



**FINAL ENVIRONMENTAL ASSESSMENT/
ENVIRONMENTAL IMPACT STATEMENT
PREPARATION NOTICE**

**NEW KAUA'I LANDFILL AND
RESOURCE RECOVERY PARK
MA'ALO, KAUA'I, HAWAII**

County of Kaua'i
Department of Public Works
Solid Waste Division
4444 Rice Street, Room 275
Līhu'e, Kaua'i, Hawai'i

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Prepared for:

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Department of Public Works
Solid Waste Division
4444 Rice Street, Room 275
Līhu'e, Kaua'i, Hawaii'

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January 2013

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ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	microgram per cubic meter
AECOM	AECOM Technical Services, Inc.
BMP	best management practice
CAB	Clean Air Branch, State of Hawai'i Department of Health
CCE	community criteria evaluation
CFR	Code of Federal Regulations
CWA	Clean Water Act (1977) (33 U.S.C. s/s 121 et seq.)
CWB	Clean Water Branch, State of Hawai'i Department of Health
cy	cubic yard
CZM	Coastal Zone Management
DEIS	draft environmental impact statement
DEM	digital elevation model
DLNR	Department of Land and Natural Resources, State of Hawai'i
DOH	Department of Health, State of Hawai'i
DOW	Department of Water, County of Kaua'i
DPW	Department of Public Works, County of Kaua'i
EIS	environmental impact statement
EISPN	environmental impact statement preparation notice
EPA	Environmental Protection Agency, United States
FEA	final environmental assessment
FIRM	Flood Insurance Rate Map
FS	feasibility study
ft	feet or foot
FEA	final environmental assessment
GIS	geographic information system
HAR	Hawai'i Administrative Rule
H:V	horizontal:vertical
HRS	Hawai'i Revised Statute
IAL	important agricultural lands
ISWMP	Integrated Solid Waste Management Plan
lbs/cy	pounds per cubic yard
LFG	landfill gas
MACLS	Mayor's Advisory Committee on Landfill Selection
MRF	materials recovery facility
msl	mean sea level
MSW	municipal solid waste
MSWLF	municipal solid waste landfill
NFIP	National Flood Insurance Program
NOI	Notice of Intent
NWI	National Wetlands Inventory
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
ppm	part per million
ppt	part per thousand
PREE	preliminary engineering evaluation
RCRA	Resource Conservation and Recovery Act
RRP	resource recovery park
RMTC	R. M. Towill Corporation
SDWA	Safe Drinking Water Act
SDWB	Safe Drinking Water Branch, State of Hawai'i Department of Health

SHPD	State Historic Preservation Division, State of Hawai'i Department of Land and Natural Resources
SHWB	Solid and Hazardous Waste Branch, State of Hawai'i Department of Health
SMA	special management area
SWD	Solid Waste Division, County of Kaua'i Department of Public Works
TIAR	traffic impact assessment report
TMK	tax map key
UBC	Uniform Building Code
UIC	Underground Injection Control
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
TIAR	traffic impact assessment report

PROJECT SUMMARY

Project:	New Kaua'i Landfill and Resource Recovery Park
Applicant:	Department of Public Works County of Kaua'i 4444 Rice Street, Suite 275 Līhu'e, Hawai'i 96766 Larry Dill, P.E., County Engineer
Accepting Authority:	Office of the Governor, State of Hawai'i Executive Chambers, State Capitol Honolulu, Hawaii 96813 The Honorable Neil Abercrombie Proposed Authorized Representative: Office of the Mayor of Kaua'i 4444 Rice St., Suite 235 Līhu'e, Hawai'i 96766 Bernard P. Carvalho, Jr., Mayor (The Mayor has requested that he be designated the Authorized Representative of the Governor of the State of Hawai'i for this EIS)
Agent:	AECOM Technical Services, Inc. 1001 Bishop Street, Suite 1600 Honolulu, Hawai'i 96813-3698
FEA/EISPN Preparer:	AECOM Technical Services, Inc. 1001 Bishop Street, Suite 1600 Honolulu, HI 96813-3698 and R. M. Towill Corporation 2024 North King St., Suite 200 Honolulu, Hawai'i 96819-3494
Tax Map Key(s):	(4) 3-9-002:020 (MSWLF). State of Hawai'i; and (4) 3-8-002:001 Alternate Resource Recovery Park (RRP) Site. Grove Farm Company, Inc.
Proposed Action:	The County of Kaua'i proposes development of a new Municipal Solid Waste Landfill (MSWLF) and resource recovery park (RRP) at a site located on State-owned land near Ma'alo Road on the Island of Kaua'i. Infrastructure at the MSWLF will include access roads, utilities, an office, shop area, stormwater infiltration basin, leachate aeration pond, scale house, drop-off area, and internal roadways. The RRP will contain recycling, reuse, reduction, and other waste diversion components. The RRP will either be located on the same State-owned site as the landfill, or on private land near the State-owned MSWLF site, pending discussions between the County and the landowners.
Land Area:	Proposed MSWLF and RRP Site: TMK: (4) 3-9-002:020 – 2,162.78 acres Area of Development: 270.2 acres Alternate RRP Site: TMK (4) 3-8-002:001 – 1,114.91 acres Area of Development: Approximately 80 acres
State Land Use District:	Agricultural
Existing Land Uses:	Pasture land and fallow agriculture
Present Zoning:	Agricultural and Open Space
Special Management Area:	No
Permits Required:	State of Hawai'i, Department of Health Solid Waste Management Permit; Covered Source Air Permit; county building permits; National Pollutant Discharge Elimination System (NPDES) Permit Application for Discharges of Storm Water during Construction (Notice of Intent [NOI] C), and Industrial Activities (NOI B)

1.0 INTRODUCTION

1.1 PURPOSE AND NEED FOR ACTION

The County of Kaua'i (County) Department of Public Works (DPW) Solid Waste Division (SWD), is responsible for properly managing and disposing of municipal solid waste (MSW) on the island, in the safest and most efficient manner possible. The existing Kekaha Municipal Solid Waste Landfill (MSWLF) is projected to reach capacity in the coming years. Therefore, a new landfill facility will be required thereafter to achieve the project objective of providing for the proper disposal of all forms of MSW that cannot practicably be further reused, recycled, or otherwise recovered. The proposed project includes construction and operation of a both new MSWLF and a Resource Recovery Park (RRP).

The RRP will contain several reuse, recycling, and waste reduction facilities that will divert a portion of the MSW waste stream away from the landfill. A feasibility study (FS) is currently underway to determine which potential technologies and processes will be housed at the RRP.

The County's selection of an appropriate site for a new MSWLF has been an ongoing island-wide issue since 2000, balancing the potential for environmental, technical, economic, and social impacts on the public and surrounding community. Upon finalization and acceptance of the EIS, land rights would have to be acquired and the proposed facilities would have to be designed, permitted, approved, and constructed before the new MSWLF is ready to accept refuse. The entire process is expected to take several years. Completion of the proposed project is time-critical, to ensure proper management of waste on the island given the expected closure of the existing Kekaha MSWLF in the coming years.

The County DPW SWD is the proposing agency. Due to the proposed use of state land, in accordance with Hawai'i Administrative Rules (HAR) §11-200-4, the Governor of the State of Hawai'i, or an authorized representative, will be the accepting authority. Due to the proposed use of County funds, the Office of the Mayor of the County of Kaua'i is currently seeking authorization from the Governor to serve as the Governor's authorized representative for this EIS.

The State of Hawai'i Department of Health (DOH) Solid and Hazardous Waste Branch (SHWB) is the approving agency that would issue an approval (i.e., a solid waste management permit) prior to actual implementation of the proposed action.

1.2 PURPOSE OF THE FEA/EISPN

The statutory conditions that trigger the Hawai'i Environmental Policy Act (HEPA) review for this project are: (1) the use of county funds and state land [HRS §343-5(a)(1)] and (2) the proposed construction of a new landfill [HRS §343-5(a)(9)(C)]. Furthermore, the County has determined that the proposed project may have a significant effect, therefore requiring the preparation of a Final Environmental Assessment/Environmental Impact Statement Preparation Notice (FEA/EISPN) (HAR §11-200-11.2), followed by an EIS. This FEA/EISPN will inform interested parties of the proposed project and seek public comment on subjects that should be addressed in the EIS document. The FEA/EISPN will be filed with the State Office of Environmental Quality Control.

This FEA/EISPN addresses the County DPW's proposed MSWLF (i.e., the preferred alternative) on a 270-acre site in Ma'alo, Kaua'i. This FEA/EISPN also addresses the proposed RRP, which may be located either on the same 270-acre site, or possibly on a nearby approximately 80-acre site at Ma'alo, Kaua'i, pending the outcome of ongoing discussions between the landowners and the County. Therefore, either the 270-acre MSWLF site or the alternate 80-acre site ("the alternate RRP site") may ultimately be proposed for development of the RRP, and both will be considered in the EIS.

This document describes the following elements:

- The proposed MSWLF and RRP project and the potential environmental impacts and mitigation measures
- Additional research and data collection that will be provided in the project's Draft EIS (DEIS)
- The community scoping process that serves to provide public input into the preparation of the EIS documents

All activities conducted in support of this FEA/EISPN and the forthcoming DEIS, including reports, field investigations, technical studies, and public involvement have been or will be conducted in accordance with Chapter 343, HRS, *Environmental Impact Statements*; Title 11, Chapter 200, HAR, *Environmental Impact Statement Rules*; and Act 50, Chapter 343, HRS, requiring impacts to Hawai'i's culture, traditional cultural properties and practices, and customary rights to be addressed in the environmental review process.

1.3 EXISTING LANDFILL: KEKAHA MSWLF

The Kekaha MSWLF is located approximately 1.3 miles northwest of the town of Kekaha in the southwest part of Kaua'i. It is the County's sole operating MSWLF and is owned by the County, administered by the DPW, and operated under contract by Waste Management, Inc. The Kekaha MSWLF will reach capacity in the coming years, and a new site must be found within this timeframe to prepare the required environmental documentation, acquire the land rights, and to design, permit, and develop the new facility.

