monitor it, poses a fire hazard, which could spread to other parts of the valley. The steel, 114-foot tall counterweight tower, if not removed, will eventually fall over. The asbestos roof and electrical switch equipment on the ridge line Cable House and Microwave Building, respectively, if not removed, will eventually fail, causing hazardous substances to escape into the environment. The amount and type of substances represent a minimal, but easily avoidable impact.

d. UTILITIES. The proposed action basically involves no action (i.e., leaving utilities in place).

e. QUARANTINE STATION: Closing the Quarantine Station as proposed involves minimal activity. However, some specific actions are essential. Hazardous substances must be disposed of properly, or they will pose a risk to human health and the environment. Likewise, the station's cavitettes (septic tanks) and buildings, which potentially contain wastes from sick animals, must be properly cleaned.

f. ISSUE INTERIM USE LICENSE TO CITY AND COUNTY OF HONOLULU. No action (i.e., not issuing the license) would not lead to any environmental impact. The station property would remain vacant until GSA assigned it to a new owner.

Impacts avoided by not issuing the license are those that would result from the City's creation of a nature park/preserve; from providing office space to City and/or nonprofit agencies; and from using one building and parking lot at the Quarantine Station for staging visits to the Stairs. These impacts were determined in Chapter IV to be insignificant in nature.

g. NAVY DEBRIS AREAS: Again, impacts avoided are those that would result from cleaning up these areas; i.e., removal of approximately 300 cubic yards of contaminated soil. These impacts (e.g., soil erosion) were determined in Chapter IV to be negligible in nature.

However, the impacts from not taking action are potentially significant, and include elevated incidence of cancer, birth defects and other health effects from those persons with chronic exposure to the contaminated soil. Moreover, USCG is required by Federal and State law to clean up hazardous waste sites.

2. Return property to pre-Coast Guard conditions. This alternative would add the following work to the proposed action: remove everything associated with the Coast Guard Station except roads and underground utilities. Remove all Coast Guard controlled buildings within property lines, whether used or not. Remove concrete foundations of buildings and counterweight tower to two feet below grade. Remove concrete antenna anchors from the mountain ridges.

Removing the concrete buildings on the valley floor would be quite difficult, because they were built to withstand World War II-era 500 pound bombs. Demolition would generate large amounts of fugitive dust emissions, and probably a great deal of noise, but this would cause only insignificant, short-term impacts. Impacts would be more serious if the lead paint on the structures were not removed prior to demolition.

Removing the concrete buildings on the ridge line would be far more difficult, because of their remote, precarious location. Additionally, demolition work would have to be done by hand, in order to avoid damage to native/endangered plant species on the ridge line.

Removing the 8-foot deep concrete antenna anchors from the narrow mountain ridges may create an unstable condition on the ridge, and may impact on the native/endangered plant species around the anchors.

Removing the antenna ground plane would cause potentially significant impacts. Due to the extent of vegetation growth over
the 1100-foot-long buried ,ground radials, removal of the ground plane would virtually require complete stripping of vegetation from this 3,800,000 square foot area.

Disturbance of the vegetation cover will greatly increase the potential for erosion of sediment. The impacted area drains directly into He`eia Stream; in Ha`iku Valley, the high rainfall and potential for erosion of soils warrants concern for non-point source pollution impacts on the stream. Substantial effects on water quality and stream ecology would be expected without adequate erosion control measures.

The Ha`iku Valley drainage basin is drained by a network of three tributaries that join to form He`eia Stream (Figure 12. The stream flows 3.5 miles from the base of the Ko`olau Mountains in Ha`iku Valley, through the valley in a series of pool and riffle sequences, under Kahekili Highway, into He`eia Marsh, He`eia Fishpond, and finally into Kane`ohe Bay.

Although most perennial streams that cross Kahekili Highway have extensive concrete-lined channels east of the highway, He`eia Stream is an exception. Except for a relatively short 200-foot long trapezoidal concrete section just east of Kahekili Highway, and culverts under the highway, He`eia is left as a natural stream with a high degree of biological integrity. He`eia Stream is listed by the Hawai`i Stream Assessment Project (National Park Service, 1990) as one of only six streams on O`ahu with outstanding riparian resources. It is listed as a candidate stream for protection.

3. Alternatives to individual closure projects. Impacts from these alternatives are as follows:

(1) ANTENNA: Impacts from uncontrolled lowering of the spans would be the same significant ones as that discussed for the No Action alternative (Chapter V, Section 1.A). Additionally, as discussed in Section III.3,

uncontrolled lowering would cause at least a portion of the spans to land along the mountain walls. Those portion lying in inaccessible areas would be (a) abandoned; (b) hooked onto by a helicopter, and flown out; or (c) dragged down to the valley floor for cutting.

The only real environmental damage from abandonment would be the eventual failure of the 27 oil-filled insulators, each containing 3.5 gallons. The mineral oil in these insulators is composed of light napthenic hydrotreated distillates, which is a known carcinogen (cancer-causing substance). The only other problem with abandoning the spans, aside from aesthetics, are the safety hazards posed from tripping, having an unseen span get caught up in machinery, etc.

Dragging the spans down to the valley floor would result in an approximately 36" wide swath of vegetation removal (the width of the insulator rings), from the top of the ridge to the valley floor, and probably break the mineral oil-filled insulators. As discussed in Chapter IV, the upper half of the mountainside is dominated by native and rare vegetation; dragging the spans down would probably cause significant impacts.

Once the spans were dropped, they could be cut up in place, and lifted out by helicopter, rather than dragged out. This latter approach would be much less damaging, but may be quite difficult along the mountain slopes. Personnel may not be able to reach various portions of the span in order to cut it, and the helicopter may not be able to get close enough to hook onto it.

(2) Ha`iku Stairs: If USCG negotiations with City and County of Honolulu (CCH) to assume management of the Stairs are unsuccessful, the Stairs would most likely be removed, because of safety and legal issues.

Removal would involve using tools such as a saw or crowbar to release the 3' long anchor pins. Handrails and treads would probably be removed from the stairs frame, to lessen the weight. Individual components would then be hand-carried to several staging areas along the ridge line, where they would be hoisted out by helicopter.

If the Stairs were removed, the likely impacts are as follows:

(a) Lower (ridge line) Stairs. As with rehabilitation (Chapter IV), removal of this portion of the stairway should have only a limited impact on the vegetation. The only rare plant located here is Myrsine fosbergii, a species of concern. The plants are found in three locations along the stairway; all of the plants are located 6 to 10 feet from the stairway. As much of the vegetation should be left intact if the stairway is removed, to slow soil erosion and to revegetate the bare areas.

(b) Upper Stairs (between anchors). The 'ohi'a wet shrubland found along these sections contains a rich assortment of native species as well as several rare plants. Removal of the stairs may have significant impacts on the rare plants if not carefully supervised.
A botanist should be present when the work on this section of the stairway is being conducted. The areas with rare plants should be roped off and identified. If possible, no native plants should be cut or removed.
There is expected to be some soil loss through erosion if the Stairs are removed. One unknown is the amount of damage which would result from removal of the three-foot long spikes which anchor the Stairs; damage would be proportional to the effort required to remove them, after being in place for 42 years.

Keeping as much of the vegetation intact as possible on the steeply sloping portions should slow soil loss. The surrounding vegetation should more or less quickly cover over the areas now occupied by the metal stairs.
Of the remaining structures at the Naval Radio Station, the Stairs hold as important a connection to the history of the site as the other major structure, the Transmitter Building. Removal of the Stairs would eliminate the aspect of the site that most clearly and effectively associates the site with the innovative use of the natural topography of the valley, in order to create the radio system that was a vital component in the Pacific defense in World War II (Barton, 1997b). If the station and/or Stairs are determined eligible, their removal would have a significant adverse effect on the historic integrity of the overall site. This would be so, even though an overall net beneficial impact would accrue from removal of this dangerously unsafe structure.

(3) ISSUE INTERIM USE LICENSE TO CITY AND COUNTY OF HONOLULU. One alternative to issuing the license is to deny the City's request. Another alternative is to grant their request, but to restrict or deny some of the uses they have requested.

The impacts of denying the license are predominately those of safety. Having a responsible party occupy the property immediately upon the Coast Guard's departure would provide a strong presence against vandalism, arson, and unsafe use of the facilities by unauthorized personnel.

Another impact of denial is the public's loss of the use of the property as a nature park/preserve. These impacts are dealt with in the discussion on Ha`iku Stairs restoration (Chapter 4, section 6 [" Current and future land uses"]).

(4) NAVY DEBRIS AREAS: Other means of decontaminating the soil include solidification and bioremediation.

Solidification and disposal on-site would probably be the least expensive method of cleanup, but it is unlikely that HI DOH and US EPA would approve of its use. Solidification is normally approved only for remote sites where transportation costs for disposal are prohibitive. Approval of its use is also unlikely, given the station's potential use as a nature park/preserve.

Bioremediation of PCBs and benzo(a)pyrene is an experimental technology at this point; its effectiveness is still unknown. Moreover, the Lolekaa silty clay soil present at the site would make bioremediation even more problematic.

Another disadvantage to bioremediation is that it is a slow process (up to several years), requiring continual monitoring and maintenance. The area would have to be placed off-limits to the public during this time.

CHAPTER VI

AGENCIES AND PERSONS CONTACTED DURING EA PREPARATION

Federal

U.S. Department of Agriculture - Honolulu Office and Hawai`i Animal Import Center
U.S Fish and Wildlife Service

State

Department of Health
Department of Hawaiian Home Lands
Department of Land and Natural Resources
Office of Environmental Quality Control
Department of Business, Economic Development and Tourism
Office of State Planning
Department of Transportation
University of Hawaii Sea Grant College Program

City and County of Honolulu

Board of Water Supply
Corporation Counsel
Department of Land Utilization
Department of Parks and Recreation
Department of Public Works - Wastewater
Councilmember Steve Holmes

Individuals and Organizations

John Flanigan (Friends of Ha`iku Stairs)
Mark Hamasaki
Hawai`i Nature Center
Kane`ohe Neighborhood Board
William Sager (Conservation Council for Hawaii)
Windward Sun Press

CHAPTER VII

REFERENCES

Alexander and Baldwin. 1913. "Map of the He`eia". Bishop Estate Collection No. 5083 Kamehameha Schools, Bishop Estate, Kawaihao Plaza, Honolulu.

Allen, J., M. Riford, T. M. Bennett, G. Murakami, and M. Kelly 1987. Five Upland `Ili: Archaeological and Historical Investigations in the Kane`ohe Interchange, Interstate Highway H-3, Island of O`ahu. Departmental Report Series B7-1. Dept. Of Anthropology, Bishop Museum.

Barton, D., Architectural Historian, Ogden Environmental and Energy Services, 1997. End of Field Summary Letter to Ms. Elaine Tamaye, Edward K. Noda and Associates, June 6, 1997.

Barton, D., Architectural Historian, Ogden Environmental and Energy Services, 1997. E-mail correspondence to Mr. Jay Silberman, USCG. June 16, 1997.

Bruner, P. 1993. Survey of the Avifauna and Feral Animals at the U.S. Coast Guard Ha`iku Valley Omega Station, Kaneohe, Oahu. March 29, 1993.

Cleghorn, P.L., and Rogers-Joudane, E., 1976. Archaeological Reconnaisance Survey of Proposed Interstate H-3: Halekou Interchange to Windward Portal of Koolau Tunnel. MS in Dept. Anthropology, Bishop Museum, Honolulu.

Char, W. 1997. Char and Associates. Botanical Survey and Assessment, Omega Station, Island of Oahu, Ha`iku Valley, Kaneohe, Oahu. Draft Report. June 24, 1997.

Cottrell, C.A., Program Manager, Trail and Access Program, Hawai`i Department of Land and Natural Resources. 1997. Telephone conversation with Ms. Karin Koga, USCG. May 29, 1997.

Culliney, J. L., Associate Professor of Biology, Hawaii Loa College, 1987. Letter to Friends of Ha`iku Stairs. October 2, 1987.

Cunningham, W., Representative, Kaneohe Neighborhood Board. 1997. Telephone conversation with Ms. Karin Koga, USCG. June 6, 1997.

Department of Land and Natural Resources, State of Hawaii, 1991, Title 13, Chapter 2: Conservation Districts.

Devaney, D.M.; Kelly, M.; Lee, P.J.; Motteler, L.S., 1982: Kane`ohe: A History of Change. Bess Press. Honolulu.

Dye, T.S., 1977. Archaeological Phase I Survey of the Windward Portion of Proposed Interstate H-3: Halekou Interchange to Windward Portal of Koolau Tunnel, Oahu. MS in Dept. Anthropology, Bishop Museum, Honolulu.

Gagne, W.C., Education Specialist in Natural History, Education Department, Bishop Museum. 1987. Letter to Friends of Ha`iku Stairs. September 28, 1987.

Grannis, B. USCG, April 1993. Unpublished Draft Environmental Impact Statement, U.S. Coast Guard Family Housing, Omega Station, Oahu, Hawaii.

Gould, G, Representative, Kaneohe Neighborhood Board. 1997. Telephone conversation with Ms. Karin Koga, USCG. June 6, 1997.

Handy, E. S. and E.G. Handy. 1972. Native Planters in Old Hawaii: Their life, lore and environment. Bishop Mus. Bull. 233. Honolulu.

Harris, J. Mayor, City and County of Honolulu. Letter to Rear Admiral Thomas Collins, Commander, Fourteenth Coast Guard District, dated May 9, 1997.

Hildebrand, T., Planner, Department of Parks and Recreation, City and County of Honolulu, 1997. E-mail correspondence to Mr. Jay Silberman, USCG. May 29, 1997.

Kamakau, S. M. 1992. Ruling Chiefs of Hawaii, revised edition. Kamehameha Schools Press, Honolulu.

Kirch, P. V. 1977. "Valley Agricultural Systems in Prehistoric Hawaii: An Archaeological Consideration." Asian Perspectives 20(2):246-280

McAllister, J.G., 1933. Archaeology of Oahu. Bishop Museum Bulletin No. 104, Honolulu, Bishop Museum Press.

McDermott, M., J. Winieski, R. Chiogioji, L. Pyle, and J. Hammatt, 1997. Archaeological Inventory Survey of Phase I of the United States Coast Guard Omega Transmission Station, Ha`iku Valley, He`eia Ahupua`a, Ko`olaupoko, Island of O'ahu, (TMK 4-6-15). Draft Report. June 1997.

Miller, S.E., 1997. Report on Snail Surveys at the Summit Ridge of Ha`iku Valley. Pacific Islands Office, U.S. Fish and Wildlife Service. February 4, 1997.

Morrow, J.W., 1993. Air Quality Impact Report, USCG Ha`iku Valley Housing Project. June 7, 1993. Prepared for USCG by J.W. Morrow, Environmental Management Consultant. Report is included in Volume 2 of this EIS.

National Park Service (NPS), Hawaii Cooperative Park Service Unit, 1990. Hawaii Stream Assessment; A Preliminary Appraisal of Hawaii's Stream Resources. Prepared for the State of Hawaii Commission on Water Resource Management. Report R84, 294pp.

Riley, T.J. 1975. "Survey and Excavation of the Aboriginal Agricultural System." IN Patrick V. Kirch and M. Kelly, eds., Prehistory and Ecology in a Windward Hawaiian Valley: Halawa Valley, Molokai, pp. 79-115. Pacific Anthropological Records No. 24. Honolulu: Dept. Anthropology, Bernice P. Bishop Museum.

Smith, R.P. Field Supervisor, Pacific Islands Office, U.S. Fish and Wildlife Service, written communication to to Commander J.T. Peck, USCG Civil Engineering Unit, dated January 12, 1993.

Smith, W.S., Director, Cooperative National Park Resources Studies Unit, University of Hawaii. 1987. Letter to Friends of Ha`iku Stairs. October 9, 1987.

Stearns, H.T., and Vaksvik, K.N., Hawaii Division of Hydrography. 1935. Bulletin 1: Geology and Ground Water Resources of the Island of O'ahu, Hawaii. May.

Sterling, E.; and Summers, C., 1978. Sites of Oahu. Honolulu: Bishop Museum Press.

U.S. Army Corps of Engineers, 1993a. "Hydraulic Study and Drainage and Erosion Control Plan", prepared for USCG Civil Engineering Unit, Honolulu, July 1993, Appendix A.

U.S. Army Corps of Engineers, 1993b. "Hydrology Report", prepared for USCG Civil Engineering Unit, Honolulu, July 1993, Appendix B.

U.S. Army Corps of Engineers, 1993c. "An Assessment of the Water Quality and Wildlife Impacts in the He'eia Watershed from Construction of the U.S. Coast Guard Proposed Housing Project at the Omega Station", prepared for USCG Civil Engineering Unit, Honolulu, July 1993, Appendix C.

U.S. Army Corps of Engineers, 1993d. "Traffic Study for USCG Omega Station Family Housing", prepared for USCG Civil Engineering Unit, Honolulu, July 1993, Appendix D.

U.S. Department of Agriculture, Soil Conservation Service, 1982. Erosion and Sediment Control, Guide for Hawaii. Honolulu, Hawaii.

U.S. Dept. of Transportation, Federal Highway Administration and State of Hawaii Department of Transportation, 1987. Interstate Route H-3 Halawa to Halekou Interchange, Final Third Supplement to the Interstate Route H-3 Environmental Impact Statement

Webster, W. 1851 Plan of part of the Land of Heeia in Koolaupoko Oahu, the Property of A. Paki Esq. RM15.

Williams, S., Senior Archaeologist, Ogden Environmental and Energy Services, 1993a. Field Completion Letter Report to Mr. Farley K. Watanabe, U.S. Army Engineer Division, Pacific Ocean, CEPOD-ED-E. dated March 4, 1993.

Williams, S., Senior Archaeologist, Ogden Environmental and Energy Services, 1993b. Archaeological Reconnaissance Survey and Limited Subsurface Testing for Proposed Housing Construction, U.S. Coast Guard Omega Transmitter Site He'eia, Koolaupoko District, Island of O'ahu, Hawaii (TMK 4-6-15). Draft Final Report. March 1993.

Williams, S.S., 1991. Preliminary Report: The Archaeology of Ha`iku Valley, He`eia Ahupua`a, Ko`olau Poko District, O`ahu Island. MS. in Dept Anthropology, Bishop Museum, Honolulu.

Williams, S.S., 1992. Ha`iku Omega Station Inventory Survey, Preliminary Report About Parcel A. Pacific Archaeological Research Consultants. Eugene, Oregon.

Williams, S.S., 1994. Archaeological Reconnaissance Survey and Limited Testing for Proposed Sites of Construction Pond, Installation Recreation Areas, Animal Quarantine Station, and Road Access Alternatives for Family Housing Construction, U.S. Coast Guard Omega Transmitter Site He`eia, Ko`olau Poko District Island of O`ahu, Hawai`I (TMK 4-6-15). Ogden Environmental and Energy Services Co., Inc. Honolulu.

Williams, S.S., and Nees, R.C., 1994. Mo`olelo Ha`iku: Archaeological and Historical Investigations for the Interstate Highway H-3 Within Ha`iku Valley, He`eia Ahupua`a, Ko`olau Poko District, Island of O`ahu. MS. in Applied Research Group, Bishop Museum, Honolulu.

Woodbury, D.O., 1946. Builders for Battle. New York, E.P. Dutton and Co.

Woodward Clyde Consultants, 1996. Post Excavation Environmental Sampling Investigation, Ha`iku Omega Station, Debris Areas 2 and 6, Kaneohe, Oahu, Hawaii. Prepared for USCG Civil Engineering Unit. November 1996.

Draft Report

Historic Preservation Survey and Nomination to the National Register of Historic Places of the U.S. Coast Guard Omega Station Located at Haiku, Kaneohe, O`ahu Island, Hawai`i.

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Draft Report
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Nomination to the National Register of Historic Places
of the U.S. Coast Guard Omega Station
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EXECUTIVE SUMMARY

The U.S. Coast Guard is preparing for closure of the U.S. Coast Guard Omega Station located in Haiku, Kaneohe, on the Island of Oahu. This closure initiated the preparation of National Register of Historic Places nomination forms for five structures within the Omega Station. The station was originally built during World War II as the Naval Radio Station at Haiku Valley, a low frequency radio station capable of sending transmissions as far as the bottom of Tokyo Harbor.

This report first summarizes the historical data of the wartime and post-war construction era and includes an architectural description of the five structures. The structures combined together form a unit that is a historic representation of World War II efforts in the Pacific and the innovative design and construction of the station. A completed district nomination to the National Register of Historic Places, based on Criterion A, historical association with World War II and radio technology, and Criterion C, distinctive architecture and engineering of a Naval Radio Station unique to the Cold War period.

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INTRODUCTION

This report presents the results of historical preservation survey and assessment of five structures located at the Haiku Coast Guard Omega Station to the National Register of Historic Places and preparation of the National Register of Historic Places form. This project was conducted by Ogden Environmental and Energy Services company, In

. (Ogden) under contract DACA83-96-D-0008, Delivery Order 0005, with E.K. Noda and Associates, Inc. Honolulu, Hawaii.

The survey and assessment of five structures at the Haiku Coast Guard Omega Station include the Transmitter Building, the Helix Building (Building #6), the Commercial Power Building (Building #9), and the nameplace concrete retaining wall. The research and nomination form are in compliance with the National Historic Preservation Act of 1966 and are being undertaken in order to afford adequate protection of cultural resources during the upcoming closure of the Omega Station.

Dot Barton is the principal investigator for this project, and Scott Williams is the Project Manager. Field work and archival research was conducted from May 19 to June 6, 1997.

GOALS

Research initially focused on assessing the construction of the five structures, their renovations, and use. Part of this process was research in order to obtain original historic engineering and construction information. The Naval Radio Station at Haiku Valley is a unique example of the resourceful technology and engineering that was part of the Pacific offense during World War II. The radio station used the natural topography as the means to create a "tower" higher than technology could construct at that time. The station continued on as part of radio and engineering history during the 1950s, when experimentation began for an Omega station, a complete and cost effective global navigational aid, and in the 1970s, when it started official operation as one of the first of eight Omega stations in the world (Figure 1).

The goals of this project were threefold. First was documentation of the five structures construction, their renovation, and present use and condition. Second was collection of historical and architectural/engineering information concerning the structures and the development of the

Figure 1. Map of Haiku Valley Radio Station Area. From U.S.G.S. 1983 Kaneohe Quadrangle Map.

Haiku Valley Naval Radio Station and U.S. Coast Guard Omega Station. Finally, this project culminated in completion of a district nomination form for the National Register of Historic Places.

METHODS AND PROCEDURES

In preparation for both the documentation of the five structures and the nomination to the National Register of Historic Places, archival research was conducted at the following locations in Hawaii: U.S. Coast Guard Environmental Office; U.S. Coast Guard Omega Station; PACDIV Real Estate Office, Plan Files, and Naval Facilities Engineering Command Library; Pearl Harbor Navy Base Library; Bishop Museum Archives; Hamilton Library Government Documents, Newspaper Archives, Hawaiian Collection, Graduate Library, and Video Collection; Naval Public Works Center; Hawaii State Library; Kaneohe Public Library; Marine Corps Base Hawaii Library; and the Ft. DeRussy Army Museum Archives. Outside of Hawaii archival research was conducted at: the National Archives and Records at San Bruno, CA.; the Navy Historical Center, Washington D.C.; and the Construction Battalion Center, Port Heuneme, CA. Additional information was provided from interviews with Ronald Ching, previous Communication-Electronics Facilities Coordination Officer during the Coast Guard alterations; Phil Akwa, Southern California Engineering Co; Jeff Dodge, U.S. Navy Historic Preservation Specialist; Paul Wainwright, retired Vice President, Hawaiian Dredging Co; and Commanding Officer Paul Zerby, U.S. Coast Guard Omega Station.

FIELD WORK

Field Work was conducted during May and June of 1997. The field work consisted of an initial site survey at the ridgeline of Haiku via helicopter. Further site surveys were carried out in Haiku Valley and included visual inspection of the sites for photographic recordation and documentation of structural integrity, and documentation of historic association and architectural/engineering specifications, as necessary, for preparation of the nomination forms.

PHOTOGRAPHIC DOCUMENTATION

A variety of photographic documentation is included in this report. The majority of the photographic documentation is thirty-five millimeter black and white photography which is included with the written historical documentation. Eight color thirty five millimeter

photographs are included along with the written documentation also. Thirty-five millimeter black and white photography is used on the historic resource surveys and included with the nomination form to the National Register of Historic Places. Copies of 8x10 black and white photographs of the original construction are included with the permission of the U.S. Coast Guard. Photographs will be submitted with the final report once review comments and subsequent revisions have been completed.

PHOTOGRAPHS, WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Part I. Historical Data

World War II- U.S. Navy

The Naval Radio Station at Haiku Valley began construction in 1942. The Naval Radio Station was built in a horseshoe-shaped valley, using the topography of the surrounding cliffs, the most innovative technology of the time, and sheer determination to create an antenna system that reached almost 3,000 feet (Figure 2). This unique design and construction of the Naval Radio Station are a testament to the lengths the military and civilian workers reached under the pressure of war. The radio station at Haiku Valley satisfied two requirements of the war. It allowed for long range transmission and was built in a position that allowed for excellent natural protection. "The Haiku Radio project was completed in December of 1943and over the 200 KW Alexanderson Alternator at Haiku messages to merchant ships, weather reports to naval ships and despatches to submarines were broadcast" (Honolulu Nav Comm Sta, 1960: 5).

There were few places in America that felt the harsh reality and understood the urgency of the war more than Hawaii. The U.S. Navy had begun preparations in Hawaii for the war in 1939. Prior to that time there were no separate Atlantic and Pacific fleets and Pearl Harbor was a small unit with little significance. After the outbreak of war in Europe in 1939 President Roosevelt declared a state of National Emergency and the Navy began to send part of its fleet to Pearl Harbor for the purpose of deterring the Japanese' movement in the Dutch East Indies (Allen, 1950: 227).

The positioning of Naval forces to Hawaii began as a temporary movement but by the summer of 1940 the chief of Naval Operations determined the fleet would remain indefinitely. On December 7, 1941, the Naval fleet at Pearl Harbor fell under attack. Overnight the islands of Hawaii were transformed. The people were fearful of future attacks, the military struggled to repair the damage from the Dec. 7th bomb raid, and rapidly began to prepare itself as the base

center of America's World War II Pacific military efforts. The construction was rapid and widespread on the island of

Figure 2. Sketch of Possible Radio Layout by Lt. Butzine, May 25, 1942 (From National Archives and Records, San Bruno, California.

Oahu. By the time the Japanese government surrendered to the allied forces in 1945, the affiliated Naval bases in Hawaii comprised the most extensive defense installation in the world.

Naval radio communication played a vital role in World War II efforts and Hawaii's defensive installation. The wireless was invented by Marconi in the late nineteenth century and the Navy was quick to make use of the new technology. The basic wireless invention went through a rapidevolution between the first and second World Wars. By 1940, the Naval communication system included technology capable of high, medium, and low frequencies that could send signals out to all corners of the globe (U.S. Dept. Navy, 1947:401).

In Hawaii, Navy communications began in September, 1916, at Hospital Point, Pearl Harbor. In 1920 a receiver station was constructed at Wailupe. At the time it was considered one of the largest radio receivers in the world and could receive six messages simultaneously. In 1931 land was bought in Lualualei Valley for the purpose of constructing a new transmitter facility. In 1936 the Lualualei Valley transmitter was activated (HABS, 1997:6).