According to data provided by the SWD, the Kekaha MSWLF has received approximately 75,000 tons of solid waste per year in recent years, although peak values in the past have been as high as 95,000 tons per year. MSW collected by the County from residential and commercial customers is compacted into open-top trailers at one of four County-operated transfer stations for transfer to Kekaha MSWLF. The Kekaha MSWLF also accepts solid waste directly from commercial haulers and the public.

Kekaha MSWLF has been operated in two phases. Phase I reached capacity years sooner than anticipated due to a sharp increase in solid waste disposal following Hurricane Iniki in 1992. Phase II opened in 1993 and is approaching its design capacity. In 1998, the maximum height of the Phase II landfill was increased to 60 feet (ft) above mean sea level (msl). Since that time, the County has implemented an additional vertical expansion to 85 ft msl and a horizontal expansion ("Cell 1"). The County is currently designing and attempting to permit an additional horizontal expansion ("Cell 2"), which is expected to extend the useful life of the existing landfill for several additional years.

1.4 ORGANIZATION OF THIS FEA/EISPN

Section 1.0 describes the purpose of this document and the overall organization of this report.

Section 2.0 describes the site selection activities that the County has undertaken since 2000.

Section 3.0 presents the analytical framework for MSWLF site selection, which encompasses exclusionary criteria, Preliminary Engineering Evaluation (PREE), operation cost estimation, Community Criteria Evaluation (CCE), and other important decision factors.

Section 4.0 describes the proposed new MSWLF and RRP at the Ma'alo site and the results of applying the analytical framework to the Ma'alo site.

Section 5.0 describes the natural environmental setting of Ma'alo and includes the potential for environmental effects of landfill development as well as suggested mitigation measures.

Section 6.0 describes the public infrastructure, utility, and other services currently serving the Ma'alo site as well as the potential for adverse environmental effects and mitigation measures from development and operation of the MSWLF and RRP.

Section 7.0 describes the socio-economic environment of the project as well as potential effects and mitigation measures at the Ma'alo site.

Section 8.0 lists the permits and regulatory approvals that may be required to construct and operate a MSWLF and RRP at the Ma'alo site.

Section 9.0 describes the project's relationship to existing land use plans, policies, and controls in the context of regulatory requirements and approvals for the project.

Section 10.0 describes alternatives to landfilling for municipal solid waste disposal and applies the analytical framework to the seven sites not selected for the new Kaua'i MSWLF and RRP.

Section 11.0 summarizes the results of the EIS community meetings held on Kaua'i in May and June 2012 and the public comments received thereafter.

Section 12.0 lists agencies, organizations, and individuals that will be included in the preparation of the EIS.

Section 13.0 describes the Chapter 343, HRS, significance criteria for environmental impacts in relation to the proposed development and operation of a MSWLF and RRP at the Ma'alo site.

Section 14.0 provides reference information for previous documents used in the preparation of this FEA/EISPN.

2.0 CHRONOLOGICAL HISTORY OF THE NEW LANDFILL SITE SELECTION PROCESS

2.1 KAUA'I MSWLF SITING STUDIES 2001/2002

The site selection process for a new MSWLF on Kaua'i was initiated 12 years ago in 2000 when the County contracted environmental engineering consultant Earth Tech, Inc. (now AECOM) of Honolulu, Hawai'i to prepare a Kaua'i MSWLF Siting Study.

The study, in two reports published in 2001 and 2002 (Earth Tech 2001, 2002), conducted an island-wide evaluation by excluding areas that could not be feasibly used, were restricted by regulatory criteria, would be harmful to human health or the environment, or were otherwise undesirable. A geographic information system (GIS) was used to conduct the island-wide evaluation. The data were downloaded from the Hawai'i State GIS Program Data web page (Department of Business, Economic Development, and Tourism, Office of Planning) in 2000. Areas deemed unsuitable for MSWLF development were delineated using the GIS database to apply the exclusionary criteria.

The 2001/2002 siting study identified and evaluated eight potential sites around the island that were considered suitable for siting a new MSWLF:

- Kalepa
- Kekaha Mauka
- Kīpū
- Kōloa
- Kumukumu
- Ma'alo (preferred alternative and subject of this FEA/EISPN)
- Pu'u O Papai
- Umi

HAR §11-58.1-13, pertaining to MSWLF site analysis, provided the primary set of landfill siting criteria used to develop the overlay analysis that identified areas where a MSWLF should not be located. Figure 2-1 displays the location of the eight potential MSWLF sites that were identified. The 2001/2002 study also evaluated, scored, and ranked these sites based on a set of 19 environmental, technical, and social/cultural criteria.

2.2 MAYOR'S ADVISORY COMMITTEE ON LANDFILL SITE SELECTION 2009

In 2007, then-Mayor Bryan Baptiste convened the County of Kaua'i Mayor's Advisory Committee on Landfill Site Selection (MACLS) to involve the community in developing siting selection criteria for a new MSWLF site for Kaua'i. The MACLS consisted of 15 appointed community representatives from each of the geographic areas of Kaua'i. This citizens advisory committee was tasked with developing new community-based criteria for selecting a new MSWLF site for Kaua'i, adding to the existing criteria from the 2001/2002 siting study, and weighting the criteria they had developed.

The committee was assisted by the County DPW, technical consultant R. M. Towill Corporation (RMTC), and Resolutions Hawai'i as a neutral facilitator. The citizen's advisory committee met nine times during 2008–2009, and technical consultant RMTC published the MACLS report in April 2009.

The committee added to the existing criteria from the 2001/2002 siting study, established weighting (i.e., importance) factors for the 26 criteria they developed, and scored seven of the eight previously identified potential MSWLF sites using each of their criteria. One site, Kumukumu, was excluded from evaluation due to the acquisition of land use entitlements for development at that time. The

development of the site has since been cancelled; therefore, Kumukumu was once again considered as a potential site in the 2012 Siting Study (AECOM 2012) conducted in preparation for this EIS.

The 26 individual criterion scores for each of the seven sites were added together to produce a set of ranked scores reflecting the relative desirability of the sites for use as a landfill, based on the community-focused perspective of the MACLS. A series of community meetings following publication of the MACLS report identified community concerns with some of the methodologies used to rank the sites, and identified improvements that could be made.

In May 2009, the MACLS technical consultant, RMTC, published the results in *Volume 1: Report of the Mayor's Advisory Committee on Landfill Site Selection* (*Volume 2: Site Data Sheets* was issued in March 2009) (RMTC 2009). The 26 "Community Criteria" developed by the 2009 MACLS are listed below:

1. Population density near site
2. Distance to nearest residence, school, hospital or non-compatible business
3. Displacement of residences and/or businesses including agricultural businesses
4. Archaeological and/or historical significance
5. Cost of site acquisition
6. Ceded or Hawaiian Homestead Land
7. Site distance from major highway
8. Schools or hospitals along access road
9. Residential units or developments along access road
10. Consistency of the designation of the site for a landfill with the County of Kaua'i General Plan
11. Consistency of the site with the existing County land use zoning designation
12. Consistency of the site with the existing State Land Use Designation
13. Location of site relative to the Underground Injection Control (UIC) Line
14. Proximity to surface water
15. Flora and fauna habitat
16. Annual precipitation
17. Prevailing wind direction relative to populated areas
18. Haul distance from major municipal solid waste generation areas
19. Adequacy of site drainage
20. Cost of development
21. Cost of operations
22. Availability of utilities
23. Access to fire protection
24. Availability of existing access roadway from major highway or collector street
25. Proximity to parks and recreational facilities
26. Landfill capacity or site life

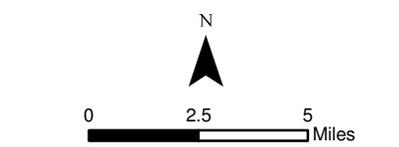
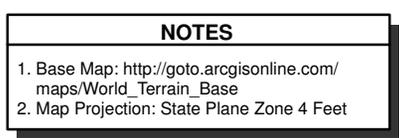
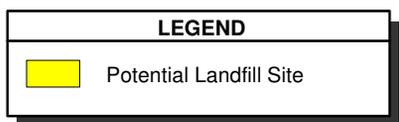
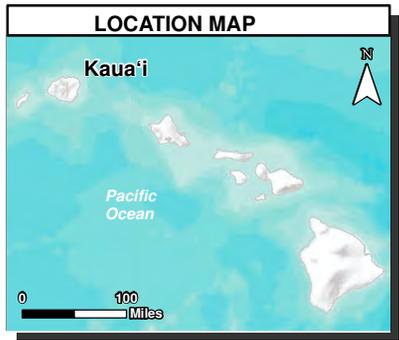
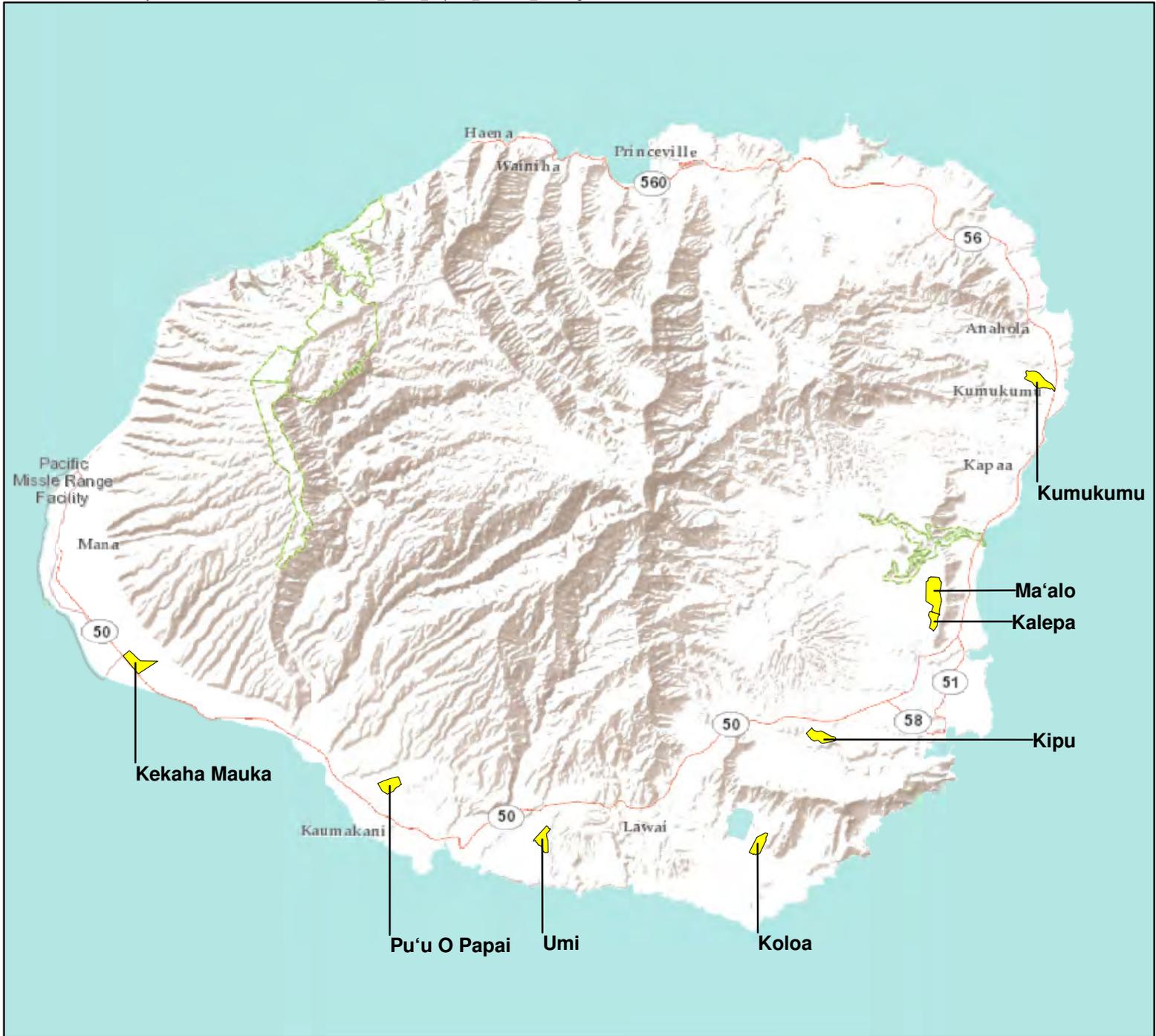


Figure 2-1
Potential New MSWLF Sites,
Island of Kauai
EA/EISPN
New Kauai Landfill and RRP
Ma'alo, Kauai, Hawaii

2.3 COUNTY OF KAUA'I INTEGRATED SOLID WASTE MANAGEMENT PLAN 2009

In September 2009, consultant R. W. Beck updated the *County of Kaua'i Integrated Solid Waste Management Plan* (ISWMP) for the DPW, SWD (R. W. Beck 2009). The plan was previously updated in 1994. Section 11 of the 2009 plan proposes a four-stage site selection process as a facility siting strategy: (1) establish a siting task force, (2) identify excluded sites and develop county-specific siting criteria, (3) define ranking criteria and rank available sites, and (4) select a proposed site. The general principles outlined emphasize an open and flexible process to resolve conflicts, disputes, and impasses. In preparing this FEA/EISPN and forthcoming EIS, the County is adhering to the general processes outlined in the ISWMP.

2.4 COMMUNITY CRITERIA EVALUATION (CCE) 2012

The 2012 CCE updated the 2009 MACLS report that ranked seven of the eight sites by community-based criteria, using the MACLS study's framework and general methodology. The CCE used current data and updated the methodology, based on public comments received and a technical review of the 2009 MACLS report. One important addition to the report was the Kumukumu site that was previously slated for development, but which did not occur. The CCE was included as part of the 2012 Siting Study (AECOM 2012), discussed in Section 2.5, below.

2.5 KAUA'I LANDFILL SITING STUDY REPORT, JULY 2012

The County commissioned environmental engineering consultant AECOM Technical Services, Inc. (AECOM) of Honolulu and RMTC to prepare the *New Kaua'i Landfill Siting Study Report* (AECOM 2012). The 2012 Siting Study provides the following information and analysis:

- Re-evaluation of the suitability of the eight sites using contemporary exclusionary criteria. Note that Kumukumu is re-included following a change in earlier development plans.
- Preliminary engineering conceptual design and related technical estimates
- Planning-level development and operational cost estimates
- Refined community criteria evaluation, based on the 2009 MACLS but using improved scoring and ranking methodology
- Identification of "other important decision factors" for siting a new MSWLF, based on the County's experience trying to site the landfill during the previous 12 years
- Overall site comparison
- Recommendation of Ma'alo as the preferred alternative for consideration in the EIS

The primary factors weighed in selecting the preferred MSWLF site at Ma'alo included the CCE results, site life, costs, landowner willingness, suitability for MSWLF use, agricultural value, and sustainability considerations (see Appendix A of this FEA/EISPN: Executive Summary and Overall Site Comparison and Recommendation from the 2012 Siting Study [AECOM 2012]). Research and findings of the Siting Study are incorporated by reference in this FEA/EISPN.

3.0 ANALYTICAL FRAMEWORK FOR LANDFILL SITE SELECTION

3.1 INTRODUCTION

The eight potential MSWLF sites – Kalepa, Kekaha Mauka, Kīpū, Koloa, Kumukumu, Ma‘alo, Pu‘u O Papai, and Umi – were each analyzed using a multi-faceted evaluation process. The evaluation began with the application of exclusionary criteria (Section 3.2, below). Sites falling outside any physically excluded zone were evaluated through several frameworks:

- Preliminary Engineering Evaluation (PREE) (Section 3.3)
- Cost estimation for landfill development and operation at each site (Section 3.4)
- Application of the 26 MACLS criteria in a Community Criteria Evaluation (Section 3.5)
- Examination of each MSWLF site with respect to “other important decision factors” (Section 3.6).

3.2 EXCLUSIONARY CRITERIA

The exclusionary criteria included both regulatory criteria and other factors which could or should exclude a site such as engineering requirements, constructability, environmental effects or cultural concerns. Two categories of exclusionary criteria were used to eliminate from consideration areas on the island of Kaua‘i where it would be best not to site a MSWLF: (1) HAR §11-58.1-13, and (2) additional exclusionary criteria selected for engineering, environmental, cultural, or other reasons.

The State of Hawai‘i regulations for MSWLF siting, contained in HAR §11-58.1-13, provide the primary set of exclusionary criteria used to delineate areas where it is best not to site a MSWLF. Criteria in HAR §11-58.1-13 include the following:

- Areas within 10,000 ft of airport runways
- 100-year floodplains and floodways
- Wetlands
- Fault areas
- Seismic impact zones
- Unstable areas
- Tsunami inundation areas

In addition to the criteria in HAR §11-58.1-13, the following areas were excluded due to engineering, environmental, cultural, or other reasons:

- Special Management Areas (SMAs): SMAs are sensitive areas that have been protected by legislation, administration, or other agencies or organizations. To eliminate risk of damage to a known sensitive area, these areas were excluded from consideration.
- Areas within 1,000 ft of shoreline: To protect the sensitive shoreline area, all areas within 1,000 ft of the shoreline were excluded from consideration.
- Federal Government lands: Federal Government lands have been mapped for exclusion due in part to the difficulty of acquisition.
- Areas with undesirable topography (i.e., slope greater than 33.3 degrees): An estimate of the slope was calculated from the digital elevation model (DEM) imagery for Kaua‘i provided by the University of Hawai‘i’s School of Ocean and Earth Science and Technology, Coastal Geology Group (<http://www.soest.hawaii.edu/coasts/datakauai/dem.html>) (UH SOEST 2011). These data were manipulated using the ArcGIS spatial analyst extension, and all

areas with a calculated slope steeper than 3:1 were included in the Undesirable Topography exclusion zone.

- Areas within 300 ft of perennial streams: For protection of water resources, a 300-ft exclusion zone was drawn around streams classified as perennial to produce the exclusion zone.
- State conservation lands: Areas designated as State conservation lands were removed from consideration. All features corresponding to the Conservation Land Use District (i.e., code "c") were included in the State conservation land exclusion zone.
- Areas within 0.5 mile of urban lands: To minimize impacts on population, areas within 0.5 mile of urbanized lands were removed from consideration.
- Areas within 1,000 ft of potable surface water or groundwater supply sources: In order to protect drinking water source supplies, MSWLFs are not recommended to be placed within 1,000 ft of a drinking water source. While the locations of drinking water sources were once publicly available (e.g., during the previous 2001 siting studies), since the events of September 11, 2001, the DOH does not divulge the location of drinking water sources. Therefore, drinking water source exclusion zones have not been mapped. However, both the DOH and the County of Kaua'i Department of Water (DOW) reviewed the potential sites, and confirmed that they were not within 1,000 ft of current potable water or groundwater supply sources.

3.3 PRELIMINARY ENGINEERING EVALUATION (PREE) METHODOLOGY

The PREE compared the eight previously identified potential MSWLF sites being considered for a new County landfill, provided conceptual site schematics, and provided planning-level estimates of the engineering potential of each site in terms of size, quantity, estimated useful lifetimes, costs, and other engineering parameters.

3.4 SITE OPERATION COST ESTIMATION

Site operational costs were estimated based on the site conceptual schematics presented in the PREE and experience at the existing Kekaha MSWLF and other landfill sites in the state. A brief description of the basis for each cost item follows:

- Basic Landfill Operation Costs: Operation costs estimates were based on current operating costs provided by the DPW, and are expected to be similar for each site.
- Onsite Labor Costs: County employees compose most of the staff that operate the landfill, which results in labor costs, including fringe benefits and overtime. Similar costs are incurred by administrative support personnel.
- Wet Weather Operations: Sites with higher annual rainfall and more intense storms would require additional costs for wet weather operations, such as maintaining gravel access roads.
- Semi-annual Groundwater Monitoring and Reporting: Each site would require a semi-annual groundwater detection monitoring program for compliance with applicable regulations.
- Regulatory Compliance, National Pollutant Discharge Elimination System (NPDES): Each site would require an annual NPDES compliance program in accordance with applicable regulations.
- Regulatory Compliance, Surface Water and Spill Prevention: Each site would require an annual surface water and spill prevention compliance program in accordance with applicable regulations.
- Daily/Alternate Cover: The DPW has provided data for the amount of cover soil used during the last year at the existing Kekaha facility. It is assumed that the soil initially excavated from

each potential site would be available for use as daily cover, and that the County would have to procure the remainder of the soil from offsite locations.