With the outbreak of World War II, radio communication stations in Hawaii were built as rapidly as all other military operations that combined to make the Pacific offensive. The result was an overseas radio facility program that was advanced in proportion and technology above other area installations. The Army had three major and several minor radio installations. The Navy's radio station installations grew rapidly. Along with the previously erected Naval station at Lualualei Valley was a naval communications station at Wahiawa, near Schofield Barracks. The station was commissioned on December 21, 1941, and grew to be one of the largest Naval radio stations in the world at that time (Allen, 1950: 226).

However, the Naval fleet expansion into the Pacific created communication needs that were not yet being met. The Submarine Base at Pearl Harbor, established in 1919, found itself at the forefront of war operations for the Pacific during World War II. As the submarines left the harbor and ventured into Japanese waters there was an exigency for communication (Allen, 1950: 225).

> One more item was needed to give the Pacific fleet full striking power: absolute certain means of radio communications with headquarters at Pearl. The new receiving station at Wahiawa amply met these requirements but the main Navy transmitter at Lualualei was not powerful enough for an all-ocean war. A giant sending station must be built that would reach not only to the waters of Australia and the Indian Ocean but also to every Allied submarine-submerged-especially if she were on the bottom of Tokyo harbor (Woodbury, 1946:349).

It was deemed that the 600 foot tower at Lualualei was not powerful enough to send radio waves of the length necessary for communication in the Pacific. A system was needed that could send messages to the bottom of Tokyo harbor. The initial problem was how to build a tower higher than 600 feet. The Navy believed it possible to use the natural geography to create the necessary height. In Java there had been successful experimentation by the Dutch of such a facility using cables strung between two mountain peaks (Woodbury, 1946: 350).

The Navy quickly decided to build a long range low frequency radio station in Hawaii using this type of natural resource. The station was highly experimental and also highly classified. The station would be able to obtain long range signals because it would use a very low frequency. The huge, high powered antennas would send out stable, long waves that were able to travel long distances and penetrate intrusions, such as mountains and water. The system would also require a transmitter building at the bottom of the valley, placement of anchors at the ridge of the cliffs, wires running from the anchors to the transmitter, and a copper grid system in the valley to assist in conducting the signals.

Contractors, Pacific Naval Air Bases

How to make this low frequency radio system become reality was one of the most complicated jobs in the Pacific during the war. The project was one of hundreds that were completed under the coordination and leadership of the Pacific Naval Air Base (PNAB). The PNAB was initiated in the 1930s as turmoil was mounting in the Pacific. At that time, the mood of America was one of caution. People were very hesitant to become involved in another war, particularly if America was not directly involved. However, in 1938, there were also many officers and political leaders that sensed the seriousness of the rising turmoil in China and the growing interest of the Japanese in the Pacific, including Hawaii. These individuals, including Charles Edison as the Assistant Secretary of the Navy and Rear Admiral Ben Moreell, the head of the Bureau of Yards and Docks, met with President Roosevelt. Working towards the same goal, they slowly and stubbornly inched towards a proposal for Pacific Naval Bases (Woodbury, 1946: 65).

At this point in time the proposal for the Pacific Naval Air Bases was being limited to defensive measures. In January of 1939 the Naval Affairs Committee opened hearings on the specifics of the proposed new Naval Bases. During this hearing Admiral Moreell laid out the exact method that would be used in building the bases. The Admiral proposed " . . . the vital issue of using private contractors to do the work in the pacific. There would be no bidding on the island contracts. The Navy would choose the contractors it believed competent to do pioneering work

under stress of emergency, then pay them on a cost-plus-fixed fee basis. This would be the first time that the Government had ever used this method on a big job" (Woodbury, 1946: 52).

This innovation constituted the Contractors, Pacific Naval Air Base (CPNAB). In the hearings of 1939 were stated several points that convinced skeptics of the decision to use this system of CPNAB. First, that private contractors would be used because the use of civil service engineers was too slow. Second, the contracts were awarded to large firms because small ones did not have the experience or talent for this large scale operation. Lastly, contracts should be paid a fixed fee instead of the conventional percentage of cost because it does not benefit the contractor to spend money but instead rewards him for not spending money (Woodbury, 1946:59). On May 25th, 1939 Congress passed an appropriation bill providing 63 million dollars for Naval Air Bases. In the near future the unique and innovative organization of the CPNAB set forth by Admiral Moreell would prove indispensable for expeditious construction in Hawaii after the 1941 bombing of Pearl Harbor (Woodbury, 1946: 55).

Over one hundred firms applied to be the Contractors used for the Pacific Naval Bases. After much deliberation and intensive screening three companies were determined to be the strongest competitors having knowledge, experience, and imagination. The original contractors were Turner Construction Company of New York, the Raymond Pile Company of New York, and the Hawaiian Dredging Company. On August 9th the contract (No y-3550) was approved and the Contractors began work. Logistics were quickly decided upon and offices began to function. One of the first tasks was building the Operation Office in Alameda. This office would be responsible for coordinating all of the purchasing and shipping of supplies (Woodbury, 1946:68).

By the winter of 1940 Congress began to understand the full impact of the Pacific turmoil and approved a bill that included $31 million specifically for the Pacific island bases. With this increase in appropriations the Contractors also needed to expand their resources and invited in two new private companies, the Morrison Knudsen Company, Inc. and the J.H. Pomeroy and Company, Inc. On July 11th, 1940, a new bill was approved (Woodbury, 1946:140). Over the next three years the contracts given the CPNAB grew to be the largest contractual award in history. When the contract was finally terminated, December 31, 1943, the total construction and cost amount of their contracts was over $692,000,000 (U.S. Dept. Navy, 1946:139).

The CPNAB had an interest in Haiku Valley as soon as the war broke out. Workers hiked up the back side of the cliffs, from the Red Hill side, soon after the attack on Pearl Harbor. The men

that reached the ridgeline were pondering the possibilities and problems of construction at the site. In particular they questioned how the wires would be brought to the top of the ridge from the Valley side. More to the point, how might the workers themselves reach the top of the ridge (Wainwright, 1997). The contractors did not reach any definitive conclusions but very quickly the prospects of a radio station in Haiku Valley took on a demanding nature and immediate decisions began to be made about the construction as the plans for the Pacific Naval Air Bases took on an offensive position.

Construction at Haiku Valley

The construction of the Naval Radio Station at Haiku Valley was one of the most complex and perplexing jobs of the Pacific offensive. The facility was classified top secret and there was no discussion with the Army or the operating committee of the Navy. There was no real model to follow for engineering construction, the terrain was extremely rugged and often dangerous to work in, and they were working under the pressures and trials of the war racked island.

Early in 1942 the proposal was headed by Commander Hord, Radio Materials Officer at CINCPAC; BuDocks (Bureau of Yards and Docks) engineers, Lt. Commander R.M. Belt, Lt. Butzine, and Lt. Thatcher, engineers of the Radio Corporation of America, including Mr. McKesson; and the New York designing firm of Gibbs and Hill (Woodbury, 1946:349). The project was a result of extensive combined efforts.

> Drawings were prepared by the District Public Works Design Section, and by the contractors' design department. Mountain-top anchorage, method of raising and lowering the aerial systems, and layout of roads and trails were designed by the contractors. The aerial system, the antenna ground system, the transmission lines for carrying radio-frequency power from transmitter to antenna and ground system, and the transmitter layout (including suggestions for main and auxiliary building layouts) were designed by R.C.A. communications, Inc., in connection with their order to furnish radio-installation material and field-engineer supervision on installation. R.M. Towill, of Honolulu, was employed to make preliminary site surveys" (U.S. Dept. Navy, 1944: A-816).

Certain portions of the work was later completed by construction battalion forces including "installation of the 600-kw diesel standby generator in the bombproof transmitter building, installaioin of several poles on the transmitter building on the Pali summit, and installaiton of a short length of underground cable" (U.S. Dept. Navy, A-829; 1944).

The construction was difficult due not only to the sharp terrain but also due to extra pressures created by the war situation. Materials and labor were difficult to come by. "Before the

Japanese attack, all barracks were constructed of reinforced concrete, but after the outbreak of war all personnel facilities were built of wood, to conserve critical materials" (U.S. Dept. Navy, 1946:139). This was clearly the case at the Naval Radio Station at Haiku Valley. The barracks, mess hall, and other basic structures were of frame construction. Generally the most important buildings, those vital to the successful transmission of long range messages, were constructed of reinforced concrete. These were the bomb-proof transmitter building, helix building, intra-island communication transmission building, and the commercial electric supply building. On the island tensions rose as the need for rapid construction increased and supplies were limited. Often when supplies did arrive they were in poor condition and further time was needed to repair them.

Skilled workers were in demand because of the high volume work load as the island scrambled to not only repair damage but also to build a stronger defense (U.S. Dept. Navy, 1947:120). One engineer described the atmosphere of the building industry during early 1943.

> We had airfields to build, we had ammunition storage to build, war storage for gasoline on five different islands. Every damn thing was important, and one job would be hot today and probably another job hotter tomorrow, depending on the using agency putting pressure on a certain job . . . We were trying to do three year's work in one year, under difficult circumstances, and I think everyone did their darndest (U.S. Dept. Navy, 1947:140).

Along with the shortage of workers and materials there was also the heightened stress factor in Hawaii following the trauma of the attack on Pearl Harbor December 7, 1941. The community was struggling with the tension of living under martial law including black outs, curfews, and barb-wire strung along the beaches.

The choice of Haiku Valley was based on its topography. In order to build the facility a site was needed that had two mountain walls rising as vertically as possible, both a similar height over 2,000 feet, and with flat land in between. By studying a Coast and Geodetic map it was determined that the walls of Haiku Valley eroded into a series of cliffs like in an amphitheater open towards the ocean, would be ideal. The valley was covered with dense vegetation and large lava rocks. Huge twisted hau trees were tightly knit throughout the valley. Axes were used to chop through the hau trees as the first expeditions were made though the valley (Woodbury, 1946:350).

Beyond clearing the valley, the largest problem facing the construction of the radio station was finding a way to send men to the top of the cliffs. The cliffs that semi-encircle the valley range between 1,800 and 2,850 feet. In many places the cliffs rise vertically at a 90 degree angle. To

further add to the problems of scaling was the fact that the dirt was often either crumbly lava or was muddy and unstable from the high amount of rain and fog.

The contractors had considered sending back to the mainland for professional high-scalers when it was brought to their attention that two such high-scalers were working on another tough military project in nearby Red Hill. The two men, Bill Adams and Louis Otto, under the leadership of rigger Ray Cotherman, were known for their fierce determination and courage in conquering the heights. They began their climb up the steep slopes with one coil of rope, a rock pick-sledge hammer, and some three foot steel pins (Woodbury, 1946:356).

The story of their ascent and the construction that they opened the door to has been documented in David O. Woodbury's book *Builders for Battle* and magazines such as Reader's Digest due to the harrowing nature of the work (*Honolulu Star Bulletin*, October 7, 1950). The climbers began up the south, or Pali, side of the valley. The two men worked their way up the steep rock by driving in one spike, standing on it and driving in another, attaching the rope to that spike and then pulling themselves up to drive in another spike. When the spikes were used up for the day they returned to the bottom and began again the next day. It took Adams and Otto 21 days before they reached the top. What the two found was that the top of the cliffs were, in effect, a 'razor top'. Nowhere was the top more than 12 feet wide and in most areas it was 4 to 5 feet wide (Woodbury, 1946:356).

The experts continued to make design suggestions as the project progressed. The waging war was evident in the incoming ideas. There was a constant urgency for completion and also references in planning memos to a lack of materials due to the enormous amount of construction occurring in the islands and the confusion of obtaining items from the mainland, where the volume of incoming orders was overwhelming (Woodbury, 1946:74).

During this time plans were being made for the construction and design of the facility. On May 14, 1942, a summary of cost was written by the five members of CPNAB for an estimate of a radio transmitting station. The estimate contained a detailed listing for the transmitter building which included the cost for clearing the site, 850 cubic yards of concrete and 136,550 pounds of reinforced steel to construct the bomb-proof structure. It also included the cost of installing a 10 ton crane (CPNAB, Estimate, 1942). This crane currently remains in place at the transmitter building at the Omega Station at Haiku Valley.

The estimate for the design and construction of the antenna's anchors included costs for cableways to the ridges, lateral transport along the ridges, hoists and hoist houses, rigging gear, special tools, excavation and rock trimming, and a large sum for contingencies. This initial estimate attempted to prepare for the ability to make full use of the radio station as soon as possible. It allowed for not only the construction of the transmitter building and cableways but also telephone installation, roads, a fence, topographic survey, and quarters for 35 men. The equipment would be shipped on the mainland by railroad freight to California, by ocean freight to Hawaii, by truck from Honolulu to the site, placed in storage at the site, and it was planned that guards would be hired to protect the materials. The total estimate for the transmitter building was $598,300 and included 10.24% for accident insurance and taxes, 20% for the job overhead, 5% for the operating base office in Alameda, and a 5% fee for the contractors (CPNAB, Estimate,1942).

On May 25, 1942, the valley was sketched out by Lt. Butzine (Butzine, 1942). The sketch showed the land area that the Navy hoped to lease for the station in order to 'stretch aerial wires'. After some study, on June 11, 1942, BuDocks authorized acquisition of the land instead of leasing the area, with a decision that the land would be leased temporarily in order that construction on the radio station could begin as soon as possible (PACDIV:9). It was not uncommon for months to go by before legal acquisitions were made during the time of the outbreak of the war.

Lt. Butzine also noted on his 1942 rendering of Haiku Valley and its proposed aerials:

> There has been no decision to date of the final locations of Aerials. BuDocks has recommended an overall spread of 1700 feet but the Officer in Charge has recommended that the maximum spread not exceed 1200 feet to simplify construction. It is essential to construct small helix houses under the aerials as well as installing certain ground and telephone poles (Butzine,1942).

This early sketch indicated both options of placements of aerials on the ridges, 1200 and 1700 feet apart (Figure 3). It also placed four helix houses near the center of the valley, one for each of the cables, a transmitter building at the east of the helix houses near the entrance to the valley, and a building that would serve as quarters for 35 men, also near the entrance and the transmitter (Butzine, 1942).

Over the next months the Contractors, PNAB regularly corresponded with the R.C.A. engineers in New York. Due to the fact that the project was experimental all aspects of the construction

were up for revision as the combined efforts of the workers resulted in innovative solutions to handle each new problem as it arose. On June 23, 1942, the Plant Design Superintendent, J.L. Finch from R.C.A. Communications, Inc. wrote to the CPNAB regarding further specifics of the anchor and

Figure 3. Sketch of Possible Radio Layout by Lt. Butzine, May 25, 1942. From National Archives and Records, San Bruno, California.

aerial placement. At this point R.C.A. was basing its information on photographs and maps they had been sent on May 19, 1942, and a field representative they had in Hawaii.

> The serial system is to consist of four cables roughly parallel and strung between mountain tops in a northwesterly-southeasterly direction and with down leads hung from a point near the center of each. The northwest end anchorages are to be located on a ridge shown on enclosure C having an elevation of slightly over 2500 feet and with a length of about 630 feet in a northeasterly southwesterly direction. The Southeast end anchorages are to be located with two of them straddling the summit named "Puu Keahiakahoe" with two then to have an elevation of slightly above 2750 feet and the other two on a step along the ridge in a northeasterly direction from the summit and shown to have an elevation slightly above 2450 feet.
>
> Numbering these cables from the northeast, according to the present plan the northwest end anchorages will be spaced as follow:-between No.1 and No.2 100 feet, between No.2 and No. 3 400 feet and between No.3 and No.4 100 feet. Similarly at the southeast end the anchorages will be spaced as follows:-between No.1 and No.2 100 feet, between No.2 and No.3 700 feet and between No.3 and No.4 100 feet (Finch 1942:1).

These R.C.A. measurements would make the aerial span only 900 feet at its widest, well within the recommended 1200 foot length. In the same correspondence there were specific discussions of thetype of steel wires to be used and the positioning of the insulators, downleads, and counterweight placements (Finch 1942:2) The general idea of the plan was followed although the specifics changed during the construction.

On August 4, 1942, R.C.A. wrote the Bureau of Ships a letter regarding the measurements of the transmitter room. They recommended a "possible decrease in the height of the transmitter room to 21 feet and in the height of the coil room to 15 feet (R.C.A., 1942:1). It appears from this correspondence that it was determined that the helix room and the transmitter room would be in the same building instead of the prior proposal of four helix buildings that would have been under each antenna cable. By October, 1942, the correspondence between Finch and CPNAB reflects a progression in the construction as it was more concerned with details, such as the specifics for duct trenches and trench cover details.

While engineering ideas progressed many workers were continuing to solve the problem of access to the cliffs, necessary to build the anchors. First, simple sections of ladders were brought up along the south side of the valley and attached to spikes in the mountain. The workers called this a "sissies' climb" and with it the first group of men could gain access to the ridge and search for the proper placement of the aerials and research building conditions (Woodbury 1946:356).

Access was found to the North Ridge by the use of a local pathway that approached the rim from the opposite side of the valley, the Red Hill approach. Apparently the pathway had been built earlier by the Civilian Conservation Corps, a group organized by the New Deal government to create jobs for young men. It was used both by hikers and bikers up till the time of construction of the radio station (*Honolulu Star Bulletin*, Oct. 7, 1950). Due to the highly classified status of the project the Navy had not notified the Army, the territorial board of agriculture and forestry, or any other relevant parties. Upon discovering that civilians were using the trail and observing the construction, action was taken to limit use of the trail strictly for Naval construction purposes (*Honolulu Star Bulletin*, Oct. 7,1950). Use of the back trail meant that there was no immediate need for scaling the cliffs and construction of stairs on the north valley cliffs, but a round trip using the back trail still required 23 hours.

Though delayed by week-long bouts of fog, engineers studied the rim and obtained distance and altitude information for the aerials. Geologists studied the mountain and were relieved to find that the muddy exterior and crumbly base were covering a solid foundation for the anchors. This was of particular concern because the five proposed anchors would be supporting a pull of 25,000 pounds each. A letter dated May 19, 1942 stated:

> "The first 8 inches were black humus; the next 3 feet were a red crumbly volcanic conglomerate, and the last foot was grey rock and earth partially decomposed. It is believed that the ridge formations are composed of hard lava rock and conglomerate masses under a covering of humus and desntegrated material. It is believed that anchorages of expansion bolts bored into the rock, such as used in hard granite walls, would hold, due to the broken texture of the rock . . . "(U.S. Dept. Navy, 1944: A-818).

It was determined that they would not use the standard procedure used in stone of expansion bolts but instead would use concrete anchors (Woodbury, 1946:356).

While the exploration continued on the ridge, efforts were ongoing to improve the climb up the south wall. The ladders were replaced with wood steps and catwalks. The ladders were constructed in 6 foot sections using 1"x6" sections of steps fitted into carved sections of long side boards to form a flush ladder section. Eventually there was 8,050 feet of stairway. 3,500 feet of wood ladders were built by the CPNAB in 1943 along the southern access of Haiku Valley. 950 feet of galvanized steel ladder was built along the ridge in 1947 by the contractor Walker Moodey. 3600 feet of glavinized steel ladder was built in 1952 along the northern access by contractor A.W. Yee (U.S. Dept. Navy, 1955). Records indicate that this northern portion of stariway was originally slated to be built as a wood stairway in 1944 (Klepper, 1944:1).

When the first section of stairway was completed on the southern access, it took approximately 3-1/2 hours to go up to the ridge using the stairs. Immediatley following completion of the southern access work began to build cable cars and a tram system so that men, and most importantly heavy equipment, could be taken to the top of the ridge (Woodbury, 1946:357).

Engineers concluded that a small cable car, several men, and some materials would have an actual pull of nineteen tons. This, along with a determined safety factor meant that it must be built to withstand a fifty ton pull. This required 38,000 feet of inch wide steel wire rope. This amount of wire weighed twenty tons and left the obvious problem of getting it to the top of the mountain (Woodbury, 1946:357).

Ideas for getting the wire to the top of the North Ridge were considered, including having it dropped by an Army bomber, but the final decision was to carry up a lighter wire loop. To do so, 52 men carried a 10,000 foot long, quarter-inch cable over 6 miles up the steep terrain by coiling up 100 foot sections, placing one over the shoulder of one worker, having him walk up 100 feet, and then loading up a second man with 100 feet of wire and sending him up, until finally the entire length was laid along the path of the mountain. The men reached the top by evening and camped at the ridge. The next day, one of the original mountain scalers, Bill Adams, volunteered to make the loop by taking the line down the north face of the cliff, where there were no steps or ladders. He spent the day sliding down and axing his way through the brush until he reached the bottom (Woodbury, 1946:359).

The South Ridge was easy in comparison as workers were sent up the wooden stairway carrying the quarter inch wire. At the top a small loop was made with a piece of boards placed in it for a seat and a man was lowered down in it to the bottom. With the light wires in place it was possible to use a diesel powered hoist to pull up the heavier steel wire (Woodbury, 1946:360).

The cable car was supposed to carry either 500 pounds or three men at one time (Figure 4). Often the rule was overlooked. " . . . at quitting time on top the men could not wait for rules. Everyone

Figure 4. Loading 2,000 Pound Concrete Block for Testing Cable Car (From U.S. Coast Guard Omega Station Records 3-21-55)

who could possibly hang on anywhere would get aboard and swing out over the chasm, singing and tossing around their rigger's language." The engineers did have one strict safety feature. " . . . the use of a 'skookum block' for each headend pulley. This block had a completely enclosed body and graphite-lubricated bearings, which made it impossible for the cable to jam or pull loose" (Woodbury, 1946:361).

Prior to raising the heavy wire the engineers wanted to test out the antenna. Temporary anchors were erected and a medium weight heavy cable hoisted. A small transmitter was set up in the valley and connected to the downlead (Woodbury, 1946:360).

The results of this test, along with the measurements and calculations of the Haiku antenna, came out on November 11, 1942. The test antenna had a 4,575 foot flat top and 1250 foot downlead. The final antenna was proposed to have a 4600 foot flat top, a 1453 foot downlead, and of course a stronger steel wire. Various measurements were taken such as ground resistance, comparisons with other low frequency stations, effective heights, measured capacity, and antenna efficiency (U.S. Dept. Navy, 1942b).

The results of this test were a matter of great interest because the nature of the project was one of experimentation. This was clear in the introduction to the report.

> The erection of a low frequency antenna between mountain tops is a departure from normal antenna design. Previous experience with such antennas has been extremely limited, and because of this, it was impossible to estimate accurately the performance of such an antenna. The most important unknown was the radiation resistance value upon which the efficiency of the antenna depends. (U.S. Dept. Navy, 1942b)

The conclusion of the report indicates that the results were not as notable as was expected but did rate high enough to serve its intended purpose.

> These tests and calculations show that the Haiku antenna as designed will be a good low frequency antenna. The test shows that the performance will be considerably below the expected performance based on preliminary calculations. However, it will be a better antenna than any existing tower type antenna and will be a satisfactory replacement for the Lualualei antenna. (U.S. Dept Navy, 1942b).

After receiving the positive results of the test the progress of construction picked up pace even further.

> All through the valley terraces were leveled and made ready for the bomb-proof transmitter building, the 'helix house', living quarters, barracks, sewage plant, and system of roads. The 'keying' or actual message-sending from Haiku was to be done at Wahiawa, seventeen miles away. To make the connection, a cable was run to Kaneohe, and thence around the island by road (Woodbury 1946:362).

One of the components of the radio station was an elaborate copper wire ground system. The wires were to be attached to poles and set out in a grid pattern to cover the valley floor. The grid system worked to increase the radiating capacity of the system. In a letter to the Morrison Knudsen Company in 1943 Martin Broan stated that, "The ground system at this station is much more elaborate than most staions of this type have due to the high power and the poor conductivity of the soil in the valley (pg.5). The work was very difficult because the terrain was muddy, preventing the use of bulldozers, and covered with the heavy twisted hau trees. The holes for the poles were dug out by hand and dozens of wires, each a quarter of a mile long, were placed in a spider web fashion following the plan laid out by R.C.A.

The cable car systems were improved. On the North Ridge a sixty foot tower was constructed in order for the car to be able to pass over an overhanging ledge. The South Ridge had few snags. Once the car was stuck and two men were forced to spend the night in the dangling car. Another trolley system was placed along the ridge so that it would pass over the five anchor spots and materials could be brought in this manner. Workers remained on the mountain for days on a regular basis (Woodbury, 1946:365).

Construction of the five main anchors was ready to begin (Figure 5).

> [They] were lofty A-frames made of eight inch steel I-beams set down ten feet or more in solid blocks of concrete . . . Before they could be set, the gangs had to notch out the crest of the mountain with picks and shovels till solid bedrock was exposed, then blast a well to hold the anchor block. Concrete was mixed dry down at the Kaneohe batching plant and trucked in to the valley floor. Here it was watered and sent aloft in big steel buckets, than transferred to the [cable car] and poured directly from it through a portable chute (Woodbury 1946:365).

Finally the heavy steel wires were to be put in place. Several options for this were discussed including one from R.C.A. which was deemed unrealistic. The method used consisted of using a pulley in the valley to raise the loop of cable by gradually lifting the end of the loop off the ground (Figure 6). Weight boxes were built and placed behind the anchors on the ridge as counterweights to the fourteen ton pull of the cable. The weight boxes were each 14 tons. Woodbury relays the risk involved in this one process. One worker slipped while attempting to

place one of the weight boxes and fell approximately 400 feet but was basically unscathed (Woodbury, 1946:366).

One last project was left that involved the arduous construction along the ridge: " . . . a complete bomb-proof block house on the highest pinnacle of the ridge- at 2850 feet- to contain the ultra-high

Figure 5. Anchorage on the Mountain Top at Haiku Valley (From Woodbury 1946)

Figure 6. Method of Raising the Antenna at Haiku Valley (From Woodbury 1946)

frequency unit which could maintain communication with Kaneohe and Wahiawa if the regular cables failed" (Woodbury,1946:367). This structure was referred to as the 'CCL House' or the Communications Control Link Station. While there were "direct lines for telephone and telegraph . . . connected to Pearl Harbor, Kaneohe Naval RAdio Station, Ford Island Naval Air Station, Wahiawa Naval Radio Station, and Lualualei Naval Radio Station", this equipment housed at the pinnacle of the ridge allowed for an "ultra high frequency direct beam radio that also coule reach the points listed above" (Morrison, 1942: 4). With this, the radio station was complete and ready to handle high priority information during the war.

On the valley floor, not only had workers been building the bombproof transmitter building, but they also had completed an entire complex of other necessary structures to insure complete operational facilities for the radio station (Figure 7). From the original scope of work (Project 809, authourized by change A04, dated May 15, 1942, and Project 860, authorized by change M-4, dated June 19, 1942) projects included:

> " . . . preliminary survey work, and construction of a radio transmitting station, including equipment, services, etc., by R.C.A.; construction of a bombproof transmitter building, barracks for 35 men, roads, walks, fence, and services; clearing; power supply; setting poles for RF line; installation of water cooling system, and oil cooling system; telephone installation; construction of anchorages; and transportation and installation of eqipment. The estimated cost of the work was $1,198,000 . . . Additional work included construction of quarters for the Officer-in-Charge, addition of 600-KW. standby Diesel-electric generator, additional construction for TCG transmitter, testing aerial, addition of filter beds to septic system, and repair of fire damage. The estimated cost of additional work--after adjustment deductions for work omitted from contracat (because of delayed deliveries) and later performed by Construction Battalions-- was $521,300" (U.S. Navy, 1944: A-816).

The installation used its own lumber yard within the valley for these projects (U.S. Dept. Navy, site map).