- Operations Plan and Solid Waste Permit Update (5-year cycle): These items would be updated every 5 years, with costs spread out accordingly.
- Landfill Gas (LFG) System Operation; Probe Measurements: Each site would require a LFG system operation and monitoring program.

3.5 COMMUNITY CRITERIA EVALUATION

The CCE updated the community-based landfill site evaluation, which was last summarized in the MACLS report (RMTC 2009). It ranked the potential MSWLF sites according to overall scores based on evaluation of the 26 siting criteria originally identified by the 2009 MACLS study. The CCE retained in full the relative weighting (i.e., importance) of the individual criteria, as determined by the community (MACLS).

The CCE is based on the most recent raw data available, incorporated the results of the PREE and the cost estimates, and modified the scoring system developed in the MACLS to bolster the MACLS' relative weighting of criteria. As such, the CCE addresses the community concerns and potential improvements identified by RMTC and the MACLS upon completion of the MACLS report. One site not analyzed in the previous MACLS study (Kumukumu) was also analyzed in the CCE.

3.6 OTHER IMPORTANT DECISION FACTORS

Other decision factors considered critical to the comparison process were identified and analyzed for each of the eight sites. These factors included landowner willingness, high value agricultural sites, sustainability and proximity of the site to Kaua'i's waste generation centroid, as well as the implications of developing a co-located RRP.

During past negotiations with landowners over the last 12 years, the project was repeatedly derailed as the landowners ultimately opposed using their site as a landfill. Therefore, landowner willingness has been identified as a critical decision factor to allow this project to go forward in a timely fashion (i.e., before the County's sole existing MSWLF in Kekaha reaches capacity). Of the eight sites, two are government (State) owned, Kekaha Mauka and Ma'alo, and the rest are privately owned. The alternate RRP site near the Ma'alo MSWLF site is privately owned. While the County does have the option of condemning private land to create a landfill, the County greatly prefers to identify a willing landowner. If a willing landowner can be identified, the County would potentially save significant legal and related compensatory expenses (the value of which cannot currently be quantified), and would be able to avoid an undesirable situation.

To document the attempt to locate a willing landowner, and to assess whether any of the landowners had reconsidered their past positions, the County prepared landowner willingness questionnaires for each landowner, delivered via certified mail. The questionnaires included a figure of the potential MSWLF site and a potential co-located RRP site, and asked the landowners whether they might consider negotiating the use of the site (for either purpose) with the County. Each site has room outside of the exclusionary zones to accommodate an approximately 80-acre, co-located RRP. A second and third questionnaire was sent to those landowners who did not respond to previous requests.

All landowners eventually responded, and only the Ma'alo landowners responded affirmatively. The owner of the Ma'alo site stated that they are willing to consider the use of the site for a MSWLF and RRP. Additionally, the owner of a nearby parcel indicated that they may be willing to lease a site for the RRP. The County is currently discussing landowner terms and requirements to use the Ma'alo site and alternate RRP site.

4.0 PROPOSED PROJECT DESCRIPTION – PREFERRED ALTERNATIVE

4.1 INTRODUCTION

The County proposes to develop and operate the new MSWLF on a 270-acre site near Ma'alo Road in Kaua'i. The RRP may be established either on the MSWLF site or on a nearby, approximately 80-acre, privately-owned site, pending the outcome of discussions between the landowners and the County. For the purposes of this FEA/EISPN, pending the outcome of discussions with the landowners, the two sites may both be subject to proposed development. Figure 4-1 displays ownership and general boundary information of the proposed project site. The figure also shows that the proposed MSWLF site and the alternate RRP site are outside all excluded areas.

Key features of the Ma'alo site are summarized below:

- The Ma'alo site is the longest-term solution for the County's waste disposal problem. The estimated site life of 264 years can potentially be extended even further with the operation of a RRP, making this a near-permanent potential solution to the County's needs.
- The Ma'alo site is the only site identified from among eight sites evaluated by the County that currently has a potentially willing landowner.
- Although it has a relatively high initial cost, the Ma'alo site is the most economical site over the life of the landfill, due to factors including economy of scale and potential cost amortization over its long site life. This cost advantage is likely understated, as it does not include the costs that smaller sites would incur when they reach capacity, necessitating a new landfill site.
- The Ma'alo site received the highest relative ranking in the CCE conducted as part of the 2012 Siting Study (AECOM 2012).

Other factors contributing to the identification of Ma'alo as the preferred landfill and RRP site are its central location (which will save costs and fuel, decrease waste-related traffic, and have positive sustainability effects); the relatively ease with which current land uses (grazing) can be displaced to nearby locations over the projected 264-year life of the landfill; and the local topography that shields the site from creating adverse visual impacts.

Standing water was observed in and around the Ma'alo site; therefore, a wetland survey and jurisdictional determination have been initiated. It is anticipated that the United States Army Corps of Engineers (USACE) will likely determine that there are no jurisdictional wetlands within the site borders. If wetlands are present and would be affected by the proposed development, then permitting and appropriate mitigation measures may be required.

Photographs of the Ma'alo site are presented in Photo 1 through Photo 10.

4.2 FACILITY CHARACTERISTICS

4.2.1 MSWLF

The proposed new MSWLF will be designed to accept MSW. Other forms of waste that may be accepted at the facility include recycling residue and unacceptable wastes that are not classified as hazardous waste. Hazardous waste will not be accepted at the landfill. The sources of refuse will come from waste collected by the County, private collection companies, residential and commercial self-haulers, non-hazardous industrial solid waste generators, and possibly treated biosolids from wastewater treatment plants.

By the time it is operational, the new MSWLF will be the only on-island facility that meets the requirements of the Resource Conservation and Recovery Act (RCRA) Subtitle D federal regulations. These regulations provide for the following:

- The construction and operation of the facility in accordance with design and safety standards
- Implementation of a groundwater monitoring and corrective action plan
- Provision for landfill leachate and gas monitoring and collection
- Closure and post-closure care plans
- Financial assurance that the operator of the facility is capable of completing and maintaining closure activities and post-closure monitoring and maintenance requirements

The operating requirements of the landfill will further require the application of daily cover material, controlling disease vector populations (e.g., rats, mice, and flies), monitoring methane gas, restricting public access, controlling litter, controlling storm water run-on and runoff, protecting surface water from pollutants, and maintaining appropriate records.

Federal and state design standards will also require the landfill to have a composite liner made of a synthetic flexible membrane over a compacted clay layer. All landfills must have groundwater monitoring wells, and the landfill owner and operator will be responsible for cleaning up any contamination if it does occur. Upon closure, the landfill owner and operator will be held responsible for capping the landfill and monitoring groundwater, methane gas, and leachate, for a period of not less than 30 years after the landfill has ceased accepting waste.

4.2.2 Landfill Construction and Site Development

Construction activities will include mobilization, clearing, excavation, grading, and landscaping. During excavation and grading work, ground disturbance will be held to the minimum area necessary to accommodate movement of heavy equipment and materials required for construction. This will ensure protection of the site from erosion during storm conditions. Staging and stockpile areas will be prepared as necessary with appropriate storm water discharge pollution prevention features, fugitive dust containment, parking areas for workers, water, and wastewater facilities.

Site development activities will include the following:

- Clearing and Grubbing
- Excavation
- Temporary Erosion Control, Dust Control, and Best Management Practices (BMPs) Maintenance during Construction
- Subgrade Preparation, Installation of Liner, and LFG and Leachate Management Systems
- Construction Management/Construction Quality Assurance
- Leachate Evaporation Pond
- Drainage Improvements
- Infiltration Basin
- Office Building, Shop, Scale and Scale House, Public Drop-off Facility
- Site Work
- Access Road
- Utilities
- Visual Impact Mitigation

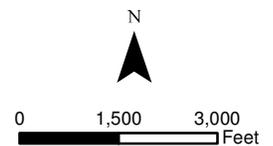
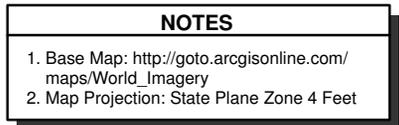
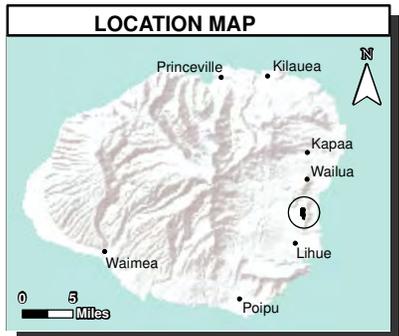
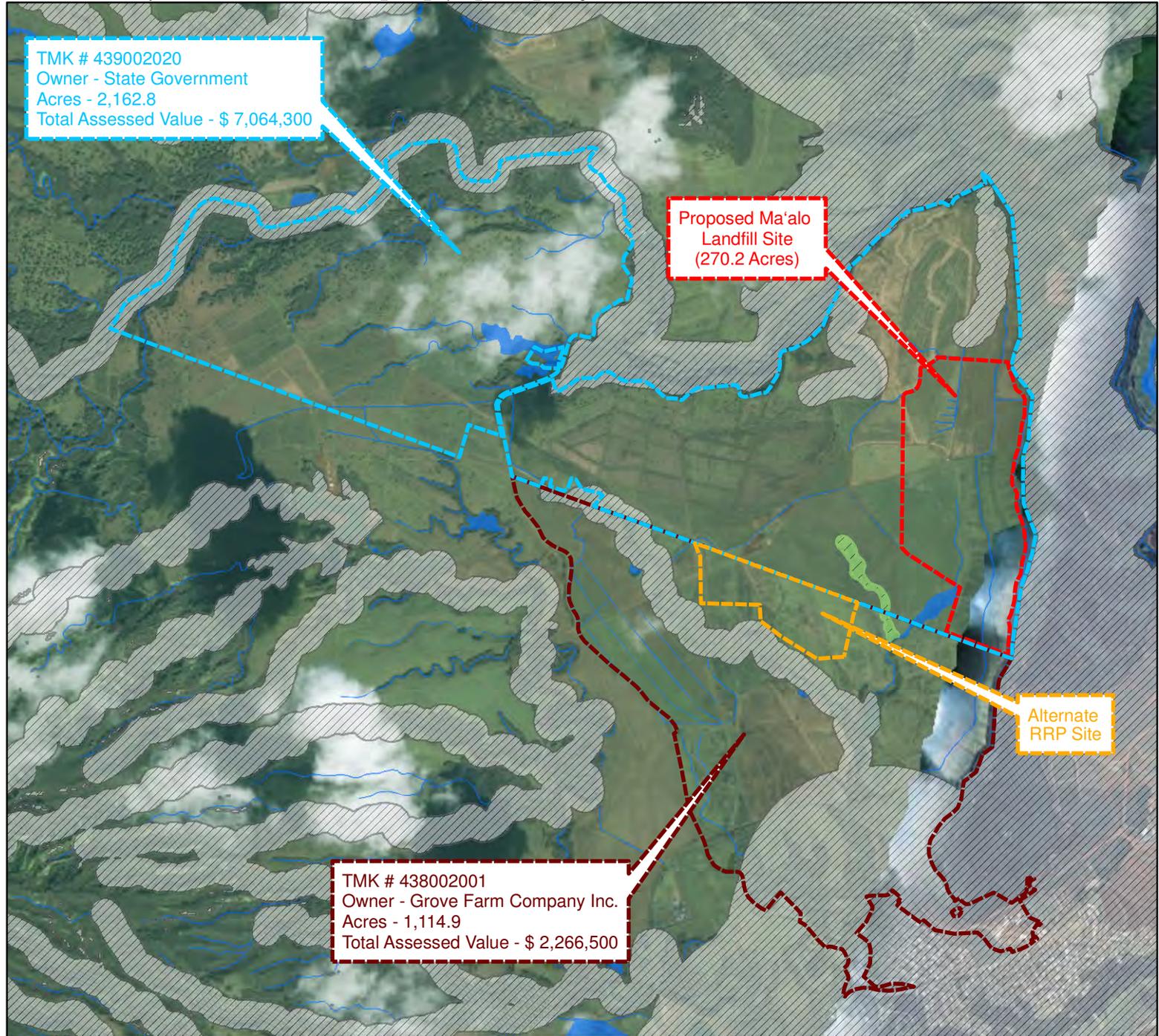


Figure 4-1
 Proposed Project Site's
 Tax Map Key Information
 and Exclusionary Zones
 EA/EISPN
 New Kaua'i Landfill and RRP
 Ma'alo, Kaua'i, Hawaii'i

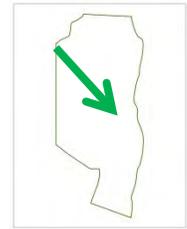


Photo 1: Facing southeast from west of the western border of the proposed MSWLF site. Note the seep (red arrow) just outside of the west border of the proposed site.

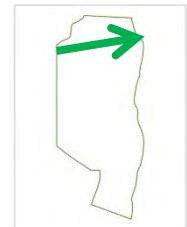


Photo 2: The northern extent of the proposed MSWLF site, facing east from the western border of the site. The irrigation ditch on the left lies just outside the northwest border of the site.

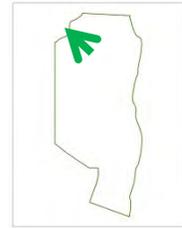


Photo 3: The irrigation ditch just outside of the northwest border of the proposed MSWLF site.

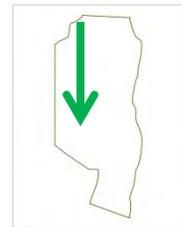


Photo 4: Facing south from the northern border of the proposed MSWLF site. A section of the irrigation ditch that forms the northwest border of the proposed site extends straight south a quarter of the way into the site. No surface flow was evident.

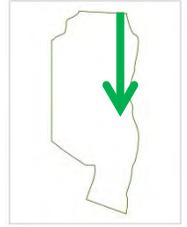


Photo 5: Facing south from the northeastern corner of the proposed MSWLF site. The irrigation ditch extension into the site is evident on the right. Active grazing was observed.

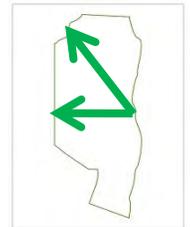


Photo 6: The central and northern sections of the proposed MSWLF site from the eastern border.

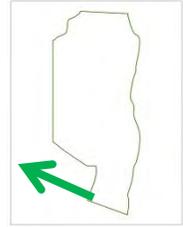


Photo 7: Area west of the proposed MSWLF site, from southwest corner of the site. Note the suspected offsite wetland features with predominantly invasive wetlands plant species mid-photo and at the top of the image.

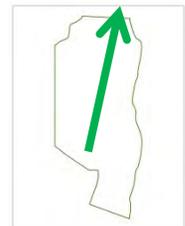


Photo 8: Facing northeast from the outside of the southwest border of the proposed MSWLF site. Note the suspected offsite wetland feature, mid-photo. The site slopes to the right. No evidence of surface flow into this feature was observed; a spring in the vicinity of the tree is suspected.

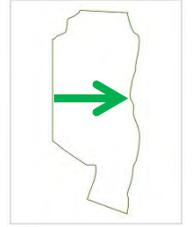


Photo 9: Facing east from midway along the western border of the proposed MSWLF site. Note cattle in foreground.

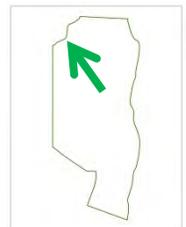


Photo 10: Wide view of the irrigation ditch just outside the northwest border of the proposed MSWLF site.

- Traffic Flow
- Noise Mitigation
- Heavy Equipment Purchase

Infrastructure facilities such as the shop area, scale house, drop-off area, and internal roadways for the proposed MSWLF site are expected to be similar to those facilities at the existing Kekaha MSWLF, with the exception of the office building, which is expected to be one-half the size of the existing office at Kekaha.

Upon completion of construction activities, restoration of the site will include the following:

- Existing utilities will be restored to an appropriate operational condition.
- Inadvertent damage or other impacts from construction traffic to roadways or other offsite features, if any, will be repaired.
- All areas damaged by construction staging will be restored. Exposed ground areas will be seeded, hydro-mulched, or revegetated, as appropriate.

The tentative physical placement of facilities at the Ma’alo site is shown in Figure 4-2. Further details and a discussion of potential impacts and recommended mitigation measures relating to construction associated noise, odor, windblown litter, and storm water erosion will be provided in the DEIS.

Preliminary estimates of the use of the site including waste volume, airspace, cover material requirements, and site life, are summarized in Table 4-1.

Table 4-1: Preliminary Engineering Evaluation – Conceptual Design Data

Parameter	Ma’alo Site Total	Assumptions in Developing PREE and Schematic
Total Property Area (acres)	270 (+ 80)	MSWLF site on State land, possibly including the RRP (alternate RRP site on separate private land)
Limit of Waste (LOW) Area (acres)	194	150-ft setback from all site borders, plus other required infrastructure
Below Grade Depth (ft)	10	10 ft below ground surface
Volume for Waste Mass + Daily Cover Below Grade (cy)	3,130,000	Annual MSW tonnage (tons): approximately 82,000 (this is a design value, not the actual value, forecast based on recent operating data and estimated future trends)
Volume for Waste Mass + Daily Cover Above Grade (cy)	37,834,000	In-place waste mass density: 1,320 pounds per cubic yard (lbs/cy) (based on information from WM) Annual Airspace Consumed by Waste (cy): 124,000 (calculated)
Total Available Airspace (cy)	40,964,000	Sideslopes: 3:1 (H:V) (typical)
Maximum Waste Mass Elevation (ft msl)	585	
Total Daily Cover Soil Volume (cy)	8,193,000	Waste to soil ratio: 4:1 (based on information from WM, the current operator of the Kekaha MSWLF) Annual Daily Cover Soil Volume (cy): 31,000 (calculated)
Total Waste Mass Volume (cy)	32,771,000	
Site Life (years)	264	

Note: Some figures may not agree precisely, due to round-off error.

cy cubic yard
ft foot/feet
H:V horizontal:vertical
lbs/cy pounds per cubic yard

4.2.3 Resource Recovery Park

A RRP is a relatively new development in recycling. In its broadest sense, it includes the co-location of several components in a central facility to promote reuse, recycling, and reduction of materials that might otherwise be disposed of as waste. The RRP provides a single convenient centralized facility where the public can bring all their waste and recoverable materials; it is intended to be a convenient, one-stop service center that helps the County maximize waste diversion from the landfill while reducing costs due to economy of scale and shared resources.

RRPs evolved from eco-industrial parks (eco-parks), a major development in the United States and around the world. Eco-parks focus on environmental management issues and stress the synergistic use of wastes from one company as resources for another in the park. An RRP is sometimes referred to as an integrated resource recovery facility, serial materials recovery facility (MRF), recycling estate, industrial recycling park, recycling-based industrial park, or discard mall (CalRecycle 2011).

The sustainability benefits associated with siting a new landfill near the waste generation centroid (area of the island generating highest proportion of waste) may be even more pronounced if the County develops a RRP co-located with the new landfill, near the waste generation centroid. Therefore, the proposed project includes both a MSWLF and a co-located or nearby RRP.