In November, 1942, there was a decision to locate the TCG (Transmitter, Coast Guard [U.S. Dept. Navy, 1944: A-811]) antenna that was scheduled to be placed at another Naval Radio Station, Lualualei, at the Haiku location instead. Preliminary specifications for the TCG antenna stated

> The antenna shall be located northeasterly from the low frequency antenna being erected in Haiku Valley. The south anchorage shall be located approximately 100 feet east of #1 wire of the low frequency antenna where the elevation is approximately 2600 feet. The north anchorage shall be located about 1600 feet

> east of #1 wire of the low frequency antenna . . . The transmitter shall be located in the bomb-proof main building . . . The anchorages, antenna and ground system shall be similar in design and construction to the spans to be erected for the low frequency antenna. (Preliminary, TCG, 1942:1).

The TCG antenna had its own ground system and bombproof helix house. The funding and materials of the antenna and radio system mainly came from appropriations that were made earlier for the antenna to be erected at the Lualualei station. "TCG antenna across Haiku better suited than 600 foot tower at any available location Oahu . . . present transmitter building for Haiku . . . can accommodate TCG as well . . . It is recommended that the funds originally set up for installing the Model TCG at Lualualei be transferred to the Haiku Valley site . . . " (U.S. Navy, BuShips 'Bureau of Ships', 1942: 1). Again, mention was made of possible supply shortages as the ground grid system was specified. "Poles for ground system distribution may be made of 6x6 creosoted lumber if stub poles are not readily obtainable" (U.S. Navy, BuShips, 1942a:2).

By April of 1943 the station was almost complete until approximately 12:45 A.M. on April 29, 1943 when there was a fire in the transmitter building. A report concerning the fire was written to the chief of the BuDocks on May 5, 1943 describing the conditions of the building and the fire. It stated that, " . . . a fire was discovered in the explosion chamber of the bombproof transmitter

Figure 7. Construction of Bomb Proof Transmitter Building (From U.S. Coast Guard Omega Station Records 1-22-43)

building . . . Fortunately, the blaze was confined to this room" (Ghormley, 1943). The fire damaged some of the tuning coils which were reordered on a priority basis from Alameda. This created a problem for the radio station. As hard as the workers worked to hurry the construction, this event and the delay were unavoidable. Not only were general materials in short supply but many of the materials used in the construction at Haiku were very specific and unusual.

The report continued on to say, "All local sources are being combed for possible substitutions to make the unit operable at the earliest possible date, but it is believed that even under the best conditions, completion of the station will be delayed by two to three months" (Ghormley, 1943:2). The structure of the building was not seriously damaged though and the report went on to mention the suspicious cause of the fire that would create the delay in completion of the station (Figure 8). "Cause of the fire has not been determined. The entire room was ablaze when it was discovered by the contractors civilian guard who was stationed in the main transmitter room. . . . [he] indicated that the fire had been in progress for at least 45 minutes when discovered. Certain circumstances suggest the possibility of sabotage and this phase is being investigated by representatives of Hawaii Intelligence" (Ghormley, 1943:2). It was almost exactly 3 months later that the station was established on August 22, 1943.

A contractor report wrote about the Haiku Radio Station in 1943 stating that,

> The antenna system at this station is considered unique for serveral reasons:
>
> 1)-It is believed to be the longest unsupported span in existence (7600 ft.)
>
> 2)- It is believed to have the longest downlead employed in radio transmission (1200 ft.)
>
> 3)- Mountain tops are used for antenna anchorages in place of the conventional towers (Morrison, 1943: 6).

On August 17, 1944, a report was written that was a study and estimate of recommended alterations for the Naval Radio Station at Haiku Valley. Lt. Commander Klepper's statement in the opening paragraph was indicative of the continuing trials that construction in Haiku Valley posed for the workers and in creating an estimation for the report.

> The extremely difficult terrain, and access only by steep ladders and cable cars to the top of the mountain, makes ordinary bases of estimating impractical. Cable and other building materials have to be handled in relatively short lengths and safety precautions taken, which will materially lengthen the working time.

> Frequent rains and fog will also cause delays and interfere with the progress of the work. A generous estimate of man hours has been made in order to anticipate those conditions. However, a close estimate of the actual man hours is impossible to make and the man hours shown are more of a guess than an estimate (Klepper, 1944:1).

He continued on to describe the then current construction of catwalks and ladders as built with 2"x6" boards with 1"x6" boards nailed against them and using a handrail made of 2'x4' boards where needed. The power cable was laid on one side of the ladder and the telephone on the other. Klepper suggested that when replacing portions of the cable that the same method be used because

Figure 8. Exterior of Transmitting Building Following Fire (From U.S. Coast Guard Omega Station Records 4-29-43)

it allowed for easy checking on the cables, was not much of a fire hazard due to using armored cable, and any other method would require extremely time consuming labor. Portions of the cables would be placed in ducts. The commander suggested that the sections that were being replaced remain in place so that they could serve as spares if needed.

Klepper also discussed the proposed stairway on the North Ridge. Stating that it would be "approximately 3000 feet in length, with approximately 25% requiring ladders of the same construction as the South Ridge" (Klepper, 1944:1). The north access did not require any power or telephone cable be laid and in many sections the recommendation was to eliminate the wood walkway and a four foot path with a steel rod and cable handrail installed for safely. He referred to the sharp prominent edge at the rim of the north cliff and realized that it would require hand leveling. He ended his report with the estimate for constructing the stairway to anchorages on the north Ridge as, "Estimated material cost $1000 and an estimated man-hours 6000" (Klepper, 1944:2).

Also in 1944 the continued possession of the land within Haiku Valley was discussed in correspondence from the Navy Department and the Lands Division of the Department of Justice. A motion confirmed continuing possession of the area in October of 1944. It stated that the petitioner (The United States of America), "states that continued possession of said lands is necessary to aid in the prosecution of the War, for naval purposes, by determination of the Secretary of the Navy . . . " (District court, 1944:1).

The land was eventually acquired over the period of time between "1944 until 1972 by purchase, condemnation, and Executive Order setting aside land for defense purposes" (U.S. Dept. Navy, NavFacEngCom, 1973:4). This is an example of one such action taken on several parcels of the land.

> ...a petition for Condemnation in Civil 540 was filed on 30 October 1944, with Order Confirming Possession of all the subject land being issued the same day. Declaration of Taking filed 5 October 1945. Negotiations with the various owners of the lands were successfully completed each case, compensations being arrived at and judgments rendered on stipulation, from December 1945 until November 1947 (SECNAVNOTE 5450: 8).

Haiku Valley Post-War, Omega Station

In 1954 the Navy entered into an agreement with the U.S. Air Force giving them permission to use approximately 130 feet of the interior of the building built on the pinnacle of the ridge for the purpose of an unattended microwave relay station with antenna mountings. On May 24, 1963,

the Air Force notified the Navy that the interior of the building was vacated by them and the microwave relay system was replaced by passive and reflector antenna on the roof of the building (SECNAVNOTE 5450). Eventually the permit was transferred to the Coast Guard and the Marine Corps Base in Kaneohe. The unit was used as a passive transceiver to relay fire alarm signals between MCBH Kaneohe Bay and the Federal Fire Department at Pearl Harbor. Recently the Marine Base entered into a contract with NISE West (now renamed 'NRAD Act Pac', Naval command, Control and Ocean Surveillance Center Research Development Test and Evaluation Activity Pacific) to install an active repeater to Pearl Harbor which eliminated the need for the existing fire alarm relay station at Haiku (Kakesako, 1996:1).

After the war the station has continually been instrumental in experimental radio technology. On April 17, 1958, the Naval Radio Station at Haiku Valley was inactivated per SECNAVNOTE 5450 and the property remained under the command of the Navy. After the inactivation the station began a second life as a revolutionary experimental station for the OMEGA transmitting radio technology. "In the mid-1960s, the formative days of Omega, theoretical calculations were carried out to determine how much radiated power was needed for Omega to work" (Hoyler, 1993:1).

The Navy's experimentation with the Omega system in the 1950s and 60s led to Haiku being one of four all-weather navigational aid stations located around the world in the 1970s. The other three stations were in Bratland, Norway; Port of Spain, Trinidad; and Forestport, N.Y. The system was geared to eventually replace the navigational aids being used throughout the 1960s, the 109 Loran stations. "The Haiku station sends out a signal every 10 seconds. A ship or plane then triangulates the signal from Haiku with signals from two other Omega station in order to get a navigational fix. It only takes one minute. This is done with synchronized atomic clocks." (*Honolulu Star Bulletin*, Sept. 25, 1969).

The system was expensive to initiate because it required that ships or aircraft have a computer. Funding was done by both the Navy and the Federal Aviation Administration. The Omega system was on the cutting edge of technology and revolutionized global travel systems. The new system had the potential to pinpoint the location of a moving unit to within one mile during the day and two at night (*Honolulu Star Bulletin*, Dec. 30, 1967). "Previously the Navy sometimes found its ships in the Atlantic at least 50 miles off course. The Navy . . . spent $100 million outfitting surface ships and planes with the system" (*Honolulu Star Bulletin*, Sept. 25, 1969).

In 1970 the Navy made plans to expand the Omega system in order to achieve truly global coverage. They put in a request for funding from Congress to put up more sophisticated antennas in Haiku Valley. Discussions were under way to build four other Omega stations with Japan, Australia, New Zealand, France, and Argentina. Senator Fong gave a statement that, "The foreign countries have been invited to become partners with us. Each partner will build the station for his country and operate it in precise harmony with the other seven Omega stations" (*Honolulu Star Bulletin*, April 14, 1970).

John W. Warner, at that time Under Secretary of the Navy, wrote to the Secretary of Transportation July 2, 1970 explaining the inclusion of the Coast Guard in the project. The response stated that the main purpose of the project was now still mainly as a Department of Defense function. It also elucidated that the Omega system was ready to take on its function and, "As a consequence, Coast Guard assistance in the maintenance and operation of the system is now desirable" (Secretary of Trans., 1970:1).

In 1971 the design of the new Omega antenna system began. The system was the most advanced and complex of its time. The modernization of the system was finished in 1975. Like the original Naval radio system in Haiku Valley, this system also was a very low frequency station. The new station could radiate transmissions at a power of 10,000 watts and over an 8,000 mile radius. The finished project worked in conjunction with the other seven global Omega stations (Ching, 1976:13).

Originally Omega was developed from the work of Professor J. Pierce. The principles of his work were tested and developed by the U.S. Naval Electronics Laboratory. While many believed at the time Omega entered its more public phase in the 1970s that it was a brand new idea, it was actually an idea that had been in experimentation for almost 3 decades. The radio station in Haiku Valley was one of the first to do this type of experiment. Of the earlier stations being used for experimentation, including California, Hawaii, New York, the Panama Canal Zone, and Wales, the one in Hawaii was initially the only one that radiated to a satisfactory level. This was largely due to other sites being chosen purely because they had radio facilities, but the other stations were not geographically suited for the project (Wysocki, 1978:12).

The Omega stations transmit signals in sequence on a time-sharing basis at intervals two-tenths of a second a part. All transmitters are synchronized by use of accurate atomic clocks which allow only one station to transmit a signal at any time. The Omega signals form a grid-like

pattern which Omega navigation receivers use to measure the phase difference for signals, usually in pairs, from three different stations (Ching, 1976:13).

July, 1972, the first Coast Guard personnel arrived. Prior to that, the Omega station operations had been handled by civilian contract personnel. In February of 1973 the station operations were changed over from civilians to the Coast Guard and the existing antenna was erected. The new system required different wire spans. At some point between 1944 and 1958 the fifth span that was used for the TCG antenna was removed. Before the new antenna system could be erected the existing antenna and ground system had to be removed (Figure 9). This was replaced by an underground copper grid system and a six span antenna. The original ground grid system stood over 8 feet above the ground. It was in a deteriorated state and was not considered large enough to cover the area that was needed for the new six span antenna system. Cost analysis done by the Coast Guard found that installation of a new copper grid system underground would be more efficient (Ching, 1997:4).

The original A-frame anchors were removed and were replaced by 12 buried anchors implanted along the ridge of the cliffs. The spans and insulators were assembled in the valley and then raised up to their places at the ridge and in the air with the use of large pulleys and rigging (Ching, 1997:4). Like the first radio station construction in Haiku Valley it was a troublesome task. "Erection of the six span valley antenna was much more difficult than expected when one man was killed and several others seriously injured" (Omega 1976, 1). Groundwork was done to connect the down leads and it was in this phase that one of the workers lost his life. "He used a polypropylene rope (safety line) and unknowingly "burned" the new rope by friction (not noticed). Friction between the pulleys and the rope heated the tope and decreased the strength characteristics of the rope. The heat did not change the visual appearance of the rope and therefore was not noticed. On his second climb the rope broke and he fell approximately 500 feet (equivalent height of a five story building) (Ching, 1997:4).

Other changes included removal of 34 buildings that were in extreme disrepair, removal of the ground poles used for the ground grid system, and two additions to the transmitter building. An engineering room was added to the north side of the transmitter building and a helix room onto the top of the structure.

The new antenna system reaches 7,200 feet across Haiku Valley and is 1250 feet above the ground. The anchors weigh over 180,000 pounds. Unlike the original construction, a helicopter,

helium balloons, and hot air balloons were used in erecting the anchors and placing the wires. The underground grid system covers almost 70 acres and consists of buried copper mesh, rods, and wires. Much of the work was done by hand because of concern with erosion and the topography (Ching, 1976:13).

Figure 9. Above Ground Grid System Prior to Removal (From Holmes and Narver, 4-21-71)

The station was off the air during part of 1973 and 1974 while the system was constructed. Red balls had been placed on the antennas to warn aircraft. When the power was first turned on the red balls burned and a balloon was used to remove the scorched balls (*Honolulu Star Bulletin*, Feb.28, 1975). On February 27, 1975 the station was commissioned as a U.S. Coast Guard unit (Omega, 1).

The Omega station fulfilled a need that was created by increased global travel and which had not been met by any of the previous systems. "Celestial navigation is an all-weather; present electric systems do not give global coverage; and inertial systems are expensive, limited in accuracy, and degrade with time" (Wysocki, 1978:11). Also, the Omega system could be used, "for full time long range en route navigation with a relatively small initial cost for Omega receivers compared with more sophisticated self-contained systems . . . the accuracy of the Omega navigation system in supplementing celestial navigation provides savings in travel time and fuel" (Ching, 1997:4).

The era of the Omega station comes to a close on September 30, 1997. Many proponents of the Omega system feel that it could have remained as a viable entity in the radio transmission community because of its advantages, " . . . low cost, worldwide coverage, and important potential as a GPS integrity check" (Hoyler, 1993:3). However, the use of the Global Positioning System will become the main means of navigational aid. "The U.S. Government recently approved use of 24 Pentagon satellites for GPS commercial use. With GPS technology, OMEGA technology is no longer required, even by the private sector" (Kakesako, 1996:1). This will end a reign of 55 years of one site, Haiku Valley, being the world leader in radio technology.

The result was one of the most significant components of the success of the Pacific fleet during World War II. The lives saved due to the message transmissions made possible by the Naval Radio Station at Haiku Valley are believed to be enormous. An article in the Honolulu Star-Bulletin, June 4, 1957, reflects that the . . . "1942 saga in Haiku Valley was a Lifesaver for the Navy . . . Haiku's value in terms of messages that saved lives, is a story open to those willing to scan the Navy's wartime annals".

The initial construction of the Naval station was one of the most difficult jobs undertaken during the war in the Pacific using innovative engineering techniques and cutting edge radio technology. The station also continued on after the war to use the facilities and topography as an important link to the twentieth century's growing travel and intercontinental age.

Due to the radio station occupying the valley between the years 1942-1997, the valley remains a relatively unspoiled natural area in Hawaii except for the as yet unopened span of the Interstate H3 Highway.

Part II. Architectural Information

The five structures proposed for nomination to the National Register of Historic Places were evaluated to determine their past and present use, historic construction, alterations, and present condition. This evaluation required both on site research and archival research to determine the construction date, original appearance, and the use of each structure throughout its history. A historic resources inventory form was completed on each structure noting condition, modification, architectural elements, and materials (Appendix C). The results of this research and evaluation of the five proposed structures are described below.

Historic Construction

Immediately after the Japanese planes bombed Pearl Harbor attention began to be paid to structural protection in case of future bombings. A course entitled "Aerial Bombardment Protection" was instituted by the college of Engineering of New York University in February 1941, under the auspices of the Engineering Defense Training Program of the United States Office of Education. In addition to those for whom the course was originally designed, engineers from the New York offices of the U.S. Army Corps of Engineers and the Bureau of Yards and Docks, U.S. Navy, attended (Wessman, 1942:v.).

This knowledge was put to use by the Bureau of Yards and Docks and the U.S. Navy in the construction of the three bomb-proof buildings at Haiku Valley, the transmitter building (Building 1), the helix building for the TCG antenna (Building 6), and the high frequency unit at the pinnacle of the mountain used for intra-island communication (Building 18).

These three bomb-proof buildings and Building 9, the commercial electrical building, were all made of reinforced concrete: " . . . concrete alone, like any natural stone, is brittle, but by imbedding in it steel rods . . . the cement adheres, and the metal binds the particles together so that the reinforced concrete is better adapted to withstand jar and impact" (Atlas, 1905:16). Forms were made of wood boards, steel rods set in place, and the concrete was poured in. After the concrete set the boards were removed. The imprint of the form boards on the concrete remain visible on the exterior of the structures today.

Transmitter Building (Building #1)

Location

The Transmitter building is centered towards the west side of Haiku Valley. The location of the building allows for the antenna on the surrounding cliffs of the valley to reach down and enter this centrally located structure.

Past Use

The transmitter building originally acted as the main force of the Naval Radio Station at Haiku Valley. The building housed the transmitter for all outgoing radio messages as well as the helix coil. The helix is a coil of copper wire that transmissions go through in order to regulate the resistance of the signal.

Present Use

The structure houses the transmitter and helix for the U.S. Coast Guard Omega Station.

Construction

Construction began on the transmitter building during late 1942 as part of the Navy's World War II Pacific efforts (Figure 10). The building was built as a relatively square (84ft.x74ft.), two story, reinforced, poured concrete structure built to withstand aerial bombardment. The roof is eight and a half feet thick and the walls are four feet thick and were built with the use of wooden forms. The building contained no windows. The one doorway is on the south side and has a covered entry way to provide concrete coverage for the small double doorway. The roof was flat with an extended overhang surrounding the building. On April 29, 1943 there was a fire in the transmitter building. The fire damaged some of the tuning coils and thus created a delay in the completion of the station (until August 22, 1943), however, the structure itself withstood serious damage. After construction was complete the exterior was painted in a camouflage pattern (Figure 11). The interior housed the transmitter, the helix, and a ten ton bridge crane that was used to move the heavy transmitter equipment (Figure 12a).

Alterations

When the station made the conversion from the U.S. Naval Radio Station to the U.S. Coast Guard Omega Station in 1971, the transmitter building underwent some alterations. A one story generator room was added to the north side of the building. A helix room was added to the south portion of the roof (Figure 12b). On the interior of the building an office and recreation area were arranged on the second floor.

No other major changes have occurred to the transmitter building.

Figure 10. Construction of Bomb Proof Transmitter Building (From U.S. Coast Guard Omega Station Records 1-22-43)

Figure 11. South View of Camouflaged Transmitter Building (From U.S. Coast Guard Omega Station Records 12-5-43)

Figure 12. a. Interior of Transmitter Building, 1997. b. Transmitter Building with New Helix Room, 1997.

Present Condition

Due to the fact that the function of the building remains generally the same as the original, there are few effects from any outside influence on the structure. The location and setting are almost identical to that of the building during the war era (Figure 13a). The alterations have made a relatively indistinguishable change to the feeling or design of the building. The alterations were done with similar materials and in a symmetrical manner so that the large block shape and flat roof design of the original remains intact. The structure remains in excellent structural condition and repair.

Helix Building (Building #6)

Location

The helix building is located approximately 1/2 mile past the gate, to the north of the entrance road.

Past Use

Building 6 was constructed for the purpose of a helix building specifically for the TCG antenna. The TCG antenna had its own helix, two anchors, wire span, and ground system that were separate from the VLF antenna, although it did use the same transmitter. Records indicate that the structure was in use as a helix house as recent as 1954.

Present Use

Vacant

Construction

A review of details concerning Navy building installations written on Dec. 24, 1942 states that the TCG bombproof helix building would be located underneath the determined final location of the TCG span (U.S. Dept.Navy, BuShips, 1942a:1). Due to the fact that the previously proposed site of the TCG antenna was Lualualei, plans, funding, and some materials were forwarded from that station for the construction at the Haiku site. Construction was completed in 1943.

The structure is a slight rectangular shape, with a 44 foot length, 32 foot width, and height of 36 feet (Figure 13b). The helix house is built on a concrete foundation. The walls and roof are bombproof reinforced concrete, with a eight and a half foot roof and four foot walls. On the exterior east wall, a small portion of reinforced concrete is visible. The east and west walls both have one opening set in a recessed concrete square that served as entryways for the antenna cables (Figure 14a). The one doorway is at the back of the building, on the north wall. The

doorway is a 'blast door' (Figure 14b). It is comprised of a heavy concrete slab reaching approximately 13 feet high and is set parallel to the doorway, leaning in

Figure 13 a. Aerial View of Transmitter Building, 1997. b. Aerial View of Helix Building, 1997

Figure 14. a. Cable Access, East Wall, 1997. b. Blash Door, North Wall, 1997.

slightly towards the structure. The space between the slab and building is covered with another slab of reinforced concrete. The helix house consists of one room, all copper lined on the interior, and 22,000 cubic yards of concrete used in the exterior shell of the sturcture. The interior of the building has circular raised concrete portions for the helix coils and trenches surrounding it that would have held the wires.

Alterations

There is a small, concrete block, rectangular room that appears to have been added to the south side of the structure at a later date, between 1943 and 1968. The construction of the room indicates that, unlike the main structure, it is not bombproof. The room is in disrepair, does not have a roof, and many segments of the walls are no longer standing.

Present Condition

The poor state of repair of the concrete block addition at the south side of the structure is an obvious detriment to the condition of the helix building (Figure 15). The main building itself has not been in use for some time but the physical materials are strong and in good condition. Presumably it remains standing only due to the fact that during the alterations of the 1970s the bombproof construction proved too difficult for demolition. However, the result of this is a positive one. While the attached building has been open to neglect the primary building remains as a structure holding a strong association and feeling with the original site. It is easy to see that the design, materials, and workmanship are authentic to the property.

Commercial Power Building (Building #9)

Location

Building #9 is located approximately 1/4 of a mile past the gate, on the south of the entrance road.

Past Use

The structure was built as an incoming source for commercial power, a power vault, for the Naval Radio Station at Haiku Valley.

Present Use

The structure remains as an incoming source for commercial power for the valley.

Construction

Plans began on the power vault in 1942 with final construction being in 1943 (Figure 16). The building is a small square shape, 27 ft.x 26 ft., with a flat roof at a 20 ft. height. There is one doorway at the north side of the building. As in most buildings at Haiku Valley, the doorway is

protected with a parallel and covered entry way. This entryway has its own flat roof at approximately 10 feet. The front of the entry way is made of concrete block (Figure 17). The rest of the building is poured, form concrete.

Figure 15. Helix Building, Concrete Block Addition, East Wall, 1997

Figure 16. Commercial Power Building During Early Stage of Construction (From U.S. Coast Guard Omega Station Records 2-15-43)

Figure 17. South View of Commercial Power Building (From U.S. Coast Guard Omega Station Records 5-15-43)

with discernible evidence of the wood form on the exterior of the structure (Figure 18a). Above the entry way are three mesh covered air vents. To the west side of the doorway are three insulators previously used for conduits running into the building. There is a small raised cube structure on top of the building for electrical purposes.

Alterations

There are no apparent alterations.

Present Condition

The structure has no alterations and maintains the original setting and design. Due to the fact that the building remains in use and is in constant care and repair it has the appearance of a new building (Figure 18b).

Haiku Stairway

Location

The stairway begins at the southern portion of the valley, runs up the height of the south cliff, and along the top of the mountain to the southern side of the ridge.

Past Use

Access to the anchors and antennas used with the Naval Radio Station.

Present Use

Remains in place as an access to the anchors and antennas of the Omega Station. Occasional recreational (hiking) use.

Construction

The construction of the stairway at Haiku Valley began in 1942. Construction, whether in the form of improvements or repairs, has been an ongoing process since the conception of the stairway. (refer to historical data for more information). The first version of the stairway began on the south side of the valley in 1942. At that time, access to the ridge was crucial so that the anchors and antenna wires could be put in place. High scale climbers, Bill Adams and Louis Otto, toiled for twenty one days up the south side of the mountain before they reached the summit. The climbers left spikes in place as they made their way to the top. During their ascent, workers in the valley built simple sections of ladders. The climbers carried sections of the ladders up and lashed them to the spikes as they reached areas where it was impossible to walk. In certain sections where the wall of the mountain was almost vertical, three or four sections were roped together. The first stairway led workers up to the pinnacle of the mountain, 2,850

feet. Almost immediately,

Figure 18. a. Possible Evidence of Wood Form for Poured Concrete, West Wall, 1997. b. North Wall, 1997

improvements were made as the ladder sections were replaced with wood stairways and gangways going up the side of the mountain and along the ridge, giving access to the anchors for the very low frequency antenna (Woodbury, 1946:357). "A 2300 volt 3 phase, 60 cycle, parkway power line was attached to one side of the ladderway and a 26 pair parkway communication cable was attached to the other side" (Morrison, 1943: 4), thus providing power and communication along the ridge (**Figure** 19a).

The stairway is 8,050 feet long and has 3922 steps. 3,500 feet of wood ladders were built by the CPNAB in 1943 along the southern access of Haiku Valley. 950 feet of galvanized steel ladder was built along the ridge in 1947 by contractor Walker Moodey. 3600 feet of glavinized steel ladder was built in 1952 along the northern access. Records indicate that this northern portion of stairway was originally built as a wood stairway in 1944 (Klepper, 1944:1).

On August 17, 1944 a memo was sent by the Officer in Charge, Lt. Klepper, concerning a proposed access from the north side of the valley. He suggested that the stairway be similar in design with the south side stairway. The catwalks were made in sections six feet long using creosoted 2"x6" boards and 1"x6" boards nailed across them. The handrails were 2"x4" boards where the topography made it necessary. The cross pieces were nailed into sections that were notched the size of the board so that they were flush with the side boards. In some of the sections the six foot long boards were hollowed out in the middle (**Figure** 19b). There is no record of the reason for this procedure but it was possible that it was done so that the sections would be lighter to carry up and put in place.

There was no need for power or telephone lines to be laid on the north side so the recommendation was made that the wood walkway be eliminated and instead a four foot path made with a steel rod and cable handrail for safety. There was a steep ledge at the North Ridge that required hand-leveling for the path to be able to make a complete approach to the North Ridge.

It is vital to understand the difficult conditions created by the topography in order to understand the construction of the stairway at Haiku Valley. The steep terrain and extreme heights made the work strenuous and dangerous. When proposing the stairway up the North Ridge, Lt. Klepper estimated that construction would have a material cost of $1000 and require 6000 man hours (Klepper, 1944:1).

According to current Commanding Officer Paul Zerby, at one point, between 1945 and 1953, the north side stairway sections were taken down and placed along with the southern stairway sections in order to create one contiguous stairway to the top of the South Ridge. In 1955 and 1956 the wooden stairway portions were replaced by the U. S. Navy with a steel stairway (Goodson: n.d.). The wooden portions were tossed to the side as they were removed and are visible today from the steel stairway.