The County has begun conducting an RRP FS to identify technologies, processes and facilities to implement at the proposed RRP. The FS will evaluate several potential components of the RRP, as described below, based on several factors including cost, benefits, practicality, and technical feasibility. The RRP FS will evaluate the feasibility of the following RRP components:

1. **Integrated Public Drop-off and Reuse Facility:** Includes drop-off facilities for collection of materials processed at the other RRP components, an educational center to educate and promote recycling, and a used goods buyback facility to allow for the direct re-use of material that might otherwise be landfilled.
2. **Residential Waste and Recyclables Drop-off:** Collection, processing, and shipment to market of materials that can be reused, recovered, or recycled; including an HI-5 redemption center.
3. **Household Hazardous Waste Depot:** Collection, processing, and shipment to market of domestically generated hazardous wastes, limited to household quantities.
4. **Electronic Waste Depot:** Collection, processing, and shipment to market of items such as computers, monitors, televisions, telephones, stereo equipment, and other electronics.
5. **Metals Recycling Facility:** Collection, processing, and shipment to market of household scrap metal and larger appliances and white goods.
6. **Construction and Demolition Material Processing and Recycling Facility:** Collection, processing, and shipment to market of a range of materials including concrete, brick, block, and asphalt, treated and untreated lumber, plaster board or drywall, cabinets, doors, windows, roofing, and soil.
7. **Used Tire Processing Facility:** Collection, processing, and shipment to market of tires not managed through commercial service centers or industrial and non-residential tires managed by local private businesses.
8. **Center for Hard-to-Recycle Materials:** Collection, processing, and shipment to market of materials for which there are very limited markets or secondary uses, e.g., certain types of plastics, like film and polystyrene, plus various household items including household glass, furniture, and mattresses.

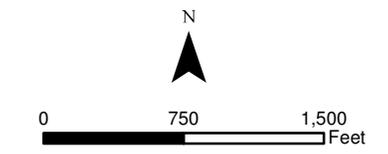
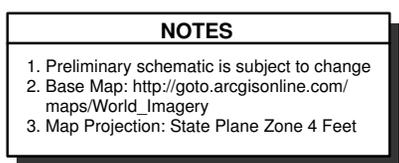
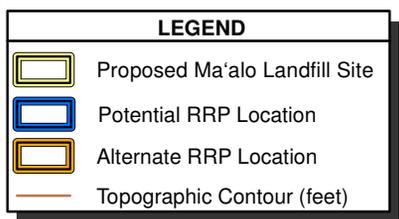
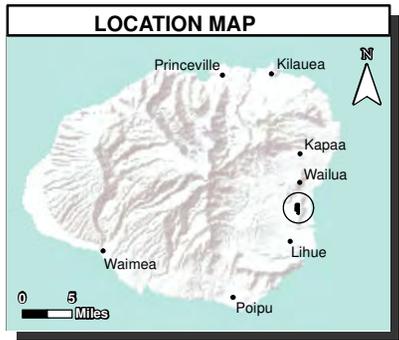


Figure 4-2
 Proposed Ma'alo Site Schematic
 and Alternate RRP Location
 EA/EISP
 New Kaua'i Landfill and RRP
 Ma'alo, Kaua'i, Hawai'i

9. Community Services/Reuse Center: Provide an opportunity for direct, local reuse such as an exchange of second-hand or gently used items such as clothing, furniture, computers, sporting equipment, housewares, and building materials. May receive suitable items from the other drop-off facilities.
10. Educational Center: A facility in which to hold meetings, support research, and raise awareness of recycling and related opportunities and promote reduction of waste and diversion of waste from the landfill.
11. Material Recovery Facility: Collection, processing, and shipment to market of collected recyclable materials, including sorting the materials based on type, removing contaminants, densifying the materials, and baling them into a form suitable for transport and sale to markets. Could support a curbside recycling program.
12. Composting Facility: Collection and processing of organic materials to create a valuable product: compost.
13. Anaerobic Digestion of Biomass: Collection and processing of organic wastes to fuel, and potentially useful compost residuals.
14. Bio-refinery Facility: Collection of paper products and woody biomass, for conversion to fuel.
15. Landfill Gas to Energy Facility: Conversion of landfill gas to electric energy.
16. Waste to Energy Facility: Conversion of MSW to electric energy.
17. Waste to Fuel Facility: Conversion of MSW to pelletized fuel.

The Draft FS, once completed, will be published for public review, and public meetings (separate from the EIS) will be conducted to solicit feedback on the potential components recommended to be included at the RRP. The Final RRP FS will be summarized in the DEIS, which will provide further details of the proposed RRP, including the following:

- The proposed resource recovery and recycling component facilities that will be considered for development at the RRP
- Preliminary RRP layout plan
- Infrastructure requirements
- Operational information including the materials expected to be handled and processed by the RRP
- Other details involving construction, preliminary costs, anticipated users and possible markets for any products produced by the RRP, and other information including the generation of waste by-products that cannot be further reused or recycled
- Environmental, social, and cultural effects

4.3 PROJECT SCHEDULE AND COST

Once the EIS and the public-review process are completed, the land will need to be acquired or land use rights secured. Detailed engineering design, permitting, and other approvals will also need to be obtained and completed before construction can begin. Assuming that an agreement is reached with a willing landowner, it may take an additional 6 years after completion of the EIS to acquire the land and design, permit, construct, and begin operating a new landfill.

A preliminary cost estimate for construction and operation of the landfill indicates an initial cost of approximately \$38.1 million, and a total lifetime cost of approximately \$6.5 million per year over the 264-year estimated site life of the landfill (all costs are in 2012 dollars). Funding for the project is planned to be provided by the County of Kaua'i, refuse operating budget (i.e., tipping fees), or other sources. Costs associated with the RRP will be estimated upon completion of the FS.

The project implementation will be phased to construct elements of the landfill and RRP as they become required. Major portions of land may remain unused for extended periods (possibly 100 or more years); therefore, current land uses and occupants may be allowed to continue use of large portions of the land for agricultural activities until these areas are required for landfill and/or RRP purposes. A preliminary project phasing plan is summarized in Table 4-2. Within each phase, the landfill would be developed piece by piece over time, by the construction of multiple "cells" within each phase, as they become necessary. The expected phasing of the RRP will be determined during the FS.

Table 4-2: Ma'alo Preliminary Site Phasing Plan

Landfill Phase	Cumulative Values		
	Gross Volume (cy)	Site Life (Years)	Total Site Area (ac)
1	16,859,707	109	158
2	30,396,999	196	245
3 (final)	41,940,051	264	270

Note: Estimated durations assume that waste is deposited at current rates. Operation of the RRP could result in extending these phased end dates.

5.0 ENVIRONMENTAL SETTING

5.1 CLIMATE AND RAINFALL

The climate in the project area is characterized as semi-tropical and is influenced by Hawaii's geographic location within the tropics, southwest of the Pacific High or anticyclone region. The outstanding features of the climate are the equable daily and seasonal temperatures, the predominant northeasterly trade winds, and the marked variation in rainfall, from the wet to the dry season and from place to place. The average annual temperature recorded at the Līhu'e International Airport, the nearest National Weather Service weather station to the proposed MSWLF site, ranges from 71.3 degrees Fahrenheit during the coolest month to 79.1 degrees Fahrenheit during the warmest month. Normal annual rainfall is more than 40 inches. Three-fourths of this total, on average, falls during the 7-month wet season (October–April); the dry season occurs during May–September. Winds at the Līhu'e Airport are predominantly from the northeast at speeds of 10–13 knots. Relative humidity, moderate to high in all seasons, is slightly higher in the wet season than in the dry. The average relative humidity recorded at Līhu'e Airport is 67 percent in mid-afternoon and 83 percent in the early morning hours. Completely cloudless skies are rare. On average, clouds cover 60–70 percent of the sky during the daylight hours.

5.1.1.1 POTENTIAL PROJECT EFFECTS AND MITIGATION

The proposed landfill and RRP will not affect the climate of the region. However, trade wind and windy weather conditions have the potential to carry fugitive dust, odors, and airborne litter from the proposed site onto surrounding properties, if not properly controlled. Mitigation measures to address these concerns will likely include the application of water and use of soil cover to reduce the migration of dust, operational practices including the use of litter fencing, and installation of a landfill gas control system. Further description of the MSWLF site and RRP with regard to climate and rainfall will be provided in the project's DEIS.

5.2 GEOLOGY, TOPOGRAPHY, AND SOILS

5.2.1 Geologic Setting

Kaua'i is the fourth largest of the eight major islands of the Hawaiian Archipelago. It lies near the northwest end of the group of the main Hawaiian islands, between latitudes 121°52' and 122°14' north, and longitudes 159°17' and 159°48' west. Kaua'i is separated from the island of O'ahu to the southeast by the Kaua'i Channel, 72 miles wide at its narrowest and up to approximately 10,000 feet deep. To the west, Kaua'i is separated from the island of Ni'ihau by the Kaulakahi Channel, 18 miles wide and nearly 2,500 feet deep (Wentworth 1939). Kaua'i is nearly circular, with a maximum distance of 33 miles east-to-west and 25 miles north-to-south, a perimeter of 94 miles, and an area of approximately 562 square miles. The central mountain massif rises to an altitude of 5,243 feet above sea level at Kawaikini Peak, and 5,148 feet at Mount Wai'ale'ale, 1 mile to the north.

Kaua'i was initially formed as a single basalt shield volcano by extrusion of lava of the Waimea Canyon Volcanic Series during the late Pleistocene Epoch (more than 2 million years ago). The island retains the roughly circular outline of the ancient shield volcano, but erosion has deeply dissected the dome, and faulting and collapse have dropped large segments of the island to elevations well below their original levels (Macdonald et al. 1960). More than 1.5 million years after the primary shield-building stage ceased, renewed volcanic activity occurred on Kaua'i with the extrusion of basaltic lava of the post-erosional Koloa Volcanic Series. Therefore, while most of Kaua'i is covered by lava of the Waimea Canyon Volcanic Series, rocks of the Koloa Volcanic Series cover much of the eastern half of the island. The Koloa Volcanic Series rocks are generally characterized as thick flows of dense basalt extruded from groups of vents aligned along north–south trends.