Figure 19. a. Remaining Power Lines Running Along the Haiku Stairway, 1997. b. Remains on Old Wood Stairway, Laying Beside the Steel Stairway, 1997

The steel stairway consists of sections that are approximately 6 feet long and are anchored into the mountain side with steel pins (Figure 20a). Each section is made of two side pieces of steel and eight steps that are attached with bolts. The angle of each step can be manually adjusted along with the steepness of the grade. There is a metal handrail on either side of the steps. A small steel brace is welded onto the ends of each section. Onto this brace, the ends of the handrails are welded and there is a hole for the steel pins that connect the sections (Figure 20b).

This manner of steel constructed steps currently comprises the majority of the stairway although at several areas along the ridge there are a variety of walkways, depending on the topography (Figure 21). In one portion near the north summit there is a natural pathway. Along the south summit there is a steel catwalk and steel plank pathway (Figure 22a). Leading out of the hoist house on the South Ridge there are early laid concrete steps (Figure 22b).

Alterations

Most alterations were discussed in the construction section of this report and were the result of the ongoing nature of the construction, improvements, and repairs. In 1987, vandals destroyed three small sections of the stairway.

Present Condition

The stairway is in generally good repair (Figure 23a). There are three small missing sections of steps at the higher elevations of the stairway (Figure 23b). Some portions of the stairway have general wear, worn out anchor pins, rusted railings, and sections that are out of alignment. While the stairway has been modified over the years, it remains in the original location and setting as the stairway constructed in 1942 (Figure 24a). Much of the original wood stairway remains scattered along the side of the steel stairway, evidence of the evolution of the construction of the stairway (Figure 24b).

The Concrete Retaining Wall, Marked USNRS, Haiku Valley

Location

The name place concrete retaining wall is 1/2 mile along the entrance road, on the north side of the road (Figure 25).

Past Use

Served both as a retaining wall for the built up ground area that was used for construction of the mess hall and barracks and as the name place for the Naval Radio Station at Haiku Valley.

Present Use

Retains its use as a retaining wall for the ground area north of the entrance road.

Figure 20. a. Beginning of the Steel Stairway in the South Side of the Valley, 1997. b. Detail of Steel Stairway Connecting Units, 1997..

Figure 21. Variations in Stairway Construction (From Holmes and Narver, 1971.

Figure 22. a. Steel Catwalk Along the South Ridge. b. Concrete Steps Out of Cable Car House Going Up the South Ridge, 1997

Figure 23. a. Aerial View of Stairway, Southern Approach to Cable Car House, 1997. b. Southern Stairway, Missing Section at Top is Replaced with a Temporary Ladder, 1997.

Figure 24. a. Stairway, Southern Access, 1997. b. Original Wood Stairway and Remains Along Side Steel Stairway, 1997.

Figure 25. Concrete Retaining Wall, West View of Valley, 1997.

Construction

The concrete retaining wall was made in 1942-43. It is two sections with a centered stairway that led up to the barracks and mess hall of the Naval Radio Station. The wall was made with the use of curved forms and poured concrete. The name of the station 'USNRS. Haiku Valley' was molded into the south side section of the retaining wall.

Alterations

There have been no alterations.

Present Condition

The concrete retaining wall is in excellent condition. It also possesses the location, design, setting materials, and association of the historic property of the Naval Radio Station at Haiku Valley.

NOMINATION TO THE NATIONAL REGISTER OF HISTORIC PLACES

CONCLUSIONS

The site of the previous U.S. Naval Radio Station, and the current U.S. Coast Guard Omega Station, is eligible for nomination to the National Register of Historic Places, as amended, as a historic district. During both field and archival research, it was determined that the proper format for nomination of the five proposed structures at Haiku Valley was the submission of one district nomination instead of five separate nominations.

The basis for this determination is twofold. First, is the fact that if more than one individual structure is to be nominated, and they share the same history, or are considered to be part of a number of resources that are relatively equal in importance, the U.S.. Department of the Interior, National Park Service states that these resources should be nominated as a district vs. several individual nominations. Secondly, is that the U.S. Naval Radio Station was a complex of interrelated units and structures. Inclusion of the various structures in one nomination creates a stronger nomination and most importantly portrays a more authentic vision of the original nature of the historical site.

PREPARATION

Based on extensive field and archival research, forms were prepared for the nomination of the Omega Station to the National Register of Historic Places. The nomination names the Haiku Valley Historic District as eligible for listing in the National Register of Historic Places based on

this significance: Criterion A, historical association with World War II and radio technology, and Criterion C, distinctive architecture and engineering of a Naval Radio Station unique to the Cold War period. See Appendix D.

Preparation of the nomination forms was in compliance with the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat 1320) and should afford adequate protection of cultural resources during the planned closure of the Omega Station.

RECOMMENDATIONS AND PROCEDURES

Prior to submitting the forms boundaries for the Haiku Valley Historic District should be designated and adjusted accordingly on the nomination forms.

It is also recommended that the nomination first go to the Hawaii State Preservation review board which would then pass the nomination to the National review board. This is not mandatory but is standard review protocol for the State of Hawaii.

REFERENCES

Allen, Gwenfread Elaine
1950 *Hawaii's War Years: 1941-1945.* University of Hawaii Press, Honolulu.

Atlas Portland Cement Company
1905 *Concrete Construction About the Home and on the Farm.* Atlas Portland Cement Company, New York.

Butzine, Harold
1942 Site map, Haiku Valley. On file at the National Archives and Records, San Bruno, CA.

Ching, Ronald T.K.
1976 Transmitting Facility Modernization, Omega Navigation Station, Haiku, Oahu, Hawaii. *Wiliki O Hawaii*, Honolulu.

1997 Draft of Historical Information per oral interview. Faxed information, June.

Contractors, Pacific Naval Air Bases
1942 Estimate for Radio Transmitting Station. On file at the National Archives and Records, San Bruno, CA.

District Court
1944 Motion for Order Confirming Possession. On file at the National Archives and Records, San Bruno, CA.

Finch, J.L.
1942 Letter to Contractors, Pacific Naval Air Base. On file at the National Archives and Records, San Bruno, CA.

Ghormley, Robert L.
1943 Letter to Chief of BuDocks. On file at the National Archives and Records, San Bruno, CA.

Goodson, Lee.
nd *Mountain Valley Mystery Unfolds.* Article handed out by the U.S. Coast Guard Omega Station.

Historic American Building Survey.
1996 No. HI-XXX-X. On file at the National Park Service, San Francisco, CA.

Honolulu Star Bulletin
1950 Trail Ways. Oct. 7.

1957 42 Saga in Haiku Valley Was Lifesaver for Navy. June 4, 1957.

1967 All- Weather Aid Station for Oahu. December 30.

1969 Navy Has Unique Navigational Aid. September 25.

1970 Navy Plans to Put New Antennas In Haiku. April 14.

1975 Coast Guard Dedicates Haiku Site. February 28.

Hoyler, R.C.
1993 *Power Optimization Program.* ONSCEN Station Manager's Conference.

Kakesako, Ed
1996 Historical Briefing. Located on File at the PACDIV Real Estate Office.

Klepper, H.S.
1944 Letter to District Public Works Office. On file at the National Archives and Records, San Bruno, CA.

PACDIV
1971 Compendium of Acquisition. On file at the PACDIV Real Estate Office.

Preliminary Specifications, author unknown
1942 TCG antenna. On file at the National Archives and Records, San Bruno, CA.

R.C.A.
1942 Letter to Contractors, Pacific naval Air Base. On file at the National Archives and Records, San Bruno, CA.

Secretary of Transportation
1970 Letter to John W. Warner. On File at PACDIV Real Estate Office.

Thompson, Erwin N.
1980 *Pacific Ocean Engineers: History of the U. S. Army Corps of Engineers in the Pacific*. U.S. Army Corps of Engineers.

U.S. Coast Guard
nd *Omega Hawaii Transmitter.* Informational Handout given out by the U.S. Coast Guard Station at Haiku Valley.

U.S. Department of the Navy
1942a Bureau of Ships, Letter to BuDocks. On file at the National Archives and Records, San Bruno, CA. See Appendix A.

1942b Test Antenna, Measurements and Calculations, Haiku Antenna. On file at the National Archives and Records, San Bruno, CA. See Appendix A.

1943-1947 Exact Date Undetermined. Site Map. On file at the PACDIV Plan and Files.

1944 Technical Report and Project History Contracts Noy-3550 and Noy-4173. Volume 5 of 11, Appendix A, Chpaters XIV through XXII. On file at the Navfac Construction Battalion Center, Port Hueneme, CA.

1947 Building the Navy's Bases in World War II. U.S. Government Printing Office, Washington D.C.

1954 SECNAVNOTE 5450. As referenced in the Compendium of Acquisition on file at the PACDIV Real Estate Office.

1955 Inventory, Buildingsof U.S. Naval Radio Station Haiku/Heeia, Oahu, T.H. On file at the Construction Battalion Center, Port Hueneme, CA.

1973 NavFacEngCom. Memo of Transfer of Real Property to the U.S. Coast Guard, Enclosure 3. On File at the PACDIV Real Estate Office.

Wainwright, Paul

1997 Previous Vice President of Hawaiian Dredging Company. Oral interview. June, Washington.

Wessman, Harold and Rose, William

1942 *Aerial Bombardment Protection.* John Wiley & Sons, Inc., New York.

Woodbury, David O.

1946 *Builders for Battle: How The Pacific Naval Air Bases Were Constructed.* E.P. Dutton and Company Inc., New York.

Wysocki, J.P.

1978 OMEGA: The Radionavigational System That covers the World. *Coast Guard Engineer's Digest.* Spring.

U.S. Department of Transportation
United States Coast Guard

Commanding Officer
USCG Civil Engineering Unit Honolulu

Prince Kalanianaole Fed. Bldg.
300 Ala Moana Blvd. Rm. 8122
Honolulu, HI 96850-4982
Phone: (808)541-2077
FAX: (808)541-2203

5751
es-16025
April 10, 1998

Michael Wilson
State Historic Preservation Officer
Department of Land and Natural Resources
33 South King Street, 6th Floor
Honolulu, HI 96813

Re: U.S. Coast Guard Omega Station NRHP eligibility determination

Dear Mr. Wilson:

In preparation for closing the Omega Station in September 1997, the U.S. Coast Guard initiated studies to assess the historic and archaeological resources in Ha`iku Valley, Oahu. The reports on these studies are enclosed.

Historic resources. The historic preservation study began as an evaluation of five structures previously determined to be potentially eligible for the National Register of Historic Places: the Transmitter Building, Helix Building, Commercial Power Building , Ha`iku Naval Radio Station nameplace concrete retaining wall, and Ha`iku Stairway ("Stairway to Heaven"). This included documentation of the five structures' design, construction, renovation, use and condition; as well as collection of historical and architectural/engineering information on the development of the Radio and Omega Stations.

The study concluded that the site of the Radio and Omega Stations is eligible for inclusion in the Register as a historic district. The decision to create a district versus five separate structure nominations was primarily based on the fact that the site is a complex of interrelated units and structures; and that inclusion of these structures in one district portrays a more authentic vision of the original nature of the historical site.

The report concludes that the site is eligible based on Register Criterion A, historical association with World War II and radio technology, and Criterion C, distinctive architecture and engineering of a Naval Radio Station unique to the Cold War period.

Archaeological resources. Seven archaeological surveys were conducted within Ha`iku Valley, prior to the subject study. The previous studies recorded a total of 22

archaeological and historical sites within the valley. None of these previous studies surveyed the valley as a whole.

The subject study recorded six previously unidentified sites. All six sites found within the survey area appear to meet Criterion D; i.e., they yield information important to the prehistory and, in some instances, history of Ha`iku Valley. Additionally, site 50-80-10-5498, a *lo`i* complex, because it is well preserved and largely intact, appears to meet Criterion C: "...excellent example of a site type"; and site 50-80-10-5603, a *heiau,* appears to meet Criterion E: "...cultural significance to an ethnic group".

Excessing of property. As noted above, the Omega Station was closed in September 1997. The final step needed before the U.S. General Services Administration can accept the property for re-use is your concurrence with our determination of eligibility. We are therefore requesting that you conduct your review as expeditiously as possible.

Please write or call me at 541-2077 if you have any questions or comments, or would like to arrange a site visit.

Sincerely,

Jay Silberman
Environmental Protection Specialist
U.S. Coast Guard
By direction of the Commanding Officer

Encl: (1) Final report, Historic Preservation Survey and Nomination of U.S. Coast Guard Omega Station. Ogden Environmental and Energy Services, 1997.

(2) Draft Report, Archaeological Inventory Survey of the United States Coast Guard Omega Station. Cultural Surveys Hawaii. Draft Report. 1997.

cc: MLCP (se), (sr)
D14 (dpl), (oan)

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

GILBERT COLOMA-AGARAN

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND DIVISION
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII

REF:HP-JK

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

MAY 14 1998

Mr. Jay Silberman
Environmental Protection Specialist
U.S. Coast Guard
Prince Kuhio Federal Building
300 Ala Moana Blvd., Rm. 8122
Honolulu, Hawaii 96850-4982

LOG NO: 21466
DOC NO: 9805tm02
Architecture

Dear Mr. Silberman:

SUBJECT: **U.S. Coast Guard Omega Station**
NRHP Eligibility Determination
TMK: 4-6-15, Kaneohe, Oahu

Thank you for transmitting the *Historic Preservation Survey and Nomination to the National Register of Historic Places of the U.S. Coast Guard Omega Station Located at Haiku, Kaneohe, Oahu Island, Hawaii* and the Archaeological Survey of the same area. The archaeological review will follow at a later date. Overall, the historic preservation survey is a thorough report and we concur with your determination that the Omega Station in Haiku Valley is eligible for the Hawaii and National Register of Historic Places as a district. However, it is difficult for us to make any determinations regarding the non contributing structures since there is no information given on those structures. A short description or explanation as to why those structures are considered non contributing would be helpful. This does not affect our concurrence to the eligibility of the Omega Station as a district.

Thank you for the opportunity to comment. Should you have any further questions, please call Tonia Moy at 587-0005.

Aloha,

MICHAEL D. WILSON, Chairperson and
State Historic Preservation Officer

TM:jk

Post-it® Fax Note 7671	Date 5/15	# of pages ▶ 1
To Jay	From Tonia	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 541-2003	Fax #	

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
GILBERT COLOMA-AGARAN

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

REF:HP-AMK

JUN 3 0 1998

Mr. Jay Silberman, Environmental
Protection Specialist
U.S. Coast Guard
Prince Kuhio Federal Building
300 Ala Moana Blvd., Rm. 8122
Honolulu, Hawaii 96850-4982

LOG NO: 21710
DOC NO: 9806tm06
Architecture

Dear Mr. Silberman:

SUBJECT: **U.S. Coast Guard Omega Station**
NRHP Eligibility Determination
TMK: 4-6-15, Kaneohe, Oahu

Thank you for transmitting the descriptions of the four non contributing structures at the Omega Station. We will include these descriptions in the report you sent earlier Thank you for completing the information requested, the report is now complete. Should you have any further questions, please call Tonia Moy at 587-0005.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TM:amk

August 24, 2015

Kenneth Rose
46-460 Kuneki St.
Kaneohe, HI, 96744
kenneth.dean.rose@gmail.com
808-377-0051

Board of Water Supply
630 S. Beretania St.
Honolulu, HI 96843
ianderson@honolulu.gov

Dear Board of Water Supply,

I live at the above address and became a resident of Ha'iku Village in Kaneohe in February 2009. I knew of the trespassing hiker (TH) issues connected to the Ha'iku Stairs when I arrived. However, TH activity has increased dramatically in the last three years. On March 16, 2014, my wife and I were assaulted by TH on our property (HPD case #: 14-101054 and 14-101055). The TH situation through our community continues to despite the Board of Water Supply (BWS) contracted guard service.

I emphatically and respectfully ask that the Board of Water Supply (BWS) consider and/or continue their plans to remove the Ha'iku Stairs. In light of lack of public agency support for a managed access plan, continued TH activity (below), and the very unfortunate case of a missing young man in February 2015 that was drawn to the Ha'iku Stairs area, removing the Ha'iku Stairs is the best course of action.

First, the managed access plan has failed to be accepted for action by respective Hawaii state agencies. In July-Oct 2014, I participated at the invitation of Councilman Ikaika Anderson in a work group to determine a possible solution to Ha'iku Stairs. The work group included members a BWS employee, member of the Friends of Ha'iku Stairs (FOHS), and members of other state and private agencies, i.e. Department of Transportation and Kamehameha Schools. The work group concluded a managed access plan through Windward Community College (WCC) with a Hawaii government agency to implement the plan was the best course of action. During the April 2015 Kaneohe City Board Meeting, Councilman Anderson announced he did not receive acceptance from any Hawaii state agency to take over managing Ha'iku Stairs. Due to public management being a key part of the recommended plan, Councilman Anderson concluded he would recommend to BWS to begin plans to remove Ha'iku Stairs.

Second, despite Councilman Anderson's announcement, dedicated Hawaii Police Department (HPD) enforcement, and BWS contract guard service at the Ha'iku Stairs, TH activities continue unabated. Our community witnessed 902 TH including 12-911 calls due to TH activity due to crossing resident's property and TH verbal threats. In Jan-Apr 2015, there were over 1,500 TH and 33-9ll calls; this includes 655 TH in Jan 2015 alone. Despite HPD determined efforts, one officer reported 28-ciations on August 21 alone, and the BWS contract guard turning people away, our community observed 277 TH in July 2015.

Lastly, I strongly believe Ha'iku Stairs will continue to draw TH until it is removed. I respectively do not believe a private entity such as Friends of Ha'iku Stairs (FOHS) will adequately manage Ha'iku Stairs. We know the missing hiker from the 'Big Island', Daylenn Pua, was drawn to the area due to Ha'iku Stairs. Our community's prayers go to his family. The work group managed access plan stipulated how all routes

to Ha'iku Stairs must be secured preventing TH reaching the area. It's unfortunate FOHS written and video statements that I have seen do not mention area security or a call for TH activity to cease. FOHS statements seem to only address how great the Ha'iku Stairs would be to develop. Although state agencies are accountable to the public and elected officials, I do not see how FOHS will be accountable to area residents concerns.

I respectfully ask the Board of Water Supply proceed with plans to remove the Ha`iku Stairs to mitigate security concerns of the surrounding communities. Unless agreed upon managed access plans are achieved, Ha'iku Stairs will continue to attract trespassing hikers until they are removed.

Sincerely,

Kenneth Rose
August 24, 2015
US Army, Ret.

From: ridg002 [mailto:ridg002@gmail.com]
Sent: Monday, August 24, 2015 1:04 PM
To: BWS Board
Subject: Haiku Stairs

Honolulu Board of Water Supply.

Dear Sirs,

I believe your plan to remove the Haiku Stairs reflects poor stewardship of the resources you have been entrusted with and a lack of social responsibility to maintain precious parts of our island history.

In addition it causes the loss of a very special access to otherwise very difficult to reach environmental, historical , and cultural areas.

I would ask you to consider several points that need to be made regarding the Stairs removal.

First of all, the removal of the Stairs is irreversible. Notwithstanding the city's expenditure of almost a million dollars to repair the stairs any money that you spend now to remove them would most likely be multiplied by a factor of 4 or 5 to try and reverse that action in the future.

Secondly.

Your mission is to provide good water to the residents of this island. As such you have been entrusted with control over significant amounts of land. As technology changes, you have, for example, already released large amounts of land from Kapu status to Open for hiking and other recreational activities. It would certainly be consistent for you to support the Haiku stairs.

Third.

Removing the Stairs is a short sighted response to some vocal, hard headed, selfish individuals. Concerns about past abuses has hardened these individual's ideas to the point that they are currently opposed to any kind of workable solution to this problem.

Fourth.

A number of solutions have been proposed several of which are quite viable. The status of the entire Haiku Valley is to my mind still in a state of flux. To remove the stairs at

this time would remove the possibility of a significant number of special uses.

Fifth.

The Haiku Stairs are a treasure that has been entrusted to your care even though that particular land has nothing to do with your primary mission of providing clean water to our people of Oahu. Since the Stairs are not part of your kuleana it is understandable that you want to remove yourselves from this controversy. As Technology and Political relationships change however, it is quite possible that a solution to this acrimonious debate can be found in a reasonable amount of time.

In conclusion I would like to reiterate that good stewardship of the land would preclude removal at this time because :

1) It's basically irreversible.

2) Allowing a solution to the problem of the Stairs access is consistent with your past practices.

3) People opposed to the stairs have legitimate past problems that are not necessarily part of current options.

4) Removal of the stairs at this time would reduce the options for a significant number of possible future uses of the entire Haiku Valley.

5) It's possible that achievable solutions can be politically achieved in the not too distant future.

Thank you for your consideration.

William Ridgway, Ph.D.
Pacific Heights

Hawaiian Trail and Mountain Club

August 20, 2015

Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu HI 96843

Dear Board of Water Supply,

Please accept this letter in strong support of preserving and maintaining Ha'ikū Stairs by developing a managed access arrangement similar to Hanauma Bay. Ha'ikū Stairs is one of Hawai'i's state treasures. It is a truly unique hiking experience: one which needs to be restored and kept as a precious jewel.

Please consider some of the reasons why we think maintaining Ha'ikū Stairs is the right choice for Hawai'i:

- The stairs are an historic resource, determined to be eligible for the national and state historic registers and thus protected under the provisions of the National Historic Preservation Act.
- Preserving the stairs was a condition of their release as excess federal property.
- The Stairs are unique. They provide the only accessible way to experience the windward pali, along with its micro-environments, plants, weather and geology.
- Over 50 species of native vascular plants exist along the stairs that collectively are not readily observable in other venues.
- The Stairs are a world-famous climb, for which there is substantial monetary value in managed use, returns from which would pay for management and programs.
- There are multiple dimensions of educational value, both academic and self-developmental, for students in organized programs of education using the Stairs.
- The Stairs are in good physical condition.
- The Stairs are safe. There is no history of serious accidents on the Stairs after decades of use.

Mailing: PO Box 2238 Honolulu, Hawaii 96804
Clubhouse: 41-023 Puuone Street Waimanalo, Hawaii 96795
Web: http://htmclub.org

- The Stairs are one of the most beautiful hikes in the world.

We have an opportunity to make good public use of the public investment in Ha'ikū Stairs, and to solve a problem of community concern. We urge you to create a managed access program.

Please note: This testimony may be presented orally on Monday August 24 by another Director of the Hawaiian Trail & Mountain Club.

Sincerely,

Barbara C. Bruno
President, Hawaiian Trail & Mountain Club

Mailing: PO Box 2238 Honolulu, Hawaii 96804
Clubhouse: 41-023 Puuone Street Waimanalo, Hawaii 96795
Web: http://htmclub.org

Testimony submitted to the Regular Meeting of the BWS on August 24, 2015 by:

Rae Leong
45-505 Lolii St. Kaneohe 96744
Rleong04@yahoo.com
(808) 284-2211

I would like to clearly state that my position is to REMOVE the Haiku Stairs.

My home sits adjacent to the BWS Puoni Street gate which is one of many access points for trespassers to get to the Haiku Stairs. Disrespectful trespassers have been a problem that my community and neighborhood have endured and battled for 10+ years.
These trespassers are primarily visitors, tourist and military and in order to get to the Stairs, the trespassers have:

1) walked through our yards and told us to control our dogs
2) walked on our walls
3) hung onto our fencing which has compromised the integrity of the fencing
4) used our water to wash off AND left the water running
5) left their rubbish in or around our neighborhood that we've had to pick-up
6) previously blocked our mail boxes with their cars which prevented mail delivery
7) previously blocked rubbish bins with their cars which prevented rubbish pickup
8) have been disrespected when asked to leave the neighborhood or have taken pictures of them and their vehicles license plates – been shown the finger, been challenged to fights
9) come into the neighborhood during the day to do reconnaissance so they know where to access and to try to evade the guards and come up all hours of the night disrupting our sleep
10) use social media to give directions on how to access the Stairs and blatantly state how to avoid the guard and HPD
11) use taxi's to drop them off and pick them up to avoid their cars parking in the neighborhood
12) paid off the guards to ensure their access is not hindered
13) require assistance which requires HFD to respond AND the taxpayers pay for that rescue

My neighborhood has attended numerous Neighborhood Board meetings to request assistance to no avail; in my opinion it's because several members on the Board are members of the Friends of Haiku; my counterpart Ken Rose and I spent at least 3 months in weekly meetings last year with a focus group that was coordinated by Councilmember Ikaika Anderson to come up with a recommendation. The focus group was informed that WCC agreed to grant access through the college provided that parking was off-site and there was no disruption to the students and staff. Against my and Ken Rose's wishes, this recommendation was submitted to Councilmember Anderson and as I understand, did not "fly" because WCC (Windward Community College) did not agree to grant access via the college to get to the Stairs.

In closing, I stand firm with my original statement, REMOVE the Haiku Stairs with concurrence from my neighborhood.

From: Bill Sager [mailto:bsager42@gmail.com]
Sent: Monday, August 17, 2015 3:22 PM
To: BWS Board
Subject: Testimony - Haiku Stairs

I am a member of the Kaneohe Neighborhood Board, and was a member of the subcommittee which studied how to resolve community issues related to Haiku stairs.

The subcommittee recommended an access through Windward Community College and just outside of the Haiku Valley side of the Hawaii State Hospital. It is an easy route and volunteers can construct a safe trail within a few days.

This route will remove traffic from the Haiku community and will minimize conflicts between hikers and residents.

This was recommended as an interim solution which will provide for controlled access and can easily generate income sufficient to support proper management of hiker access. Ultimately I want to see a passive, cultural park developed on the ex-Coast Guard area of Haiku Valley.

The most difficult issue is that of obtaining rights of way from the various public landowners who control access. This can be resolved when reasonable people want to find a solution.

When considering the long-term management of Haiku Valley, I support the Kaneohe-Hawaii Civic Club's management proposal to develop a cultural Park in the valley. When the valley is finally blessed with an effectively implemented management plan, Haiku Stairs will become an important part of the cultural Park. The stairs are unique in the world and give people access to cultural and historic resources and to a series of natural ecosystems.

On the safety issue, the Coast Guard allowed access to the stairs for years and thousands of people climbed the stairs without incident. Even with the uncontrolled illiegal hikers there have been no falls and the only incidents have been lost and exhausted hikers and there have been no incidents directly related to the stairs.

The interest in the stairs and the efforts people are taking to climb them prove their popularity. Properly managed, the stairs are a resource that has similar income potential to Hanauma Bay and Diamond Head.

Opening the stairs has been blocked by short sited politicians and government bureacrats with various political, personal and institutional agendas. Instead of institutions with no appreciation for outdoor recreation, we need leaders who will take a positive point of view and who have a vision of what Haiku Stairs can mean to Kaneohe, Hawaii and the world.

I agree with those visionaries who want to develop a Cultural Park in the valley and who see Haiku Stairs as an important feature within that Park.

Bill Sager, 808-375-1114
Helping you use the internet to spread your message, build teams and create income. Create and Promote your website. Build you opt-in list. Start building you business or organization.
Contact me to find out how.

Laukahi HI 96821
August 23, 2015

To: Chair, Honolulu Board of Water Supply

Breathtakingly beautiful and irreplaceable, the grandeur of Haiku Stairs is world-renowned. Reaching altitudes greater than two thousand and eight hundred feet, if one were to brave the nearly four thousand steel steps to the Puu Keahiakahoe summit—they would behold all of Kaneohe. The view and journey of Haiku Stairs is rumored to be awe-inspiring. It is truly unfortunate, that deconstruction of the Stairs is currently being proposed.