The Ma'alo site is located approximately 1.5 miles west of the east coast of the island, within the Līhu'e depression, a large depression bounded by the high, steep slopes of the Wai'ale'ale massif on the west, the Makaleha mountains on the north, Hā'upu ridge on the south, and Kalepa ridge on the east. These bounding ridges and mountains are remnants of the lava flows that formed the original

volcanic dome (Waimea Canyon Volcanic Series). The floor of the Līhu'e depression is covered by late lava flows of the Kōloa Volcanic Series (Macdonald et al. 1960). The Ma'alo site is located at an elevation of approximately 300 feet above sea level, along the northeast margin of the Līhu'e depression immediately west of Kalepa Ridge, which reaches elevations up to approximately 650 feet above sea level and forms a natural barrier between the site and the shoreline to the east. The Kōloa Volcanic rocks that underlie the site typically weather to stiff saprolitic soils near the ground surface.

5.2.2 Topography

The preferred landfill and RRP site at Ma'alo consists mostly former sugarcane land presently in use for pasturage. The overall site slopes gently to the south, with a low saddle running north and south through the approximate middle of the site. An active irrigation ditch (trampled by cattle) is present toward the middle of the northernmost extent of the proposed MSWLF site. Just north of the proposed northern boundary, the primary flow in an offsite irrigation ditch makes a 90-degree turn to the west, although a small portion of that flow continues southward into the site, partially filling an irrigation ditch approximately one-fifth of the way into the site (see Photo 4). There was no obvious sign of surface flow in the vicinity of this ditch, and no vegetation characteristic of wetlands was noted. This ditch from the north also defines (and lies just outside of) the proposed northwest border of the MSWLF site (see Photo 2 and Photo 3).

Standing water, artificially fed by irrigation piping, was observed just outside the site's west boundary during one December site reconnaissance (see Photo 1), but was not observed during other events.

Another area with a small amount of surface water fed by irrigation piping was observed midway along the eastern border a relatively short distance inside the proposed landfill boundary. The vegetation at the edge of the wet area matched that of the surrounding grasslands.

The USACE has been consulted to determine whether any of the onsite irrigation features might be considered jurisdictional wetlands, and they are expected to determine that the features are not. Further information on the landfill and RRP site, including the potential presence of a nearby offsite wetland, will be described in the project's DEIS.

5.2.3 Soils

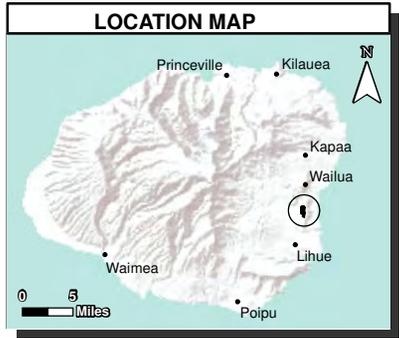
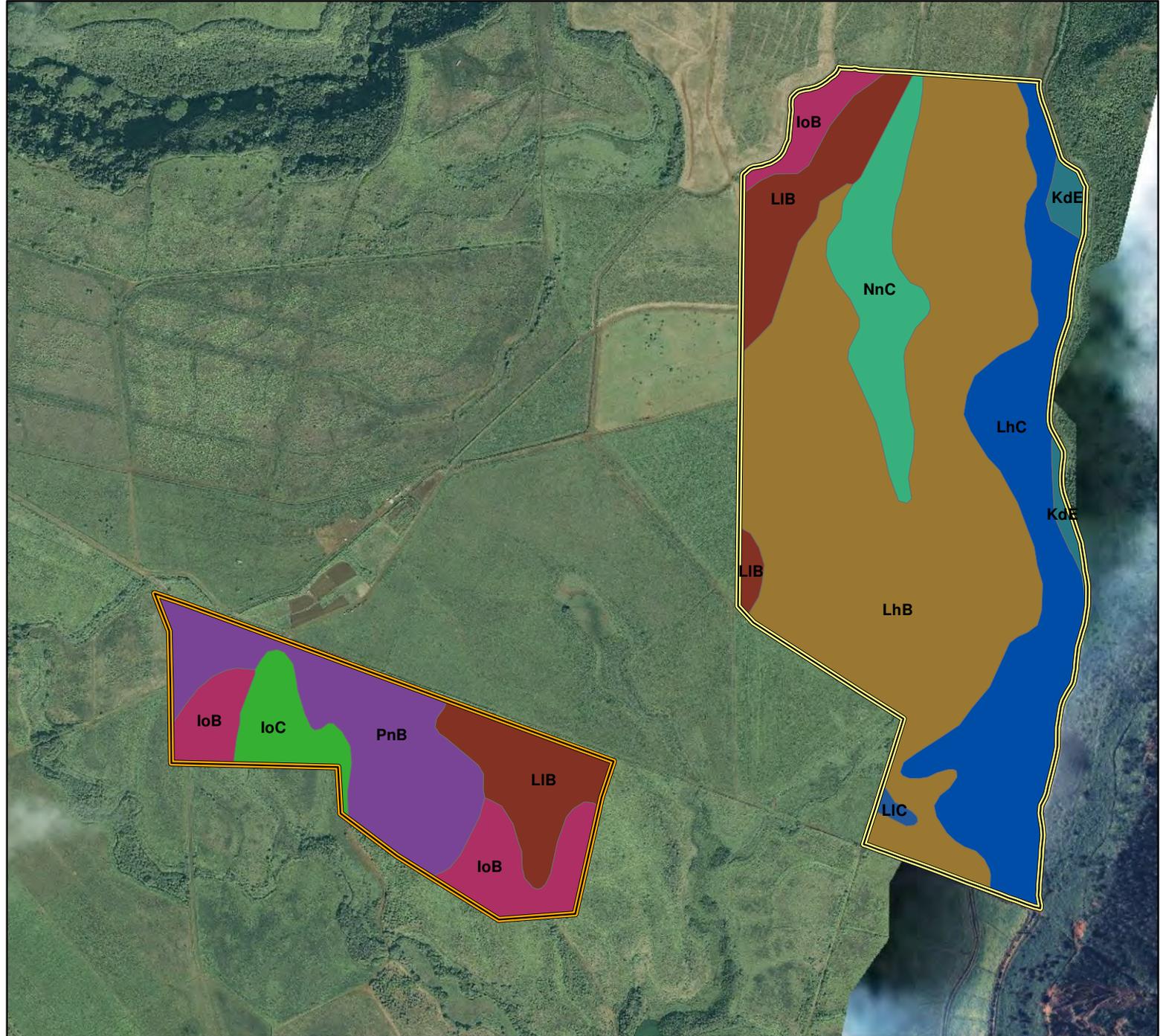
Soil information for the project site was obtained from the *Soil Survey of Islands of Kaua'i, O'ahu, Maui, Moloka'i and Lana'i, State of Hawai'i*, as prepared by the United States Department of Agriculture (USDA) (USDA NRCS 1972).

Generally, two soil associations are found at the proposed MSWLF site:

- The Līhu'e-Puhi association consists of deep, nearly level to steep, well-drained soils that have a fine textured or moderately fine textured subsoil on uplands.
- The Rough Mountainous Land-Rough Broken Land-Rock Outcrop association consists of well-drained to excessively drained, very steep to precipitous lands of mountains and gulches.

The following soil types are found at the MSWLF project site (see Figure 5-1):

- Līhu'e silty clay, 0–8 percent slopes (LhB), Līhu'e Series: found on the tops of broad interfluves in the uplands. In a representative profile the surface layer is dusky-red silty clay about 12 inches thick. The subsoil, more than 48 inches thick, is dark-red and dark reddish-brown, compact silty clay that has subangular blocky structure. The substratum is soft, weathered rock. Permeability is moderately rapid, runoff is slow, and the erosion hazard is no more than slight.



LEGEND

- Proposed Ma'alo Landfill Site
- Alternate RRP Site

Lithology

- loB: loleau silty clay loam, 2-6%
- loC: loleau silty clay loam, 6-12%
- KdE: Kalapa silty clay, 20-40%
- LhB: Lihue silty clay, 0-8%
- LhC: Lihue silty clay, 8-15%
- LIB: Lihue gravelly silty clay, 0-8%
- LIC: Lihue gravelly silty clay, 8-15%
- NnC: Nonopahu clay, 2-10%
- PnB: Puhi silty clay loam, 3-8%

NOTES

1. Base Map: http://goto.arcgisonline.com/maps/World_Imagery
2. Map Projection: State Plane Zone 4 Feet

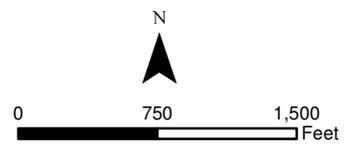


Figure 5-1
 Ma'alo Soils
 EA/EISPN
 New Kaua'i Landfill and RRP
 Ma'alo, Kaua'i, Hawai'i

- Līhu'e silty clay, 8–15 percent slopes (LhC), Līhu'e Series: well-drained soils located on the uplands. Runoff is slow, and the erosion hazard is slight.
- Nonopahu clay, 2–10 percent slopes (NnC), Nonopahu Series: moderately well drained soils on uplands. They are gently sloping to moderately sloping. In a representative profile the surface layer is dark grayish-brown clay about 17 inches thick. The next layer is about 48 inches thick, is brown or grayish-brown clay and silty clay that has angular blocky and subangular blocky structure. Permeability is moderately slow, runoff is medium, and the erosion hazard is moderate.
- Ioleau silty clay loam, 2–6 percent slopes (IoB), Ioleau Series: well-drained soils on uplands. The profile is like that of Ioleau silty clay loam, 6–12 percent slopes, except that it is 10–20 inches deeper to the compact layer. Runoff is slow, and the erosion hazard is slight.
- Līhu'e gravelly silty clay, 0–8 percent slopes (LIB), Līhu'e Series: similar to Līhu'e silty clay, 0–8 percent slopes, except that it contains ironstone-gibbsite pebbles and has brighter color in the B horizon.
- Kalapa silty clay, 20–40 percent slopes (KdE), Kalapa Series: well-drained soils at the base of slopes. Runoff is rapid, and the erosion hazard is severe.
- Līhu'e gravelly silty clay, 8–15 percent slopes (LIC), Līhu'e Series: features slow runoff, and the erosion hazard is only slight.