Today, the Stairs have been plagued with poor circumstances and controversy, most of which have been caused solely by reckless and irresponsible users. Despite being closed, many enthusiasts continue to be drawn to the Stairs, going to drastic lengths to gain access and in doing so, they tarnish the reputation of the Stairs. Many decades ago, when Haiku Stairs was still open to the public, thousands of users would enjoy its beauty without serious injury or disrupting the surrounding neighborhood. If a new owner of the Stairs were to reopen them today, tourists and residents alike would rejoice to be given back such a treasure of Hawaii.

Respecting and being close to nature are a major part of Hawaii's culture; enthusiasts would love nothing more than to be able to hike the Stairs without causing trouble. Haiku Stairs is extremely valuable for educational purposes, promotes an active healthy lifestyle, and is easily one of Hawaii's greatest natural attractions.

With Hawaii rapidly industrializing, natural splendors such as the Stairs are becoming rare, it would be most unfortunate to only realize this when it is too late. I hope that the Board of Water Supply will recognize the importance of Haiku Stairs and allow time to find a new owner.

Aloha,
Andy Yu

-----Original Message-----
From: Lois [mailto:lbc628@gmail.com]
Sent: Monday, August 24, 2015 7:32 AM
To: BWS Board
Subject: haiku stairs

>
>
> Please fix the Haiku Stairs and find a solution to the problem of not allowing hikers up them. There are many things that can be done to keep them open. Please work with the community!!! If you have to sign in and sign a waiver, then let's do that. The Stairs are an iconic landmark and a chance for people to commune with nature and get out and exercise.
> Lois Crozer
> Kailua

Kaneohe HI 96744
August 21, 2015

To: Chair, Honolulu Board of Water Supply

It is regrettable that circumstances have brought together the Board of Water Supply, whose primary interest is in supplying adequate and safe water to residents of Oahu, and the Haʻikū Stairs, one of the historically safest, most popular, educationally, recreationally, and historically valuable of our outdoor assets.

The reputation of Haʻikū Stairs has suffered much bad and misleading publicity due to misunderstandings and negative comments by people who did not know all the facts. For example, stories of "rescues" from Haʻikū Stairs have proved to be reports of rescues of hikers on trails away from the Stairs.

In many years of use by hikers when it was open and legal while under auspices of the Coast Guard, no rescues due to injury from the Stairs and no record of neighborhood disturbances were reported. In the years since its closure by the Coast Guard and access prohibited by its new owners, use by hikers (now illegal) continued, still with no injuries or rescues due to injury from the Stairs, but with much disturbance to the nearby neighborhoods. Many tens of thousands of enthusiasts have climbed the Stairs with no reported serious injuries and no needed rescues due to injuries. The admittedly serious trespassing problems can be attributed to the fact that the Stairs are closed; there was no problem when 10,000 people a year climbed while allowed by the Coast Guard.

To those who know the Haʻikū stairs, its wartime history, its years of safe use by educators, kamaʻaina, and visitors to the Island, it is sad that its fate has continually been in the hands of those who know and care least about its many virtues.

We sincerely hope the Board of Water Supply will recognize the greater good of delaying plans for deconstruction, leaving time to seek a new owner for the Stairs so this world-famous and historically valuable island asset will be preserved.

Aloha pumehana,

John M. Flanigan
Chairman Emeritus
Friends of Haiku Stairs

-----Original Message-----
From: Annette Kaohelaulii [mailto:annettesadventures@juno.com]
Sent: Monday, August 24, 2015 8:06 AM
To: BWS Board
Subject: Haiku Stairs

I would like to express my opinion about preserving the Haiku Stairs. I would hope the community will band together and raise funds to purchase the property the stair are on and eventually develop a nature park and safe activity for hikers. I hiked the stairs many years ago, and enjoyed the views and the opportunity to see native Hawaiian plants without a long hike to the summit of the Koolau from other trails.

Please find a way to keep the stairs.

Sincerely,

Annette Kaohelaulii
355 Aoloa Street, Apt. D 101
Kailua, HI 96734

Heavy rains mean flooding
Anywhere it rains it can flood. Learn your risk. Get flood insurance.
http://thirdpartyoffers.juno.com/TGL3141/55db5d158cab65d140c48st01vuc

From: Gmail [mailto:klynch@lava.net]
Sent: Friday, August 21, 2015 4:32 PM
To: BWS Board
Subject: TESTIMONY FOR MONDAY, AUG.24

August 21, 2015

WRITTEN TESTIMONY FOR YOUR MEETING OF AUG. 24, 2015
SUBJECT: YOUR ACTION CONCERNING HAIKU STAIRS

Dear Board of Water Supply members,

The purpose of this testimony is to urge you to do whatever you can to facilitate the reopening of the Haiku Stairs.

As you already know from the Friends of Haiku Stairs and others, the Haiku Stairs -- managed properly -- can be an exceptional cultural, educational and recreational resource. Their proven popularity suggests that the costs could be covered through a use permit system.

As a Hawaiian-fern specialist, I was invited to help with a native plant survey of the Haiku Stairs in September 2012. It was a memorable experience! And I saw that the Stairs can let more people enjoy Hawaiian plant tapestries and spectacular ridgeline panoramas safely -- **without** trampling the vegetation and causing erosion. (In this, the Stairs can be compared to the boardwalks that protect frequently-visited wetter areas -- such as on Ka'ala and in the Kamakou Preserve.)
The Haiku Stairs are blessed with a support group that will do whatever it can to make your job easier as you work to assure the future of this unique resource. I hope you will give them the opportunity.

Mahalo,
Kay Lynch

Kay Lynch
Lā'au Hawai'i/The Hawaiian Fern Project
P.O. Box 5364
Kāne'ohe, HI 96744
808-485-9352
klynch@lava.net

From: mkw@hawaii.rr.com [mailto:mkw@hawaii.rr.com]
Sent: Sunday, August 23, 2015 8:40 PM
To: BWS Board
Subject: Haiku Stairs Testimony for 8/24/15

1111 Ko'oho'o Place
Kailua, HI 96734
August 23, 2015

RE: Haiku Stairs

Dear Honolulu Board of Water Supply Chair,

The Board of Water Supply is in a unique position effectively setting the course for Haiku Stairs, which is a recognized world class historical and cultural asset. It is an asset of unparalleled beauty, an asset to be treasured not dismantled. I am writing on behalf of a number of concerned citizens and numerous tourists in strong support of preserving and maintaining the Stairs.

During the years it was open and managed by the US Coast Guard this stairway drew kama'aina, outdoor enthusiasts, biologists, history buffs, and engineers, to name a few. They herald its unparalleled beauty and became dedicated followers and ardent supporters. Adventuring the Staircase is unique. There IS nothing like it in the *world*.

Consequently, today there are many locals and tourists willing to pay an access fee for the privilege of experiencing this unique slice of paradise. Believe me, they would jump at the chance! Imagine combining the Staircase with an educational experience showcasing the valley, the importance of the watershed district, and the Hawaiian and WWII history, not to mention the wonderful public relations chance for the Board of Water Supply. Imagine the tourism opportunity. Think Diamond Head and Hanauma Bay. Both have been effectively managed using fee structures.

Since the city inherited the Stairs from DHHL, numerous volunteers from a variety of organizations have been willing to work together to help bring this vision to fruition. Harnessing their energy and ideas likely would result in an end product with broad appeal *and* a source of income.

Please, let's be circumspect about this. Wondrous resources like this should be safeguarded and made available to the people of Hawaii as well as those we welcome as tourists, encouraging them to come, see, and experience our wonderful island. Thank you for preserving and using this resource versus destroying a world class treasure.

Sincerely,

Marianne K. Whiting
Lifetime member
Friends of the Haiku Stairs

TO: Duane R. Miyashiro, Chair
Adam C. Wong, Vice Chair
Board Members of the Board of Water Supply

HEARING: Regular Meeting of the Board of Water Supply
Monday, August 24, 2015

FROM: Clyde T. Imada
46-415A Kahuhipa St., Kaneohe, HI 96744
imadac002@hawaii.rr.com

RE: Haiku Stairs

I respectfully support the request by the Friends of Haiku Stairs to the Members of the Board to defer for six months a vote to set aside $500,000 to study the permitting process necessary to conduct a dismantling of the Haiku Stairs.

A deferral would give the Friends of Haiku Stairs and others time to work on identifying another agency willing to take over the land from the Board of Water Supply. The Friends eventual goal is to reopen the Stairs to the general public and develop a cultural preserve in Haiku Valley.

My interest in preserving the Haiku Stairs comes from a botanical perspective. I have been a botanist by vocation for over 30 years, and have had the opportunity to hike to many beautiful native upland forests throughout the Hawaiian Islands. Hands down, the Haiku Stairs hike is a unique treasure unlike any other in the State.

Not only does this magnificent steel structure afford a totally unique opportunity to ascend a steep ridgeline with relative ease and confidence, providing unparalleled breathtaking views, it also provides exceptional opportunities to educate the participant about some of the fascinating stories that make Hawaiian natural history so special.

Opportunities are increasingly rare these days for urban dwellers to get a taste of the wild wet uplands of the Koolau summit. The dismantling of the Stairs would remove by far the fastest, most readily accessible route for experiencing a native wet forest on Oahu, and with it the unique golden opportunity to convey stories about the importance of watershed preservation and the unique flora and fauna that are the foundation of the watershed.

One of the wonderful aspects of the Stairs is that it quickly climbs through a variety of climatic zones, and the vegetation changes become readily apparent. It serves as a wonderful outdoor teaching tool to learn how climate governs the plants you might typically see in a given area---sort of a condensed Cliff Notes version of how Hawaii's vegetation has changed over time, with ample representation of native plants that populated the area eons before the original Polynesian settlers arrived with their own economic plants, and the explosion of new, often invasive, plant introductions in the wake of Western rediscovery of the Islands. To alternatively reach similar wet native

upland habitats on a public trail on Oahu generally requires much more time and effort and a round-trip hike of 6 to 12 miles.

On sponsored designated workdays when the Friends of Haiku Stairs conducted routine trail cleanup and stair maintenance, I have assisted with their efforts to document all of the plants found growing along the Stairs. One of their goals is to provide interpretation for many of the interesting plants growing along the Stairs. A preliminary plant inventory list based on multiple surveys along the length of the Stairs have identified about 125 different kinds of plants, with about 60% of them native to the Hawaiian Islands. There are a lot of stories that can be potentially be told, if the Stairs can remain in place.

Respectfully yours,

Clyde T. Imada
46-415A Kahuhipa St., Kaneohe, HI 96744
imadac002@hawaii.rr.com

ITEM FOR INFORMATION NO. 2

"August 24, 2015

MOANALUA AND WAIMALU AQUIFER SYSTEMS UPDATE

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Moanalua and Waimalu Aquifer Systems Update

Erwin Kawata, Water Quality Division Program Administrator, will present a brief summary of the Board of Water Supply's (BWS) meeting with the United States Environmental Protection Agency and the Hawaii Department of Health to discuss the BWS comments to the proposed Red Hill Bulk Fuel Storage Facility Administrative Order on Consent and Statement of Work.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION

Erwin Kawata, Water Quality Division Program Administrator, gave the presentation. He provided an update on the status of Red Hill's Fuel Storage Facility Administrative Order on Consent (AOC) and Statement of Work (SOW). BWS met with EPA and DOH on August 7, 2015 to discuss BWS's comments submitted to the AOC and SOW that were due by July 20, 2015. A number of issues were discussed in the meeting including SOW work time frames being too long and lacking firm deadlines; full disclosure and access to all records; the need to clarify the corrosion protection requirements under the new underground storage tank regulations and EPA sole source aquifer provisions; and approaches for conducting site characterizations and clean up goals.

Ms. Sproat asked if EPA provided any indication when a decision would be made on the AOC and SOW. Mr. Kawata responded no, however EPA did indicate that they received 140 sets of comments and were planning to respond to all of them, but did not indicate when. Mr. Lau stated that in response to the August 7 meeting with EPA and DOH, BWS submitted additional responses to questions raised at the meeting.

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Board of Water Supply

Moanalua and Waimalu Aquifer Systems Update

BWS Meeting with EPA/DOH to discuss BWS Comments to the Red Hill Bulk Fuel Storage Facility Administrative Order on Consent (AOC) and Statement of Work (SOW)

Board Meeting

August 24, 2015

Today's Discussion

- BWS met with EPA/DOH on August 7, 2015
  - AOC/SOW background.
  - BWS comments to AOC/SOW.
  - EPA/DOH questions to BWS comments.
- Next Steps

AOC / SOW Background

- June 1, 2015 EPA and DOH released for public review and comment a proposed AOC and SOW
- Minimize the threat of future leaks at Red Hill
- Initial July 1 comment deadline extended to July 20, 2015

BWS Comments – AOC & SOW

1. Need appropriate site characterization, clean up existing below-ground contamination, and install a properly designed monitoring well network.
2. Focuses on continued study of improvements when appropriate solutions already identified. Need action to quickly eliminate the threat from new fuel releases.

BWS Comments – cont.

3. SOW planning and work timeframes are too long and lack firm deadlines for making changes. Allows Facility operations to continue unchanged for decades.
4. Unacceptably limits public and stakeholder participation.
5. Needs to require full disclosure and access to all records, data, and studies about fuel leaks at the Facility over its history.

BWS Comments – cont.

6. AOC and SOW able to override existing and future regulations that apply to the Facility. If there is a conflict between AOC/SOW and the rules, the most stringent regulatory requirements should apply.
7. Does not require commitment to provide sufficient funding to enable timely completion of AOC and SOW tasks.

EPA/DOH Meeting Topics

- BWS Overall Concerns Related to AOC
- EPA's New UST Regulations
- Sole Source Aquifer Concerns
- Characterization of Risk to Water Supply
- Goals for Investigation and Cleanup
- Options and Actions to Increase Transparency
- Funding for Major Upgrades
- DOH and EPA Description of Process Going Forward and Associated Timelines

BWS/EPA/DOH Discussion –cont.

- BWS Overall Concerns about AOC
  - Ignores importance of aquifer to Oahu.
  - SOW too vague, lack specifics and defined due dates for completion of work.
- EPA's New UST Regulations
  - Corrosion protection requirements do not apply to Red Hill per EPA. BWS disagrees.
  - BWS corrosion consultants say protection should be installed to slow the corrosion rate.
  - BWS requested opinion of USEPA Office of General Counsel, Washington, D.C.

BWS/EPA/DOH Discussion –cont.

- Sole Source Aquifer (SSA) Concerns
  - Per EPA, SSA designation does not have a regulatory impact on the Red Hill work because the work will be a direct action of the Federal Government and not through federal financial assistance.
  - BWS disagrees. Federal financial assistance is defined as benefits provided directly as aid to a project in any form.
  - Legal review of funding assistance definition needed.

BWS/EPA/DOH Discussion –cont.

- Characterization of Risk to Water Supply
  - Level of detail in characterizing the site. Use existing EPA and DOH protocols. Existing requirements in SOW too vague.
- Goals for Investigation and Cleanup
  - Site specific.
  - Consult existing Resource Conservation and Recovery Act (RCRA) and case study examples for guidance.

BWS/EPA/DOH Discussion –cont.

- Options and Actions to Increase Transparency
  - Stakeholder consultation "as needed" and providing the public with synopsis not acceptable nor transparent. Full disclosure helps public know the issues and challenges.
- Funding for Major Upgrades
  - Existing AOC/SOW mechanism too open-ended. AOC should prescribe written funding commitments.

BWS/EPA/DOH Discussion –cont.

- DOH and EPA Description of Process Going Forward and Associated Timelines
  - Complete review and respond to comments received.
  - Decide on any revisions to AOC/SOW and discuss with Navy/DLA.
  - EPA wants to include BWS in AOC /SOW discussion and implementation of work products.
  - Confidentiality vs. public transparency – EPA/DOH to provide language for BWS review.
  - EPA/DOH to have final decision-making authority.
  - No timelines given.

Next Steps

- EPA
  - Planning to submit additional questions to BWS.
  - Will clarify corrosion protection requirements as it applies to Red Hill under new rules.
  - Will clarify federal financial assistance definition under SSA.
- BWS
  - 8/12/15 – Navy and DOH toured BWS Halawa Shaft.
  - Reviewed additional reports.

Next Steps – cont.

- 1998 Tank 19 Study (Enterprise Engineering)

Concept	Base cost	For 20 Tanks
• Composite Tank	$ 5,298,000	$ 105.9 M
• Internal Bladder Type Liner	$ 2,339,000	$ 46.8 M
• Repair and Recoat Existing Tank	$ 4,610,000	$ 92.2 M
Additional items for each concept		
• Extend tell-tale piping to upper dome for cleaning	$ 111,000	
• Under tank leak detection	$ 85,000	$ 1.7 M
• Cathodic protection system (Tank 19 only)	$ 551,000	
• Coat tank barrel (composite tank only)	$ 559,000	

Next Steps – cont.

- 2008 Market Survey of Leak Detection Systems for the Red Hill Fuel Storage Facility (Baker)
  - Various leak detection systems evaluated.
  - Upgrade existing system.
  - Mass Technology Corporation's MTPMMS system is best option as a primary leak detection solution for Red Hill.

Next Steps – cont.

- 2010 Red Hill Shaft Treatment Study (HDR)
  - The purpose of this study: to "evaluate and identify feasible treatment technologies and treatment systems for removing potential contaminants of concern."
  - "The contaminants of concern for the Red Hill Well include volatile and semi-volatile organic compounds associated with fuel."
  - Treatment facility action levels.
    - RHMW01 TPH greater than or equal to 2,000 µg/L.
    - RHMW02 TPH greater than or equal to 4,500 µg/L for an extended time or if a light non-aqueous phase liquid plume is observed.
  - Air stripping/GAC options: $ 41M - $ 51M.
  - Annual O & M: $6.3 M - $ 7 M.

Next Steps – cont.

- Navy letter to BWS dated May 18, 2015 requesting water service
  - "In the event that the Red Hill Shaft is unavailable for use."
  - The work is "part of Navy Region Hawaii's routine contingency planning."
  - "Supplements a prior study that was completed in 2010 which evaluated treatment technologies for the Red Hill Shaft, but did not look at other non-treatment alternatives."

Next Steps – cont.

- BWS replied on July 1 requesting additional information
  - Identify specific "event" the Navy anticipates to cause the Red Hill Shaft to be unavailable as this "event" could affect BWS ability to grant the Navy's request.
  - Identify term of the event that causes the Red Hill Shaft to be unavailable.
  - BWS requirements for an alternative water supplies report
    - Feasibility of Navy constructing its own replacement water supplies.
    - Advanced water conservation measures such as low flow water fixtures and xeriscape landscaping.
    - Construction of tertiary recycled water treatment systems for irrigation.

Questions

ITEM FOR INFORMATION NO. 3

"August 24, 2015

ENTERPRISE ORGANIZATIONAL STUDY UPDATE

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Enterprise Organizational Study Update

An Enterprise Organizational Study was initiated to analyze the current Board of Water Supply (BWS) organizational structure and work processes, recommend improvements to increase operational efficiencies and develop an implementation plan. The implementation plan will include the appropriate organizational structure, span of control, staffing levels, competencies and training programs specifically for BWS. The selected consultant, Matrix Consulting Group, from Mountain View, California, began their work on June 29, 2015, and they have since interviewed nearly 130 managers and supervisors at BWS, including the Board Chair.

Matrix Consulting is currently developing an employee satisfaction survey that will be sent to all BWS staff to compare their responses to similar questions posed to similar water utilities. Future tasks include: organization cultural survey; succession, recruitment and retention planning; review of ongoing organizational initiatives; optimal organizational structure; training requirements; benchmarking and performance metrics; implementation plans; and outreach and communication plans.

The entire engagement is expected to be completed by the end of December 2015.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer"

The foregoing was for information only.

DISCUSSION

Robert Morita of the Executive Support Office gave the report. There were no comments or discussion.

ITEM FOR INFORMATION NO. 4

Quarter Awarded	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Awarded to Date	Total Budgeted
Design Contracts Awarded (#/$)	1	$1,350,000.00	0	$0.00	13	$2,970,287.97	36	$13,335,095.34	$17,655,383.31	$17,314,857.00
Construction Contracts Awarded (#/$)	3	$174,286.35	3	$534,508.00	10	$5,858,333.25	28	$37,232,446.00	$43,794,671.60	$42,268,000.00
Project Totals	4	$1,524,286.35	3	$534,508.00	23	$8,828,621.22	64	$50,567,541.34	$61,450,054.91	$59,582,857.00

Quarter Completed	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Totals
Design Contracts Completed (#/$)	3	$357,005.20	4	$774,478.00	2	$226,327.00	1	$100,705.00	$1,328,015.00
Construction Contracts Completed (#/$)	2	$2,106,110.00	0	$0.00	0	$0.00	3	$145,659.91	$12,775,661.53
Totals	5	$2,463,115.20	4	$774,478.00	2	$226,327.00	4	$246,364.91	$14,103,676.53

Ongoing Projects	
Ongoing Design Projects (#)	172
Ongoing Design Projects ($)	$68,869,846.76
Ongoing Construction Projects (#)	105
Ongoing Construction Projects ($)	$140,528,787.69

CAPITAL IMPROVEMENT PROGRAM QUARTERLY UPDATE
ALL DIVISIONS

DESIGN AND CONSTRUCTION PROJECTS AWARDED - FOURTH QUARTER FY 2015

Item #	Project Title	Expend Type	Budget Amount	Awarded
001	Hauula Well Replacement	P & E	$80,000.00	$80,400.00
003	Ala Wai Membrane Bioreactor Facility RE.invest Initiative	P & E	$300,000.00	$316,000.00
005a	Construction Management for Kamehameha Highway Sunset Beach Water System Improvements, 16-Inch Main	CONST	$590,236.00	$590,236.20
005b	Construction Management for Pensacola Street Water System Improvements	CONST	$386,930.00	$386,929.80
005A	Ground Water Quality Assessment and Characterization	P & E	$800,000.00	$800,000.00
006G	Honouliuli Wells II - Replacement of Pump No. 4	CONST	$380,000.00	$693,000.00
006H	Manoa Well II Motor Control Upgrade for Well Pump	CONST	$81,368.00	$156,299.00
008	Mariners Ridge Booster I: Replace Pumping Units	CONST	$970,000.00	$954,000.00
013	Kaonohi Booster I: Replace Pumping Units	CONST	$585,000.00	$538,000.00
015	Mililani Wells IV - Replace Pump No. 2	CONST	$500,000.00	$1,049,000.00
017	Mililani Wells II Improvements - PRV Assembly Installation	P & E	$150,000.00	$118,060.00
018	Punanani Wells MCC Replacement	P & E	$300,000.00	$298,551.00
021A	Kaluanui Line Booster Renovation	CONST	$935,000.00	$493,000.00
022	Liliha Water System Improvements, Part V	CONST	$2,600,000.00	$2,802,700.00
023	Diamond Head Water System Improvements, Part II	CONST	$3,700,000.00	$4,585,347.00

025	Pensacola Street Water System Improvements	CONST	$2,050,000.00	$2,984,722.00
026	Wilhelmina Rise Water System Improvements, Part IV	CONST	$6,000,000.00	$7,480,167.00
027A	Kapahulu Water System Improvements, Part I	CONST	$4,000,000.00	$4,347,425.00
028	Kawananakoa Place 8-Inch Main	CONST	$750,000.00	$913,900.00
029	Kuahea Street 8-Inch Main, Phase II	CONST	$200,000.00	$280,000.00
030	Fire Hydrant Installations at Various Locations, Part A	CONST	$300,000.00	$340,700.00
032	Palolo Water System Improvements, Part III	P & E	$740,000.00	$979,515.00
033	Palolo Water System Improvements, Part IV	P & E	$670,000.00	$750,000.00
034	Auloa Road and Ulukahiki Street: 12-Inch Main	P & E	$690,000.00	$1,314,202.00
035	Waianae Water System Improvements, Part III	P & E	$690,000.00	$755,915.00
038	Pipeline Tunnel Renovations at Various Locations	P & E	$200,000.00	$760,750.00
040	Keolu Bridge Hangers Replacement & Kailua Heights 230 Reservoir Demolition	P & E	$100,000.00	$122,636.00
040B	Roosevelt Bridge 12-Inch Recycled Water Main	P & E	$400,000.00	$400,000.00
041	Slope Stabilization at Various Facilities	CONST	$3,200,000.00	$2,075,900.00
043D	Reroofing of Beretania Public Service Building (PSB)	CONST	-	$723,000.00
043G	Mauna Olu 530 Nonpotable Reservoir Liner Replacement	CONST	$540,999.00	$540,999.00
043H	Reroofing of Waimalu 217, Waiau 285 & 550, and Pearl City 865 Reservoirs	CONST	$1,868,250.00	$1,868,250.00
043J	Reservoir Repair: Makaha 242 Reservoirs No. 1 & 2	CONST	$504,832.00	$843,856.00
043L	Kalihi Pump Station Outdoor Switchgear Replacement	CONST	$305,470.00	$305,470.00
043R	Kalihi Corporation Yard Fire Alarm System	CONST	$540,969.00	$540,969.00
043T	Repair of Engineering Rooftop PACU	CONST	$44,325.00	$44,325.00
043V	HECO - Kalihi Pump Station Outdoor Electrical Switchgear	CONST	$200,056.00	$200,056.00
047	Storm Water Management Plan Improvements	CONST	$600,000.00	$1,072,867.00

049	Security Fencing at Various Locations	CONST	$600,000.00	$96,328.00
051	Nuuanu Reservoir No. 1 Dam Improvements	P & E	$500,000.00	$146,223.00
052	Website Redesign	P & E	$455,000.00	$416,000.00
054	Security Fencing at Haiku Stairs, Maakua Well, Manoa Chlorinator, Kapunahala 272 and Pearl City 1050 Reservoirs	P & E	$200,000.00	$201,963.12
055A	Pearl City 640 Reservoir, Wells III and Booster No. 2 Repair and Renovation	P & E	$352,287.00	$352,287.00
055B	Wahiawa 1180 Reservoir Repair	P & E	$280,177.00	$280,177.00
055C	Beretania Public Service Building (PSB) Exterior Improvements	P & E	$262,646.00	$262,646.00
055D	Halawa Xeriscape Garden Improvements	P & E	$217,400.00	$217,400.00
055E	Reroofing of Various Pump Buildings	P & E	$96,178.00	$289,912.00
055F	Various Access Road Repairs	P & E	$655,847.00	$655,847.00
060A	Geotechnical Survey for Various Projects	P & E	$123,966.00	$123,966.00
060B	Professional Services for BWS Projects - Archaeological Monitoring Services for Kamehameha Highway: 16-Inch Main, Part I, Sunset Beach (14-059)	P & E	$219,592.00	$219,591.54
060D	Archaeological Services for Punaluu Wells II, Part A: Replacement of Pumps No. 2 and 5 (Job 14-011)	P & E	$29,414.00	$98,840.00
060E	Archaeological Services for Kawananakoa Place 8-Inch Mains (Job 15-028)	P & E	$146,620.00	$146,619.62
060H	Archaeological Services for Kalihi Water System Improvements, Part III (Job 14-022)	P & E	$219,592.00	$219,591.54
060J	Archaeological Services for Pensacola Street Water System Improvements (Job 15-025)	P & E	$89,635.00	$89,635.00
060K	DCAB Fees	P & E	$4,500.00	$4,500.00
060L	Archaeological Services for Maakua Well Unit No. 2	P & E	$7,469.00	$7,469.04
061	Kronos Upgrade	P & E	$857,000.00	$212,141.28

062	Sharepoint Services and Support	P & E	$400,000.00	$399,600.00
064	Beretania Complex Modernization	P & E	$1,000,000.00	$895,668.00
065	Kahuku Wells Unit No. 3	P & E	$220,000.00	$409,372.00
066	Waialae West Well	P & E	$200,000.00	$227,645.00
067	Kalaeloa Desalination Facility	P & E	$300,000.00	$284,784.00
069	Honolulu District 42-Inch Mains, Liliha to Moiliili	P & E	$400,000.00	$802,188.20
	4th Quarter totals		**$44,790,758.00**	**$50,567,541.34**

DESIGN AND CONSTRUCTION PROJECTS COMPLETED - FOURTH QUARTER FY 2015

Job #	Project Title	Completion Date	Contract Amount
15-043B	Waialae Iki Booster No. 1 and Wailupe Line Booster Repainting	4/7/2015	$51,579.00
15-043A	Beretania Employee Parking Lot Fencing	4/8/2015	$12,100.00
2004-048E	Pohakupu 272 Reservoir No. 2 Repair	5/12/2015	$100,705.00
14-004J	Kuliouou Well Converter Replacement	6/20/2015	$81,980.91
	4th Quarter totals		**$246,364.91**

DISCUSSION

Jason Takaki, Capital Projects Program Administrator, gave the report. There were no comments or discussion.

ITEM FOR INFORMATION NO. 5

"August 24, 2015

CAPITAL PROJECTS PROGRAM AND CONSTRUCTION MANAGEMENT UPDATE

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Capital Projects Program and Construction Management Quarterly Update

Jason Takaki, Capital Projects Division Program Administrator, will provide an update on Program and Construction Management projects in the Capital Projects Division.

Respectfully submitted,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION

Jason Takaki, Capital Projects Division Program Administrator, announced that after his presentation, Mike Prett from Brown and Caldwell will give a live demonstration of MANAO, their Project Management Information System (PMIS). Mr. Takaki provided a review of their objectives, their progress to date, areas of current focus, and their next steps. Mr. Takaki stated that the Capital Projects Division is very pleased with the progress of the PMIS and with the support the program is getting from their Branch heads. He explained the key elements of MANAO, showed a typical workflow and showed a diagram of the various stages of project development through completion. Mr. Takaki stated that MANAO automates a repeatable process, brings consistency to project execution, and creates clarity and predictability. He introduced Mike Prett from the Brown and Caldwell's Portland office, Stephanie Chin from Brown and Caldwell's Honolulu office, and Eric Iwamoto from Bowers + Kubota, who is the BWS's consulting firm for construction management.

Mr. Prett provided the Board with a live demonstration of MANAO.

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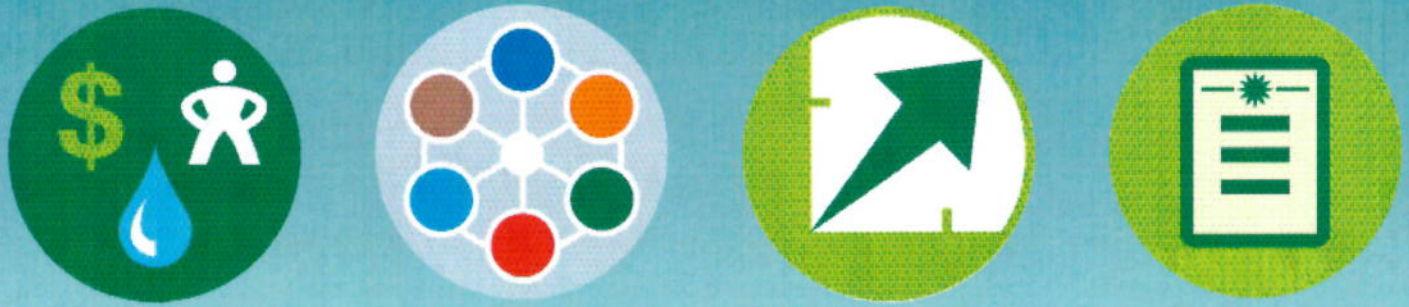
Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu

Capital Projects Program and Construction Management



Board of Water Supply

August 24, 2015

Program Targets

- Our Work
  - Streamline project execution
  - Align business processes to best support the increased number and scale of projects
  - Improve quality control/quality assurance
  - Support the implementation of the Water Master Plan

- Our Organization
  - Standardize operating procedures & training
  - Optimize organization and craft staff succession plans for organizational sustainability

- Our Customers
  - Capitalize on organizational relationships
  - Improve communications

Progress to date

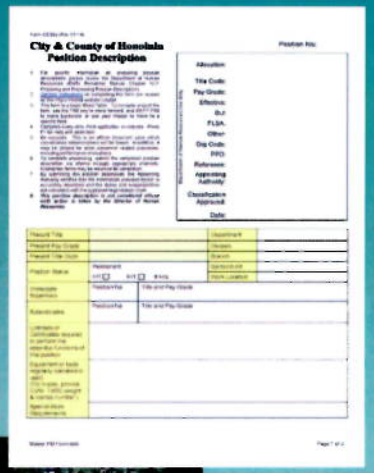
- Core teams continue to develop collaborative solutions to improve operations and crafting action plans for implementation

- Project Management Information System (MANAO) module roll-outs

Current Focus

- Finalized position descriptions and assessing associated organizational structure changes

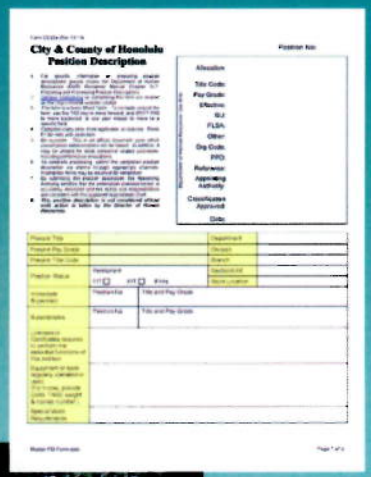
- Continue progress on sample projects to test and enhance workflows improvements
- Staff support on selected priority projects


City & County of Honolulu
Position Description

Current Focus

- Construction Management project close-out
- Continued Construction training program
- Implementation of the Construction Inspector Aide program

- Quarterly meetings with General Contractors Association


City & County of Honolulu
Position Description

Next Steps…

- Project prioritization
- Business Case Evaluation (BCE)
- Risk Criteria Development
- Execution of action plans and improvement implementations
- Rollout of MANAO (PMIS) modules

Next Steps…

- Work with the Human Resources Office in filling new positions
- Construction Inspector Training Program
- Continued consultation with GCA
- Continued project execution assistance to address workload and pilot, implement, and document standard operating procedures

WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu

CPD Optimization Overview

Assess

- Step 1 – Internal gap analysis
- Step 2 – Summarize findings
- Step 3 – Develop initial **Action Plan**

Implement

- Execute **Action Plan** (Engineering and Construction)
  - Develop initial workflows, SOPs, PMIS
- Provide Staff support for selected projects

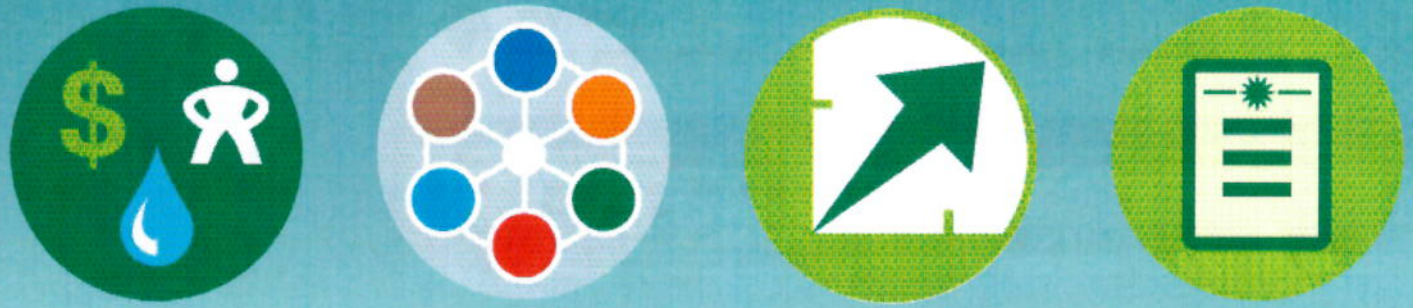
We Are Here

Optimize

- Add / organize staff to best aligned with long-term needs
- Ongoing staff support for selected projects
- Facilitate internal knowledge transfer

Implement and Optimize will continue to occur over several years

Mahalo for your support



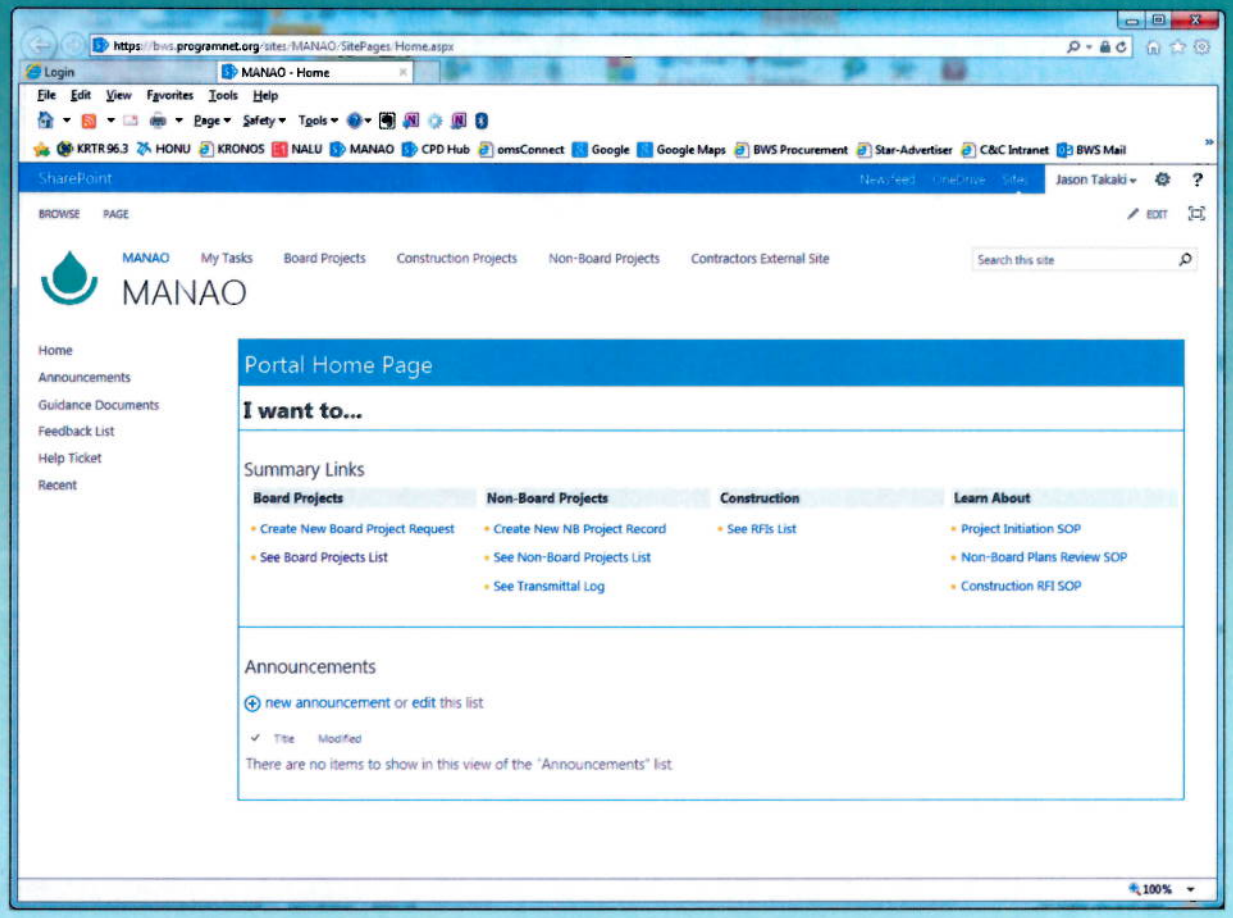
WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

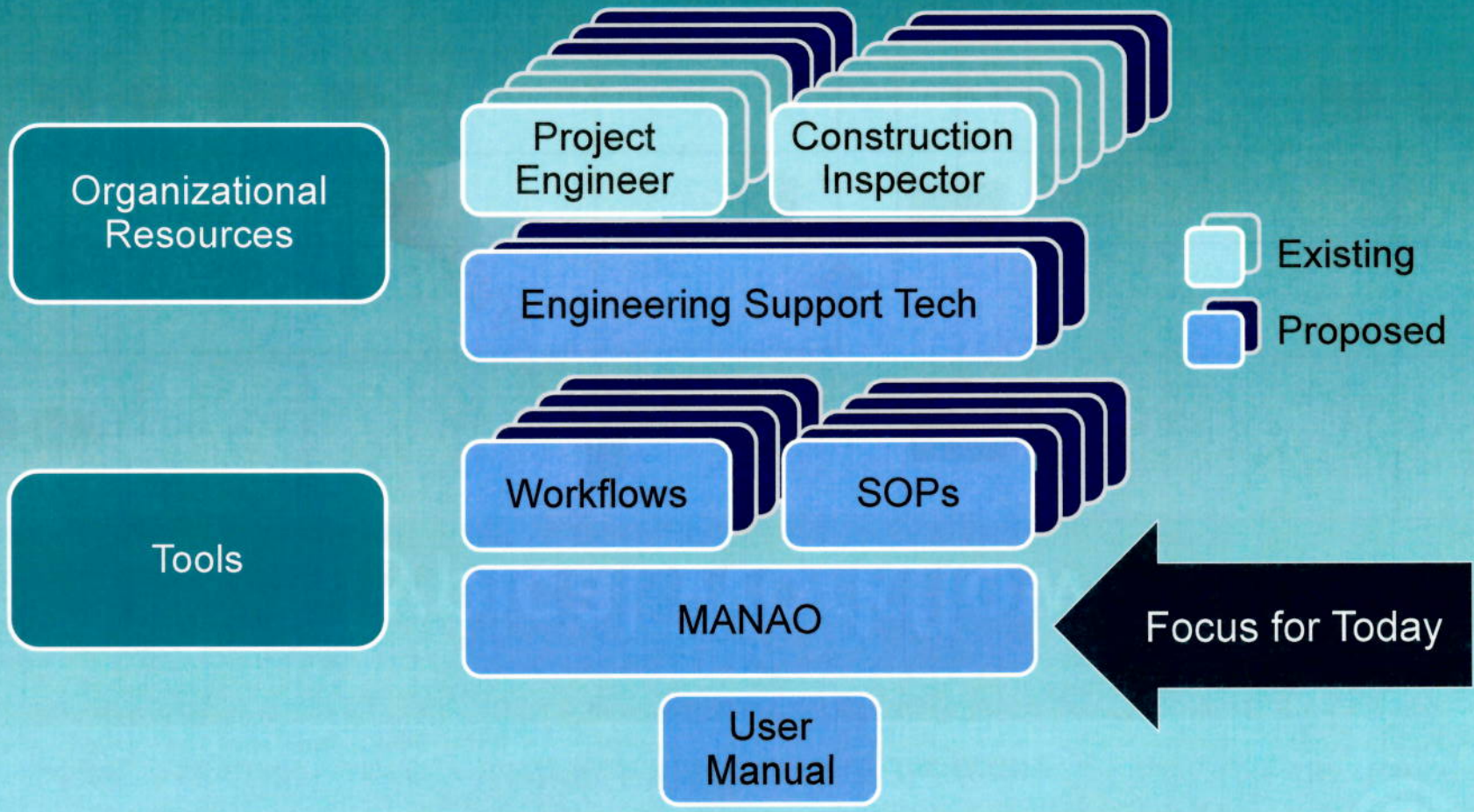
Board of Water Supply
City and County of Honolulu

MANAO Project Management Information System

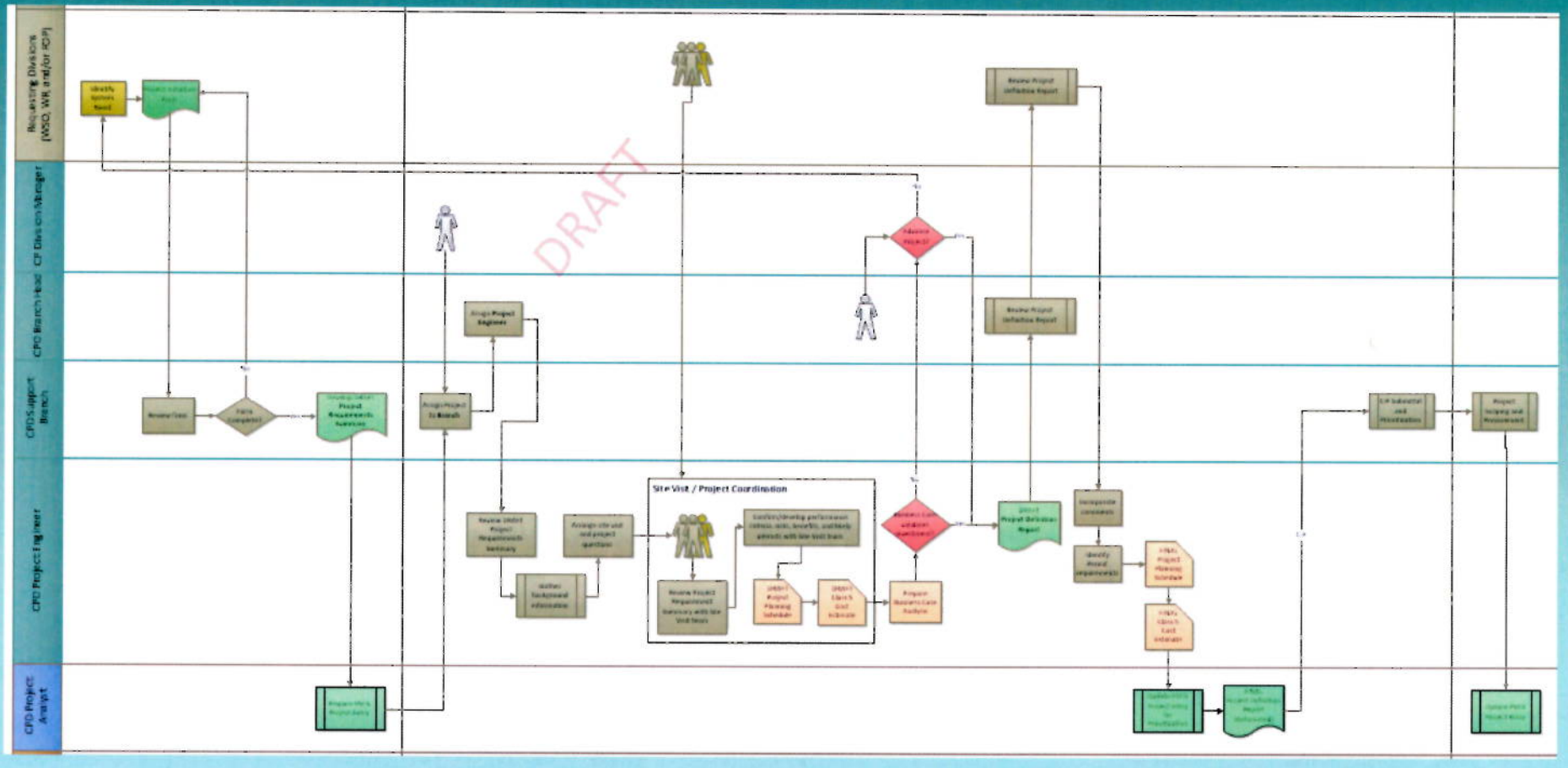
- **M**anagement
- **A**dministration
- **N**otification
- **A**ccountability
- **O**rganization



Key Program Efforts



Typical Workflow



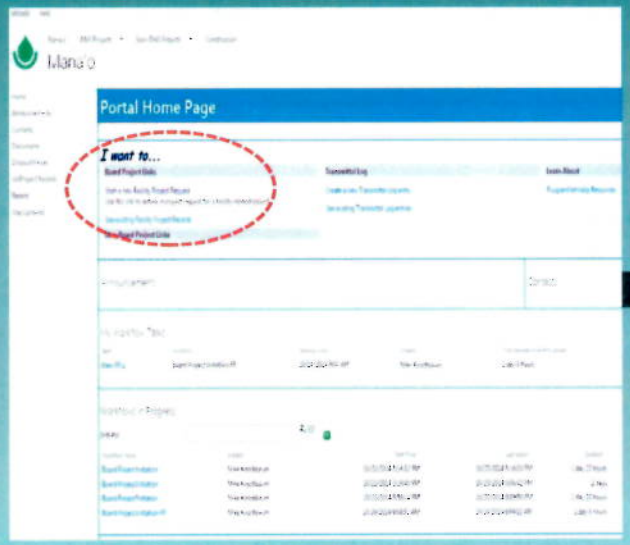
WATER FOR LIFE

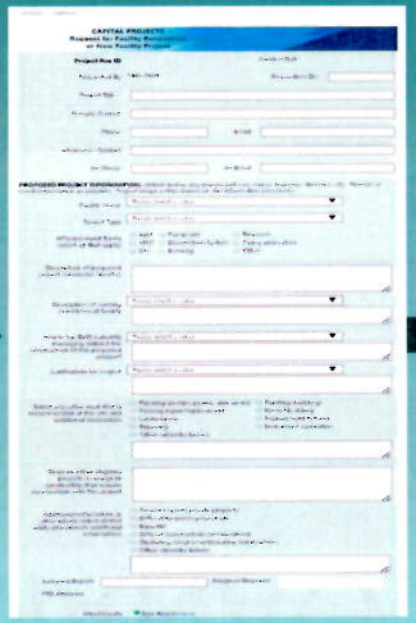
Safe, dependable, and affordable water now and into the future

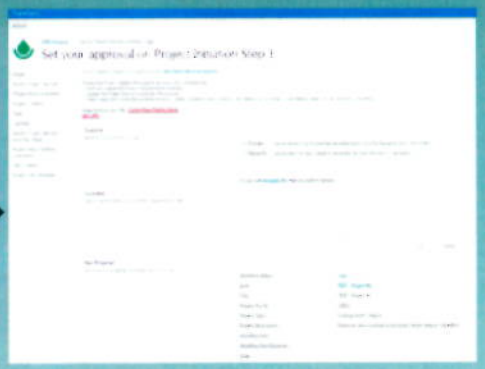
Board of Water Supply
City and County of Honolulu

Workflows in MANAO:

Consistent Repeatable Process





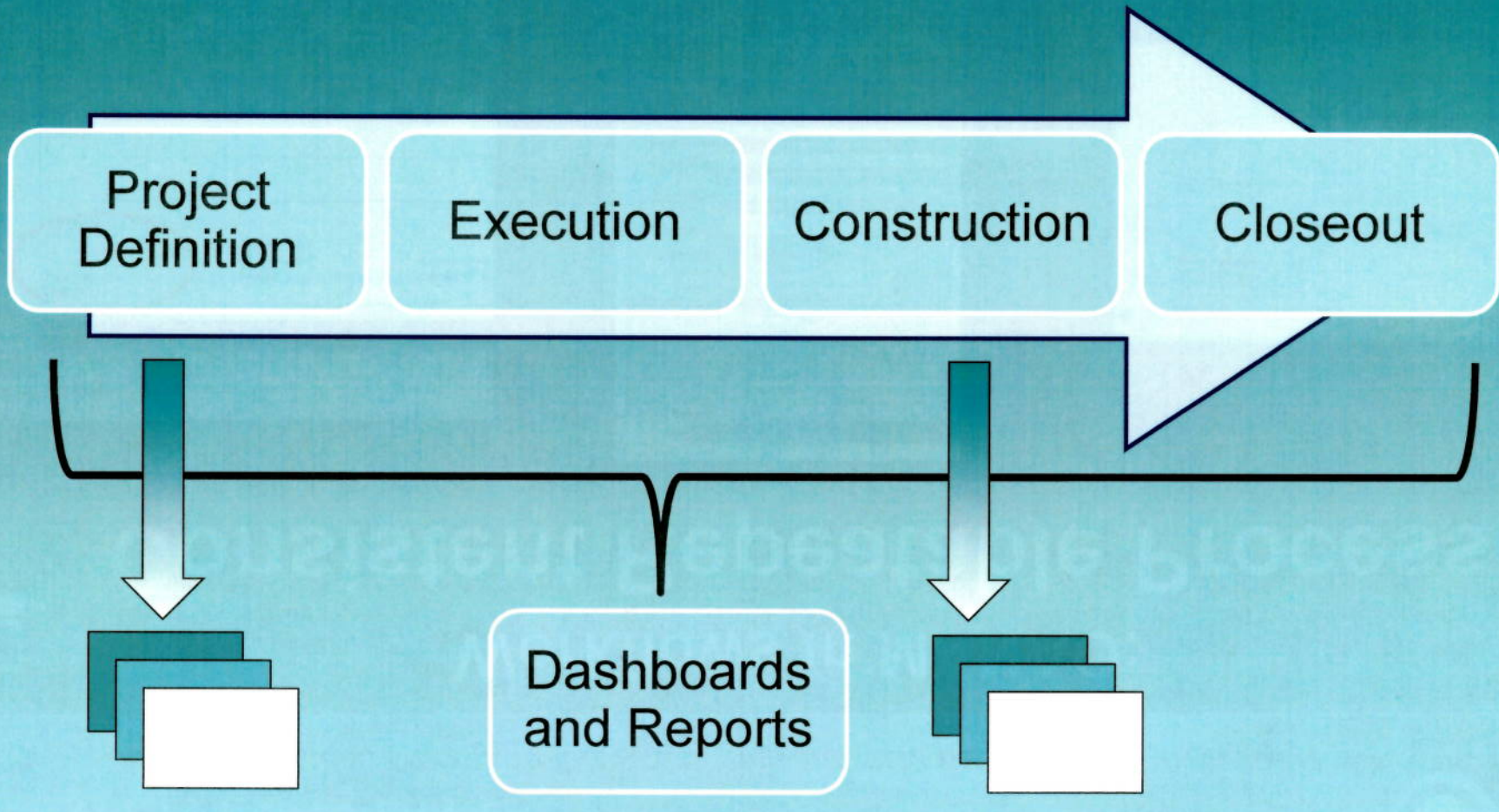


Home Page

"Smart-forms" prompt for input

Auto notify for reviews and direct for next action

MANAO


Project Definition
Execution
Construction
Closeout
Dashboards and Reports

ITEM FOR INFORMATION NO. 6

"August 24, 2015

GROUNDWATER LEVELS

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Status Update of Groundwater Levels at All Index Stations

There are six aquifer index wells within low groundwater status for the production week that ended on August 1, 2015. Moanalua, Pearl City, Punaluu, and Waialua are under a Caution status, while Kaimuki and Makaha are under an Alert status. The weekly production average for the period was 157.49 million gallons per day.

The Board of Water Supply rainfall index for the month of July 2015 was 90 percent of normal, with a 5-month moving average of 90 percent. As of August 11, 2015, the Hawaii Drought Monitor shows abnormally dry to moderate drought conditions across West Oahu through East Honolulu.

The National Weather Service is forecasting above-normal rainfall for August 2015 (primarily associated with a heavy storm season). Climate models indicate El Niño conditions may continue through the winter season, yielding below-normal rainfall from November 2015 through April 2016.

Most index monitor wells continue to exhibit decreasing trends, reflecting the influences of limited rainfall from previous months and the increases in pumpage typical for this time of year.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachments"

The foregoing was for information only.

DISCUSSION

Barry Usagawa, Water Resources Program Administrator, gave the report. He stated that the monitor wells are exhibiting decreasing trends so the Department will extend its water conservation messaging probably through October and will also mail out letters to the 50 largest water users to remind them to conserve. The pumpage is at 158 million gallons per day (mgd), which is about 10 mgd higher than the five-year average, but the highest it has been was 180 mgd.

PUMPAGE, HEAD, AND RAINFALL REPORT

Week of 7/26/15 to 8/01/15

STATION		HEAD	STATION	MGD	HEAD	STATION	MGD	HEAD		MGD	HEAD
METRO			WINDWARD			EWA-WAIANAE (CONT)			PH (CONT)		
KULIOUOU	0.00					MAKAHA IV	0.00		PEARL CITY II	1.11	
WAILUPE	0.00		WAIMANALO II	0.53		MAKAHA V	0.00		PEARL CITY III	0.53	
WAIALAE-IKI	0.00		WAIMANALO III	0.48		MAKAHA VI	0.00		WAIAU	1.20	
AINA KOA	0.48		KUOU I	0.00		MAKAHA SHAFT	1.12	5.92	NEWTOWN	2.13	
AINA KOA II	1.00		KUOU II	0.08		KAMAILE	0.44		KAONOHI I	0.91	
WAIALAE SHAFT	0.00		KUOU III	0.72		WAIANAE I	0.35		WAIMALU I	0.41	
MANOA II	1.66		LULUKU	1.00		WAIANAE II	0.61		AIEA	0.23	
PALOLO	1.09		HAIKU	0.32		WAIANAE III	0.58		AIEA GULCH 497	0.51	
KAIMUKI HIGH	3.58	21.07	IOLEKAA	0.00		MAKAKILO	0.92		AIEA GULCH 550	0.26	
KAIMUKI LOW	2.79		KAHALUU	0.86		HONOULIULI I	4.37		HALAWA 277	1.41	
WILDER	7.35		WAIHEE	0.00		HONOULIULI II	4.66		HALAWA 550	0.00	
BERETANIA HIGH	4.19	21.81	KAHANA	0.80		SUBTOTAL:	14.64		KAAHUMANU MTR(-)	0.00	
BERETANIA LOW	3.39		PUNALUU I	0.00	16.34	IMPORT FROM PH			KAAMILO FLO MTR (-)	0.00	
KALIHI HIGH	2.56	21.34	PUNALUU II	2.82		KAPOLEI LINE BSTR	16.14		KUNIA I	6.36	17.76
KALIHI LOW	2.85		PUNALUU III	1.25		HONOULIULI LB FLOW	16.57		KUNIA II	2.20	
KAPALAMA	0.39		KALUANUI	1.16		EWA BEACH FLOW	4.31		KUNIA III	1.36	
KALIHI SHAFT	8.32		MAAKUA	0.33		HONOULIULI I (-)	-4.37		HOAEAE	6.51	
MOANALUA	1.26	18.48	HAUULA	0.00		HONOULIULI II (-)	-4.66		EWA SHAFT	0.00	
SUBTOTAL:	40.91					SUBTOTAL:	27.99		WAIPAHU INTCON. (-)	-3.13	
			KAHUKU	0.33					EWA-WAIANAE (-)	-27.99	
IMPORT FROM PH			OPANA	1.05		PEARL HARBOR			PH LOCAL USE:	17.55	
HALAWA SHAFT	7.93	15.84	WAIALEE I	0.00		WAHIAWA	1.73		TOTAL SUBURBAN:	74.66	
KAAMILO	0.00		WAIALEE II	0.00		WAHIAWA II	2.35				
KALAUAO	9.37	16.10	SUNSET BEACH	0.00		MILILANI I	3.94		KALAUAO SPRINGS	0.70	
PUNANANI	11.76		SUBTOTAL:	11.73		MILILANI II	0.00		BARBERS POINT (NP)	1.26	
KAONOHI II	0.00					MILILANI III	0.96		GLOVER TUNNEL (NP)	0.46	
WAIMALU II	0.00	14.26	WIND. EXPORT	0.14		MILILANI IV	1.46				
KAAHUMANU	0.79					WAIPIO HTS.	1.27		HEAD CONDITION		
HECO WAIAU	2.69		HALEIWA-WAIALUA			WAIPIO HTS. I	0.76		CAUTION / ALERT		CRITICAL
MANANA	0.48		HALEIWA	0.00		WAIPIO HTS. II	0.47		PUNALUU / KAIMUKI		MAKAHA
KAAHUMANU FLOW MT	0.00		WAIALUA	2.89		WAIPIO HTS. III	0.00		PEARL CITY		
KAAMILO FLOW MTR	0.00		SUBTOTAL:	2.89		WAIPAHU	3.13	17.41			
TOTAL IMP/EXP WAIP. INT:	0.00					WAIPAHU II	1.02		MOANALUA		
IMPORT FRM WIND:	0.14		EWA-WAIANAE			WAIPAHU III	1.47		WAIALUA		
SUBTOTAL:	33.16		MAKAHA I	0.00		WAIPAHU IV	3.39				
			MAKAHA II	0.50		PEARL CITY SHAFT	1.09	13.84			
TOTAL METRO:	74.07		MAKAHA III	1.09		PEARL CITY I	0.50				

CWRM PERMITTED USE FOR BWS POTABLE SOURCES						PUMPAGE	2015	2014	GRAVITY	2015	2014
	A	B	C	D	E	SUBURB.	74.66	70.80	SUBURB.	8.36	7.53
WATER	PERMITTED		DIFF.	YEAR/	DIFF.	METRO	74.07	66.82	METRO	0.40	0.47
DISTRICTS	USE	2015	B-A	DATE	D-A	TOTAL:	148.73	137.62	TOTAL:	8.76	8.00
HONOLULU	45.27	41.31	-3.96						Manoa	0.17	
WINDWARD	25.21	17.15	-8.06			NUUANU #5			Palolo	0.23	
NORTH SHORE	4.08	4.27	0.19			(rainfall)	1.37"	1.19"	Waim. I&II	0.08	
WAHIAWA	4.27	4.08	-0.19						Waim. III&IV	0.19	
WAIANAE	4.34	5.16	0.82						Waihee incl.	0.95	
EWA-KUNIA	15.88	9.95	-5.93						Waihee tun.	1.60	
PEARL HARBOR	92.66	77.61	-15.05						Luluku	0.09	
TOTAL:	191.71	159.53	-32.18						Haiku	1.90	
									Kahaluu	1.99	
									Waia. C&C	1.40	
									Waia plant.	0.16	

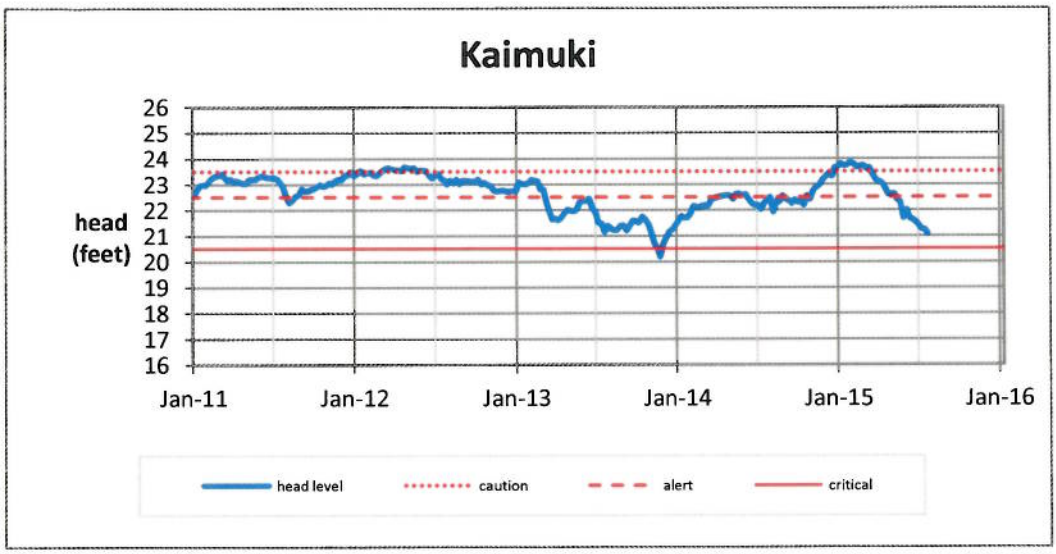
DROUGHT STATUS REPORT
DRAFT IN MGD

WATER USE DISTRICT	AUTHORIZED USE	2014	7/12--7/18 2015	2014	7/19-7/25 2015	2014	7/26-8/01 2015		
HONOLULU	45.27	35.88	37.46	32.48	41.13	35.04	41.45		
WINDWARD	25.21	16.70	16.10	13.59	16.79	14.94	17.01		
NORTH SHORE	4.08	3.99	3.70	3.82	4.04	4.17	4.27		
WAHIAWA	4.27	3.78	3.73	3.70	3.98	3.74	4.08		
EWA-WAIANAE	20.22	29.72	43.44	27.74	43.59	29.53	44.19		
PEARL HARBOR	92.66	59.22	43.23	60.25	42.76	58.21	46.49		
TOTAL	191.71	149.29	147.66	141.58	152.29	145.63	157.49		

Accounts for in-district pumpage and transfers

HEAD IN FEET

		2014	7/12--7/18 2015	2014	7/19-7/25 2015	2014	7/26-8/01 2015		
HONOLULU									
KAIMUKI		22.03	21.26	22.26	21.25	22.38	21.07		
BERETANIA		22.20	21.98	21.41	21.89	22.37	21.81		
KALIHI		21.97	21.46	21.84	21.42	21.91	21.34		
MOANALUA		18.96	18.51	18.97	18.49	18.95	18.48		
PEARL HARBOR									
HALAWA		16.48	15.93	16.51	15.93	16.48	15.84		
KALAUAO		16.98	16.20	16.99	16.15	16.98	16.10		
PEARL CITY		14.68	13.93	14.68	13.90	14.66	13.84		
WAIPAHU		18.16	17.52	18.24	17.46	18.19	17.41		
KUNIA		18.42	17.82	18.58	17.81	18.51	17.76		
EWA-WAIANAE									
MAKAHA		14.23	9.80	14.05	8.02	13.92	5.92		
WINDWARD									
PUNALUU		17.24	16.21	17.71	16.31	17.95	16.34		
KALUANUI		17.15	16.32	17.62	16.42	17.67	16.52		
NORTH SHORE									
WAIALUA		11.17	11.08	11.22	10.92	11.09	10.95		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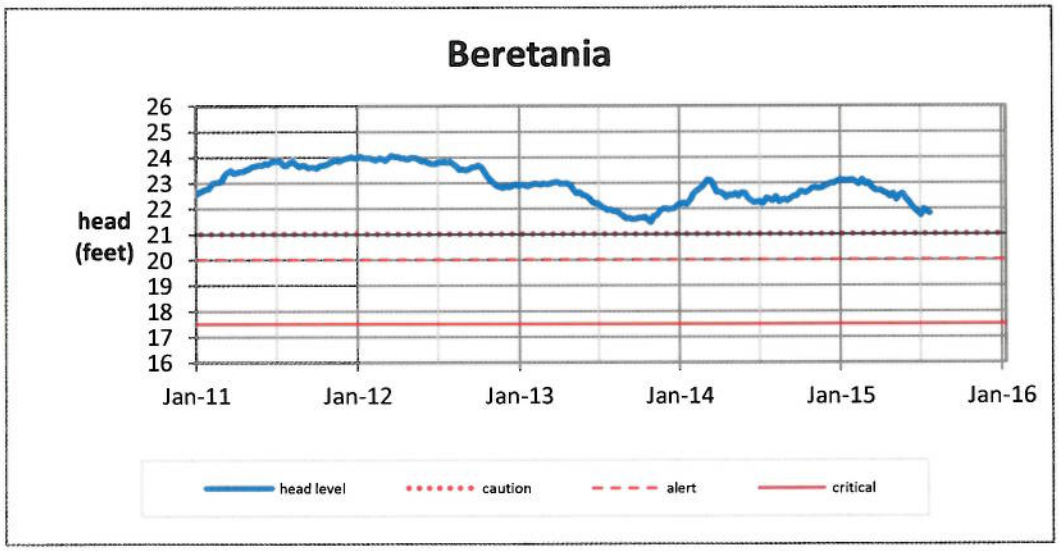
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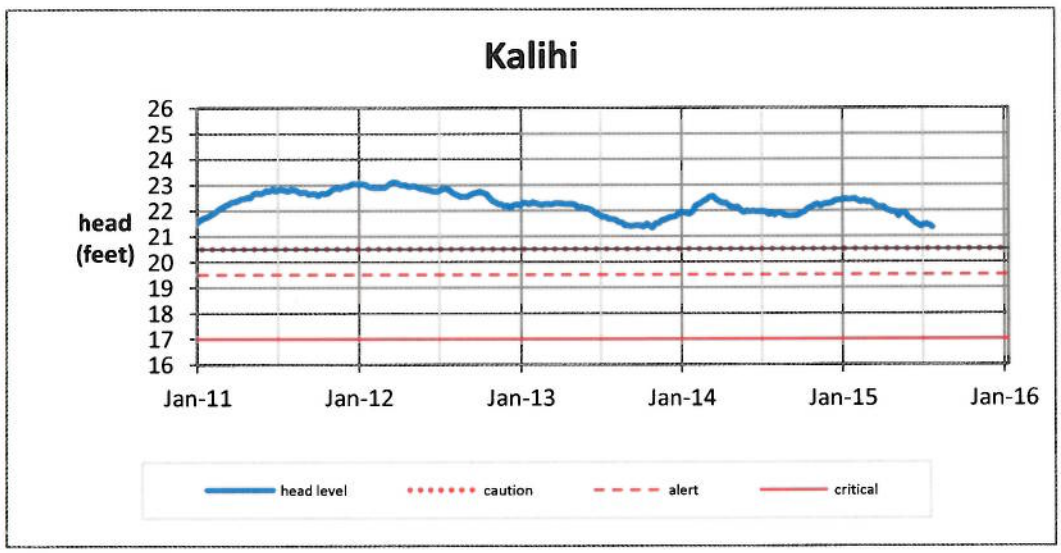
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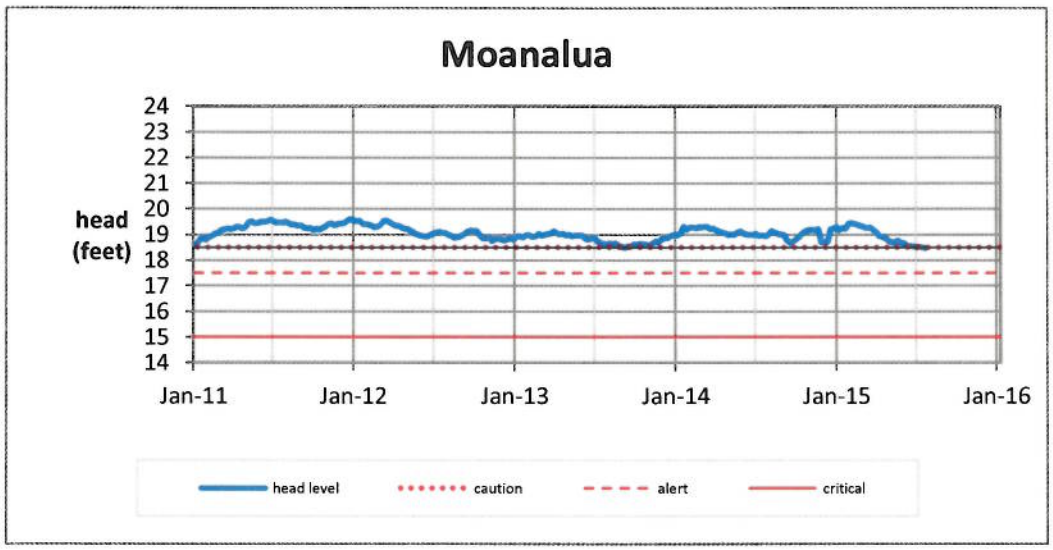
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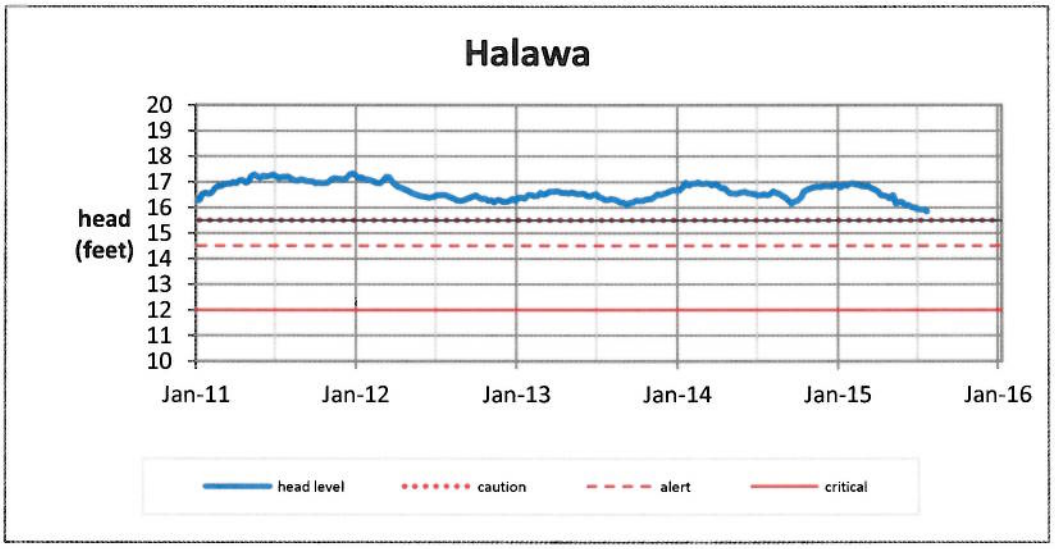
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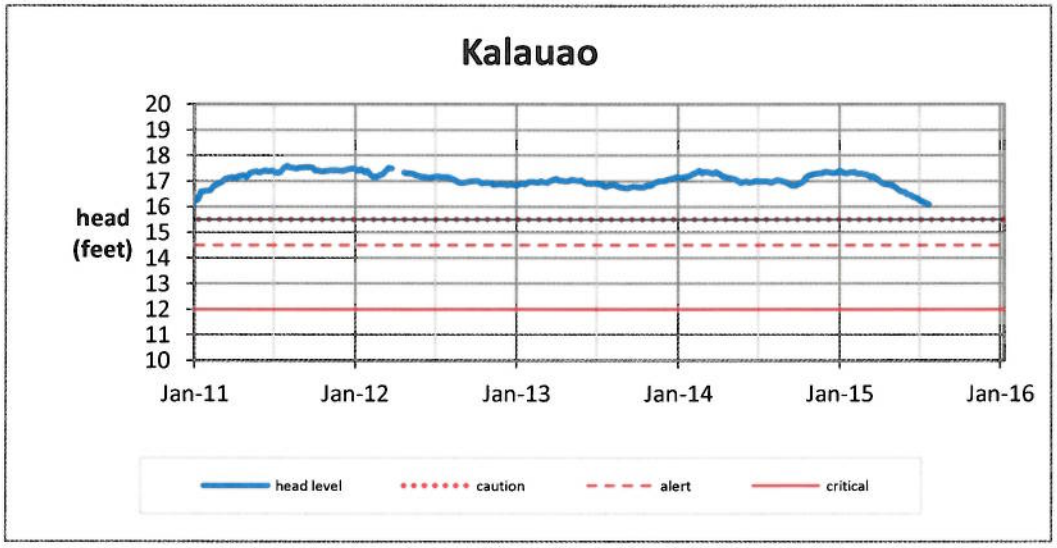
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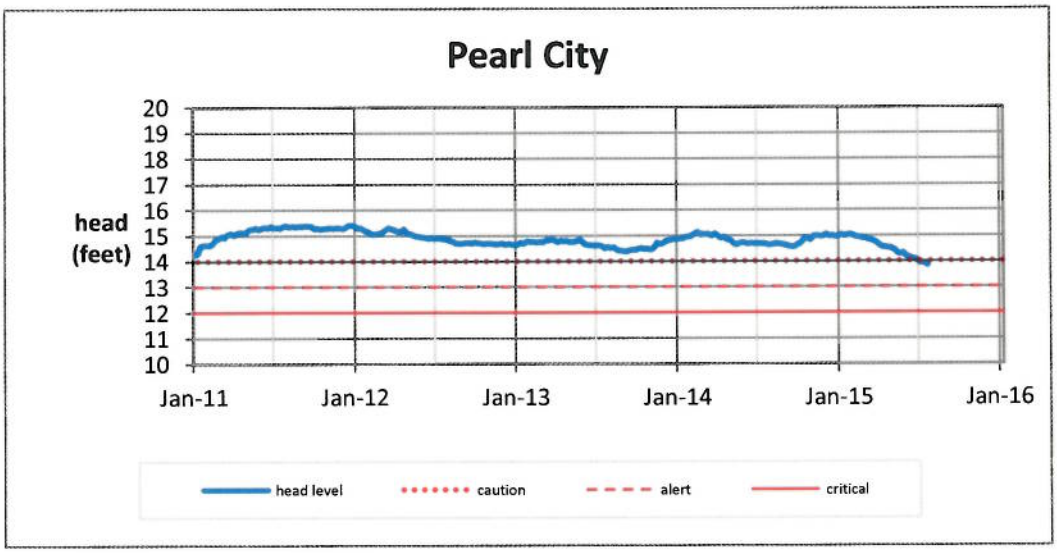
Pearl City
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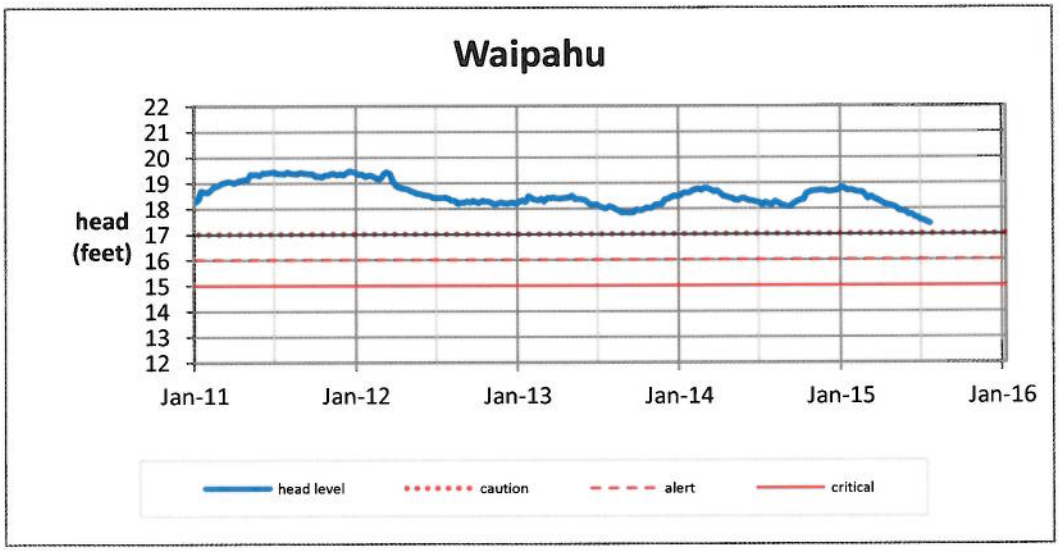
Waipahu
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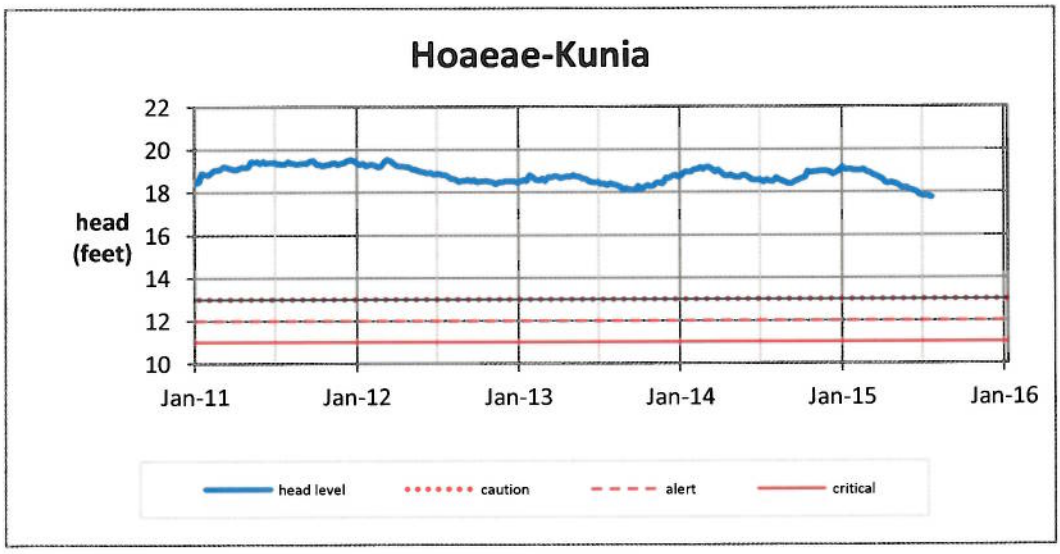
Hoaeae-Kunia
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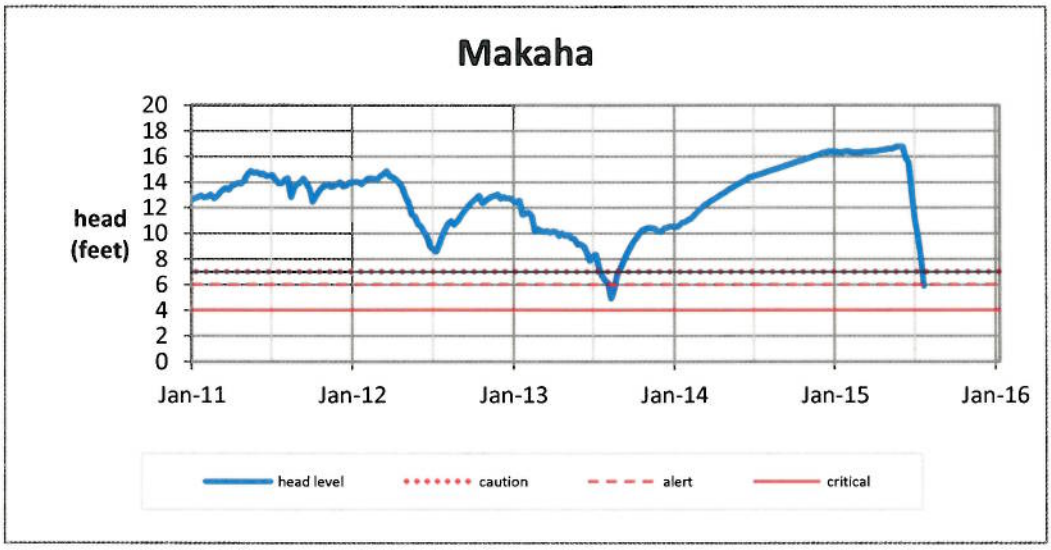
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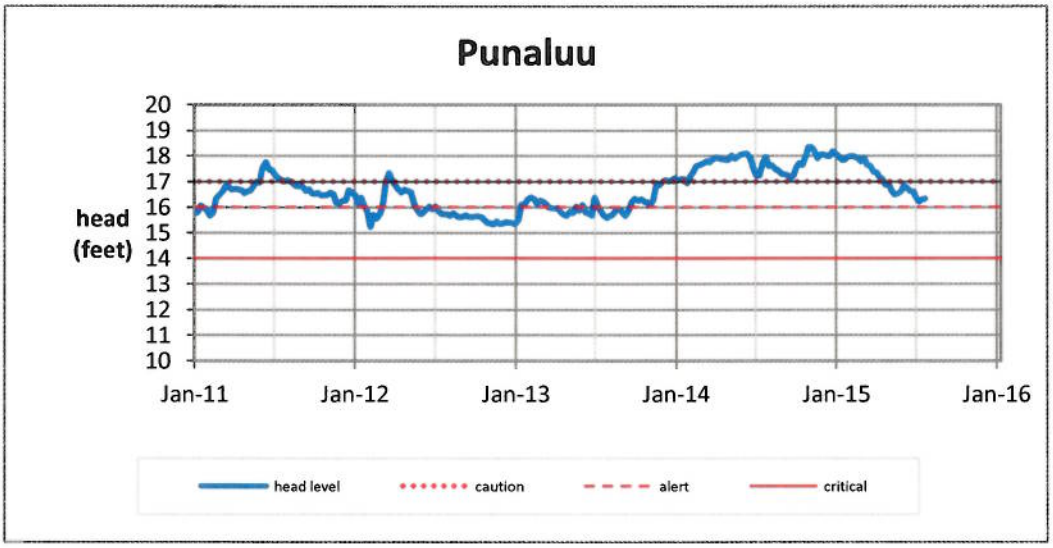
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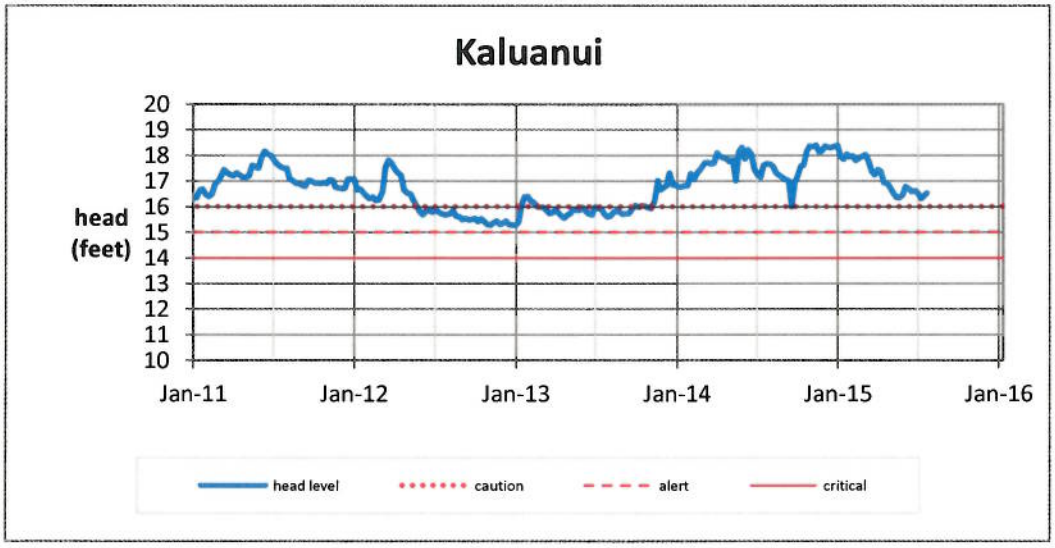
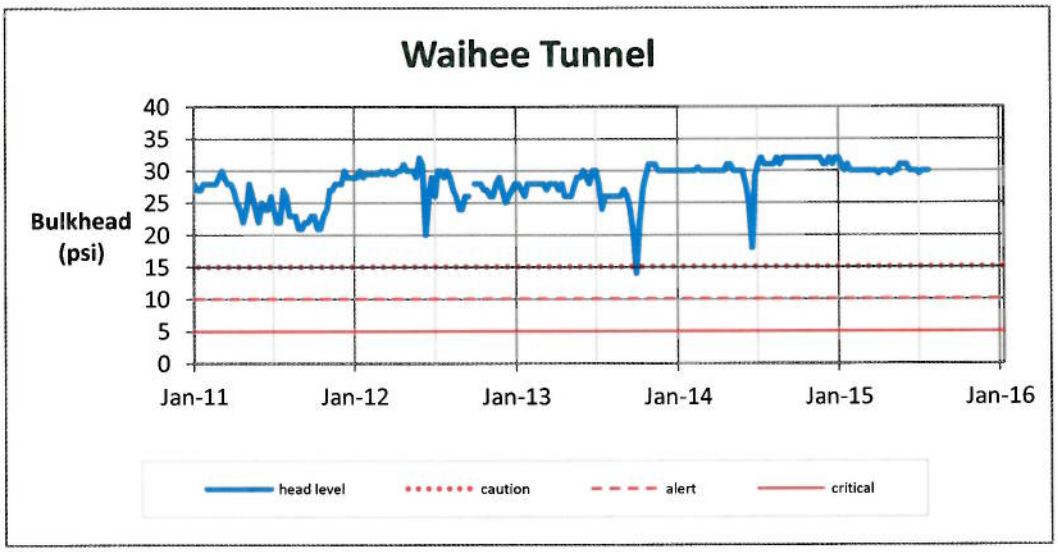
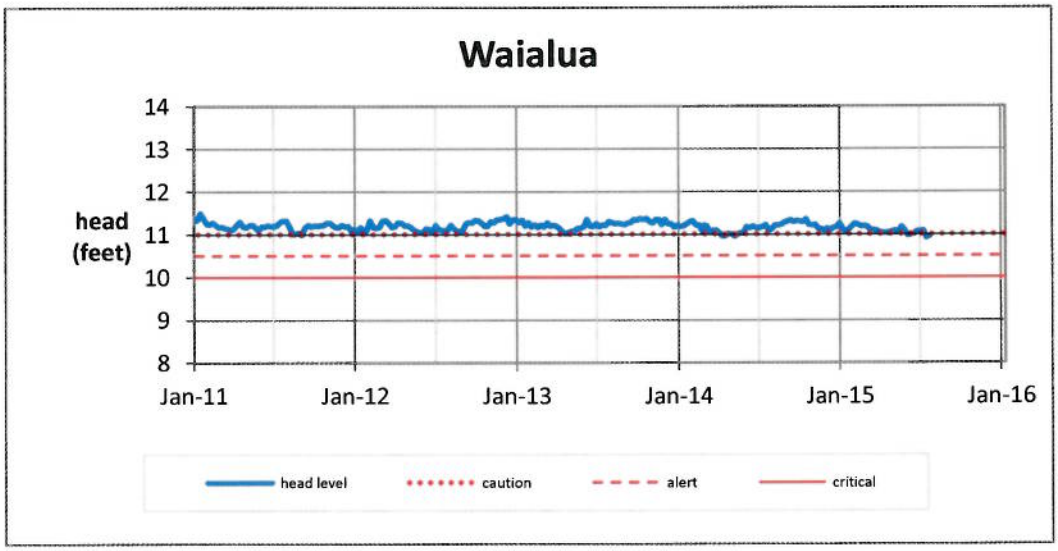
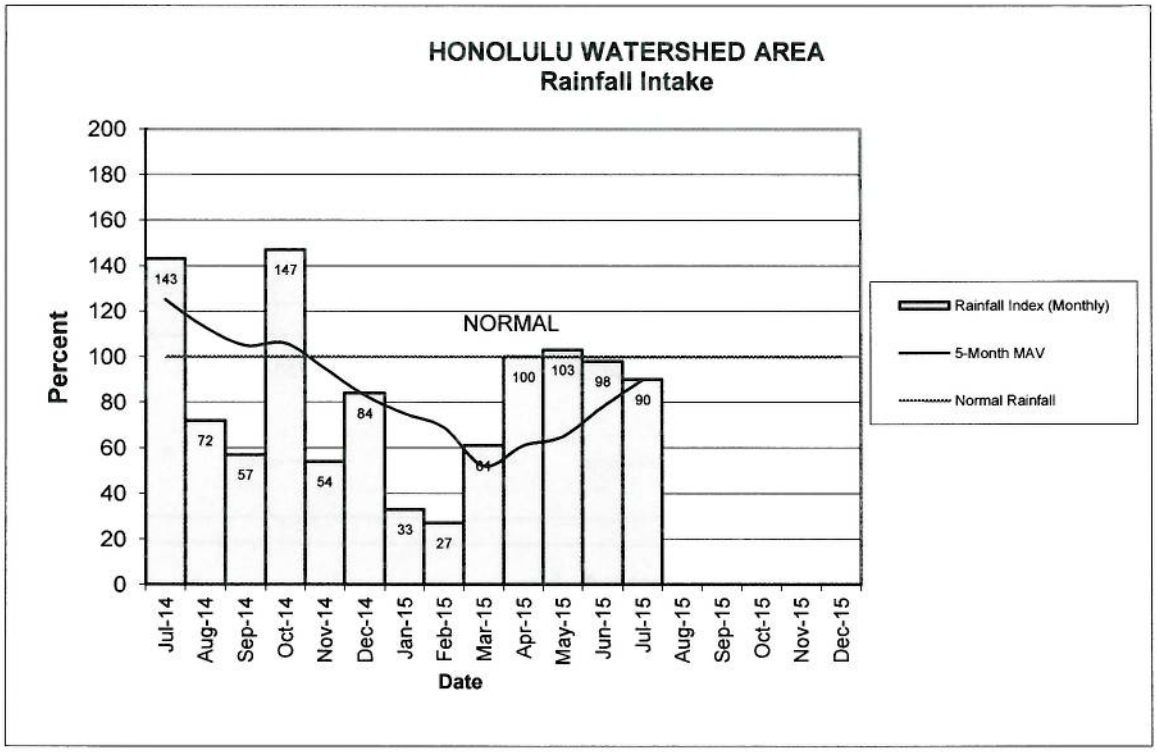
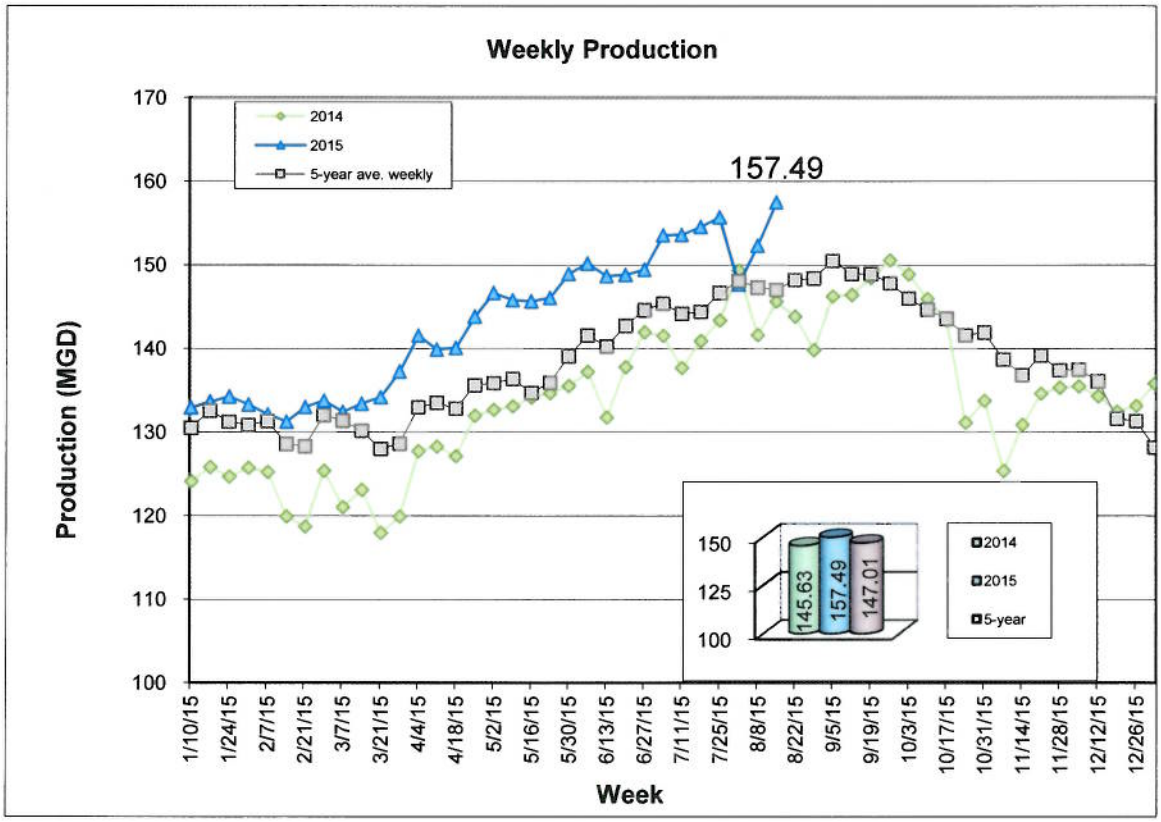
alert
critical


Kaluanui
head (feet)
20
19
18
17
16
15
14
13
12
11
10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
head level
caution
alert
critical

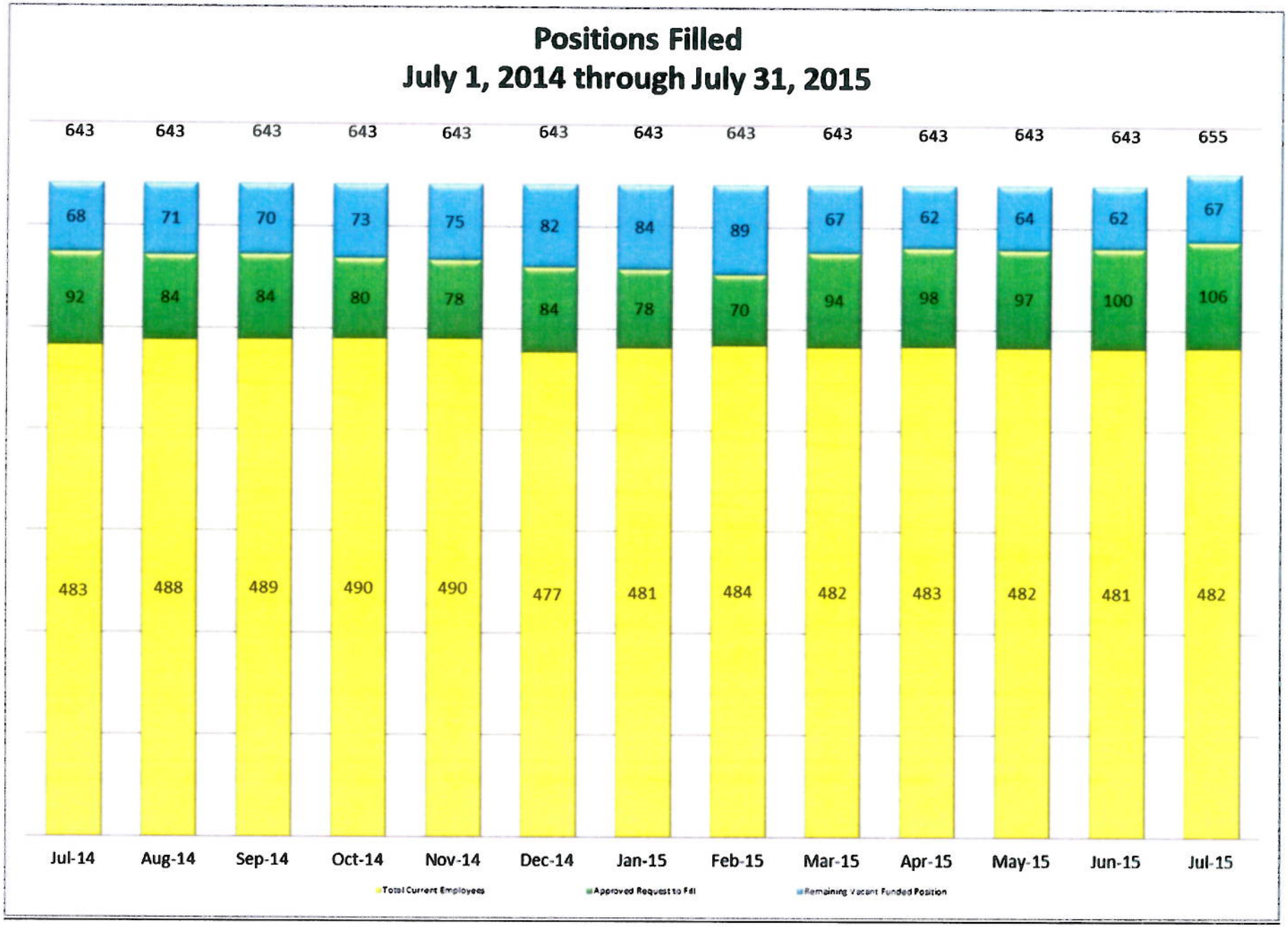

Waihee Tunnel
Bulkhead (psi)
40
35
30
25
20
15
10
5
0
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
head level
caution
alert
critical


Waialua
head (feet)
14
13
12
11
10
9
8
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
head level
caution
alert
critical

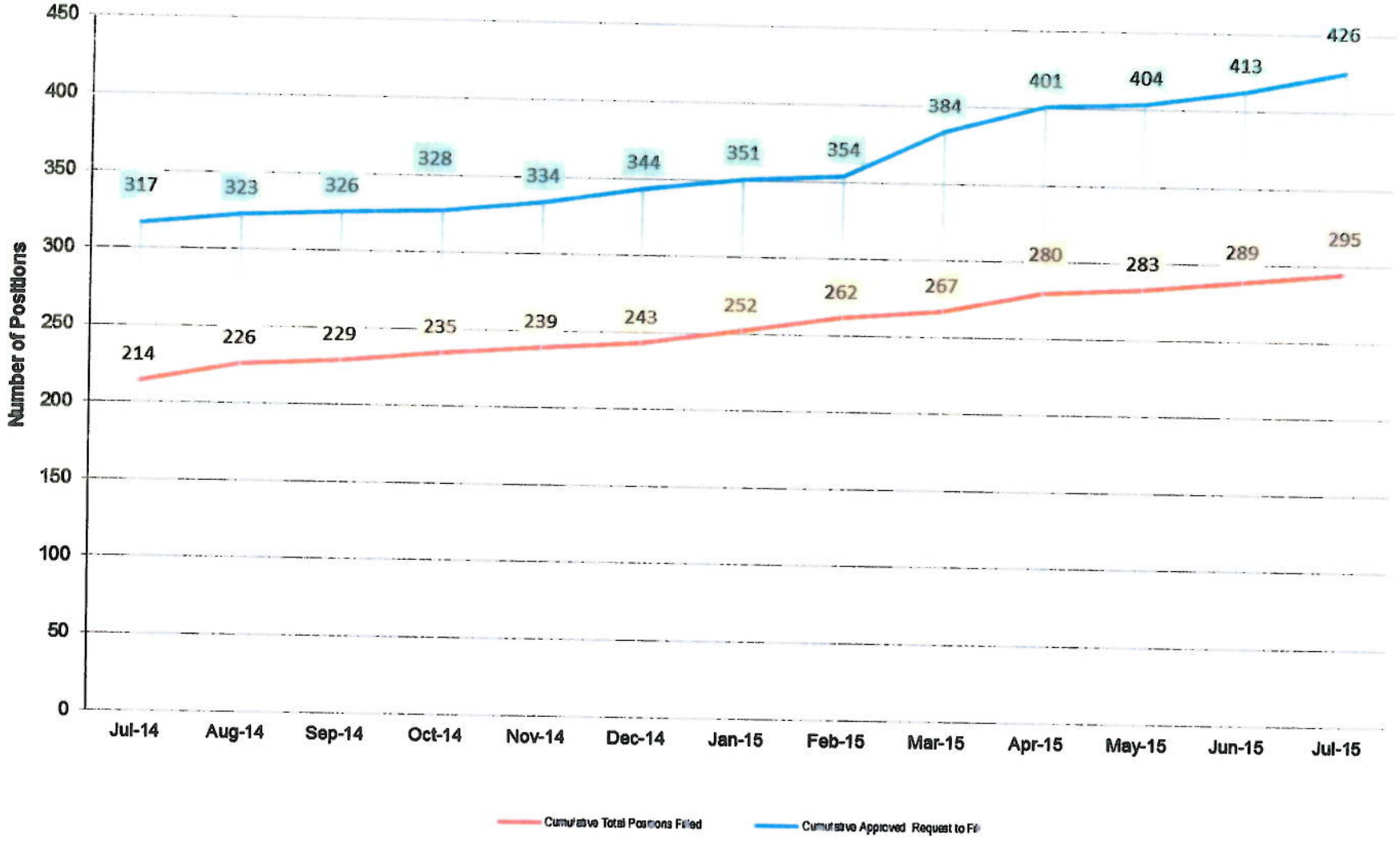

HONOLULU WATERSHED AREA
Rainfall Intake
Percent
Date
NORMAL
143
72
57
147
54
84
33
27
64
100
103
98
90
Jul-14
Aug-14
Sep-14
Oct-14
Nov-14
Dec-14
Jan-15
Feb-15
Mar-15
Apr-15
May-15
Jun-15
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Rainfall Index (Monthly)
5-Month MAV
Normal Rainfall


Weekly Production
Production (MGD)
Week
2014
2015
5-year ave. weekly
157.49
145.63
157.49
147.01
2014
2015
5-year

Actions: 4 New Hires, 2 Promotions, 0 Transfer, 3 Separations, 13 New Approvals to Fill, 1 Cancelled Request



Cumulative Totals
July 1, 2014 through July 31, 2015



DISCUSSION Teri Akana of the Human Resources Office gave the report. There were no comments or discussion.

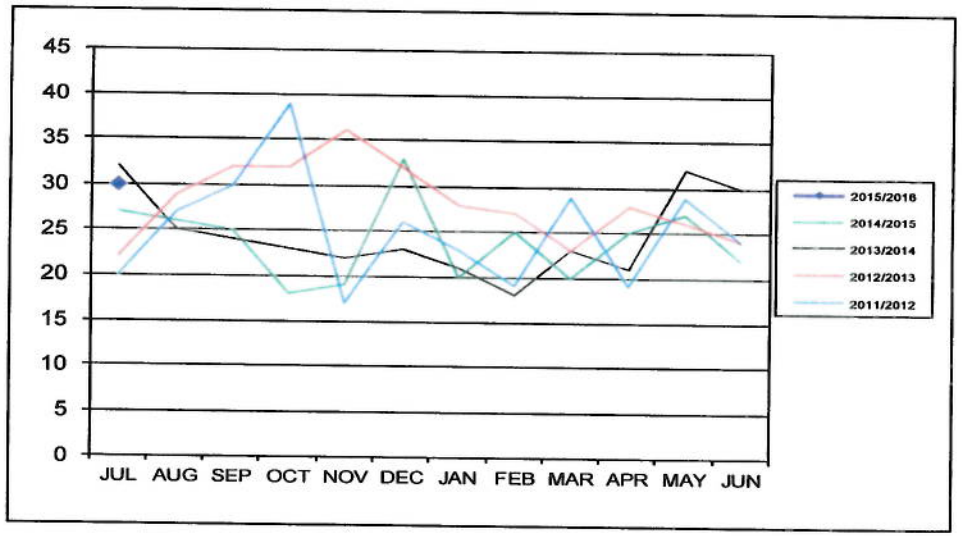
ITEM FOR INFORMATION NO. 8

WATER MAIN REPAIR REPORT

for July 2015

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2015/2016	30												30
2014/2015	27	26	25	18	19	33	20	25	20	25	27	22	287
2013/2014	32	25	24	23	22	23	21	18	23	21	32	30	294
2012/2013	22	29	32	32	36	32	28	27	23	28	26	24	339
2011/2012	20	27	30	39	17	26	23	19	29	19	29	24	302

Date	Address	Size	Cause
7/2	Mokuola St. & Farrington Hy.	8" C.I.	Corrosion
7/3	4234 Halupa St.	12" P.V.C.	Bear on rock
7/5	327 Hao St.	8" C.I.	Corrosion
7/6	45-527 Iouli Pl.	8" C.I.	Unknown
7/6	3833 Kaimuki Av.	8" C.I.	Corrosion
7/6	3650 Waialae Av.	12" C.I.	Corrosion
7/7	1640 Piikoi St.	4" C.I.	Corrosion
7/9	92-890 Kohupono St.	8" C.I.	Corrosion
7/9	376 Ilimalia Lp.	8" C.I.	Unknown
7/15	45-1149 Haleloke Pl.	6" C.I.	Corrosion
7/16	1440 Queen Emma St.	6" C.I.	Corrosion
7/18	mountain line--702 Alewa Dr.	6" C.I.	Bear on rock
7/19	92-959 Kanehoa Lp.	8" C.I.	Corrosion
7/19	971 Lunahooko Pl.	8" C.I.	Corrosion
7/22	259 Hakalau Pl.	4" C.I.	Corrosion
7/22	1332 Kaweloka St.	8" C.I.	Pressure
7/22	157 Makaweo Av.	6" C.I.	Corrosion
7/23	98-153 Pahemo St.	8" P.V.C.	Clamp
7/24	N. Judd St. & Iholena St.	6" C.I.	Corrosion
7/24	3552 Salt Lake Bl.	6" C.I.	Corrosion
7/24	2828 Lowrey Av.	8" P.V.C.	Bear on rock
7/25	3638 Salt lake Blvd.	6" C.I.	Corrosion
7/25	46-006 Nana Pl.	4" C.I.	Corrosion
7/25	89-318 Farrington Hy.	24" P.V.C.	Bear on rock
7/26	10 Kilea Pl.	6" C.I.	Corrosion
7/28	87-118 Hookele St.	6" C.I.	Corrosion
7/29	1411 Pua Ln.	6" C.I.	Corrosion
7/30	Huipu Dr. off Kili Dr.	16" A.C.	Joint
7/30	Ala Holo Lp. near Huipu Dr.	12" C.I.	Pressure
7/30	91-209 Kuhela St.	10" P.V.C.	Unknown



Bold * - Pro-active Leak Repair

18.96 miles of pipelines were surveyed by the Leak Detection Team in the month of July.

DISCUSSION

Daryl Hiromoto, Field Operations Program Administrator, gave the report. He mentioned two significant main breaks; a 12 inch break on Waialae Avenue and a 24 inch break on Farrington Highway. Mr. Hiromoto stated that BWS attended the Waianae Neighborhood Board meeting to answer questions, and stated that the biggest issue was the traffic. In the future, they will be more cognizant of the traffic situation when breaks occur in this area.

MOTION TO ADJOURN

There being no further business Chair Miyashiro at 4:38 PM called for a motion to adjourn the Open Session. Ross Sasamura so moved; seconded by David Hulihee and unanimously carried.

THE MINUTES OF THE REGULAR SESSION BOARD MEETING ON AUGUST 24, 2015 WERE APPROVED AT THE SEPTEMBER 28, 2015 BOARD MEETING			
	AYE	NO`	COMMENT
DUANE R. MIYASHIRO	X		
ADAM C. WONG	X		
DAVID C. HULIHEE	X		
KAPUA SPROAT			ABSENT
BRYAN P. ANDAYA			ABSTAINED
ROSS S. SASAMURA	X		
FORD N. FUCHIGAMI			ABSENT

Respectfully submitted,

Lisa K. Kim

LISA K. KIM

APPROVED:

DUANE R. MIYASHIRO
Chair of the Board

SEP 28 2015

Date