Soil types at the alternate RRP site consists of the following (Figure 5-1 above):

- Puhi silty clay loam, 3–8 percent slopes (PnB), Puhi Series: well-drained soils on uplands. Runoff is slow and the erosion hazard is slight.
- Līhu'e gravelly silty clay, 0–8 percent slopes (LIB), Līhu'e Series (described above under soil types found at the MSWLF project site).
- Ioleau silty clay loam, 6–12 percent slopes (IoC), Ioleau Series: on ridgetops in the uplands. In a representative profile, the surface layer is dark-brown and yellowish-red silty clay loam 15 inches thick. The subsoil, 40–60 inches thick, is dark-brown and dark reddish-brown silty clay that has subangular blocky structure and is very compact in place. Permeability is slow, runoff is medium, and the erosion hazard is moderate.
- Ioleau silty clay loam, 2–6 percent slopes (IoB), Ioleau Series (described above under soil types found at the MSWLF project site).

5.2.4 Potential Project Effects and Mitigation Measures

No significant impacts to geology, topography, or soils are expected to result from this project. The topography of the project site will require alteration for construction of a MSWLF, RRP, and site infrastructure including the administrative building, accessory buildings, scale and scale house, access roads, and other related facilities.

Grading, excavation, and other construction activities required for the project will be in accordance with County and State regulatory requirements. Further site-specific analysis of soils will also be performed during geotechnical investigations of the site. Further detail, including the potential for adverse effects and mitigation measures, will be provided in the project DEIS.

5.3 SURFACE WATER RESOURCES

The island of Kaua'i is the wettest and most weathered of the Hawaiian Islands, and possesses a relatively high number of freshwater wetlands. More than 40 major streams and numerous tributaries are present on the island.

No streams classified as perennial or intermittent, no lakes, and no reservoirs are contained within the project boundaries containing the proposed MSWLF site or the alternate RRP site. However, the United States Fish & Wildlife Service (USFWS) National Wetlands Inventory database mapped several ditches and swales that are being further investigated to determine whether the site contains any regulated wetlands (see Section 5.5 for further detail).

Nearby surface water resources include the Ai'i Reservoir, located west of the proposed MSWLF site; the Okinawa Reservoir, located southwest of the site; an unnamed reservoir north of the proposed site; the South Fork of the Wailua River, which runs roughly parallel to the north and northwest boundary of the proposed site; and the Hanamā'ulu Stream, located southwest of the proposed site (see Figure 5-2).

5.3.1 Potential Project Effects and Mitigation Measures

The potential for direct adverse effects to surface waters are not anticipated from the project as there are no perennial or intermittent streams located within the proposed landfill or RRP footprint. There is, however, a potential for indirect or cumulative effects from landfill and RRP operations, which will be further discussed in the project DEIS. The DEIS will include further evaluation of the potential impacts and related mitigation measures, including the following:

- A surface water management system to control runoff from areas upslope as well as within the project site. This may include the use of soil stabilization berms, drainage channels, detention and infiltration basis, and other features as required to prevent run-on and runoff, and to promote drainage while maintaining site stability.
- The basis of design for the surface drainage system will include the regulatory requirements of the County of Kaua'i, and the State of Hawai'i.
- Operational practices, including the use of BMPs and monitoring, will likely be required to maintain control of surface water runoff, and to prevent the comingling of runoff with potential non-stormwater discharges.

5.4 GROUNDWATER AND HYDROLOGY

Rainfall is the source of all fresh water in Kaua'i. Some of the rainfall runs off directly to the sea via surface flow or streams, some escapes into the atmosphere by evaporation and transpiration, and some percolates downward through soils and rocks, eventually becoming groundwater. Groundwater moves slowly in rocks and soil and eventually reaches points of discharge at springs and seeps in stream valleys and along the shore.

The complexity of the geology of Kaua'i and the wide range in the permeability of Kaua'i lava flows are not favorable for the formation of large, well-developed Ghyben-Herzberg lenses, such as those present on O'ahu and Maui. In much of Kaua'i, the rocks above and below sea level are thick-bedded, massive, dense, and of generally low permeability. In these rocks, the fresh water may not occur as buoyant systems as found in well-developed Ghyben-Herzberg lenses. In some areas of higher permeability, the aquifers are cut by dikes or other structures that limit the extent of the fresh water lenses. In other areas where the extent of permeable rock is large, the recharge of fresh water is too small to maintain well-developed lenses.

The proposed MSWLF and alternate RRP sites are within the geologic/hydrogeologic region known as the Līhu'e District. The east boundary is the east shore between Wailua and Kawelikoā. The northeast boundary runs from Wailua through Nonou peak and along Kuilau and Kamo'oho'opulu ridges to Wēkiu peak. The west boundary is a broad arc running southwestward from Wēkiu to Mount Wai'ale'ale then southward to Kāhili peak and southeastward along Hā'upu ridge to Kawelikoā (Macdonald, Davis, and Cox 1960).

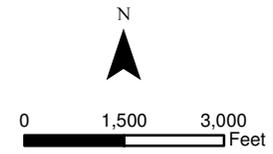
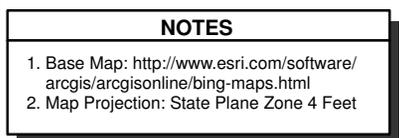
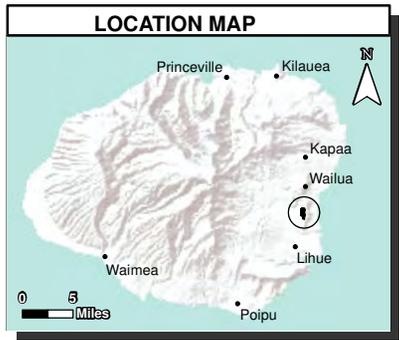
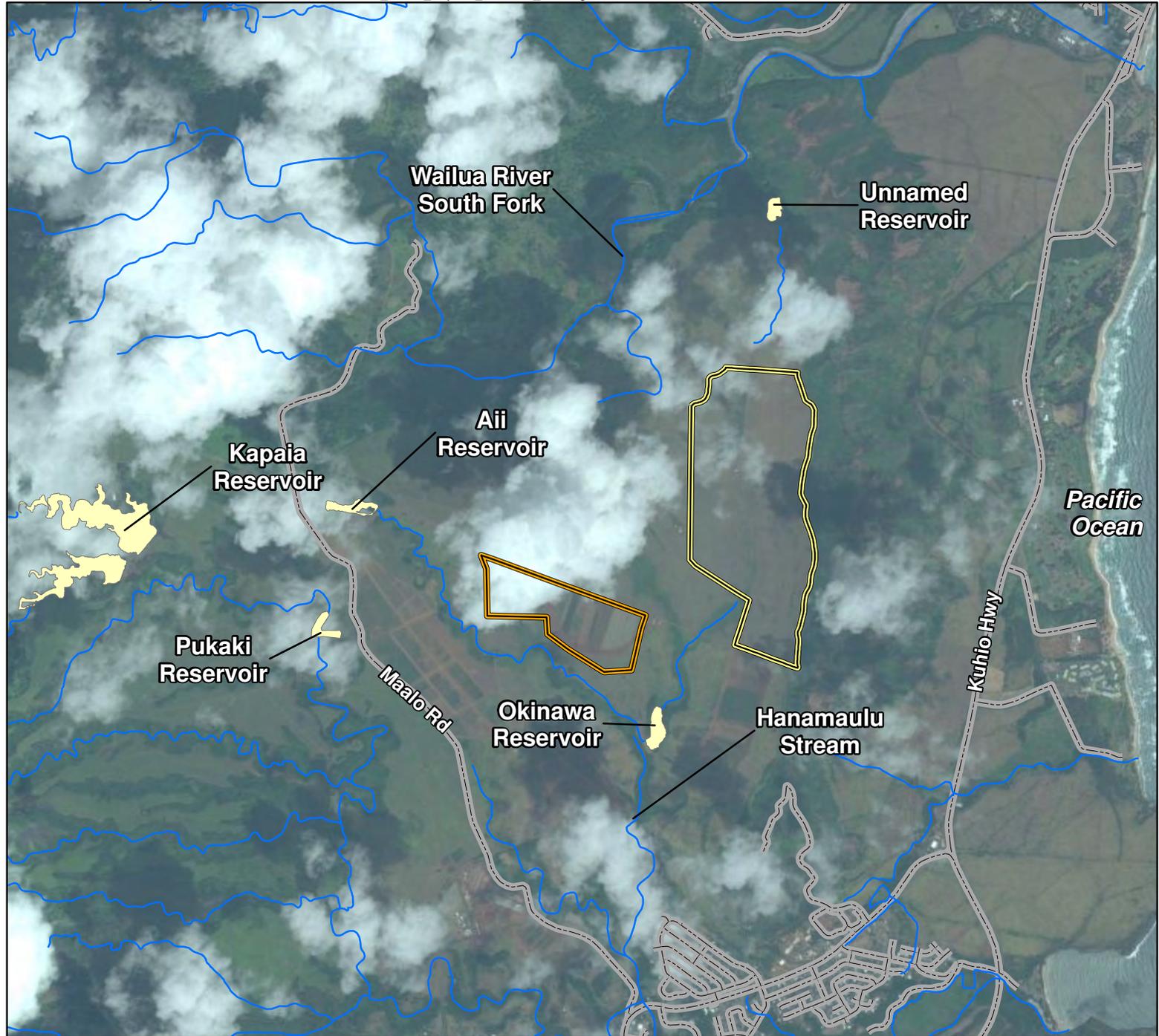


Figure 5-2
 Surface Water in
 the Project Vicinity
 EA/EISPN
 New Kaua'i Landfill and RRP
 Ma'alo, Kaua'i, Hawai'i

5.4.1 Basal Groundwater

Basal groundwater occurs in the lava flows of the Nāpali formation in Kālepa ridge, in most of Hā'upu ridge, and probably in Nonou ridge. Wells investigated before 1960 near the Kālepa ridge had basal heads produced by the impounding effect of lava flows of the Kōloa volcanic series surrounding the ridge, with thicknesses that ranged from approximately 10 to 16 feet. Dikes in the ridge probably divide the basal aquifer into compartments, but wells are too few to estimate the size of the compartments and their water-bearing capacities. As with many deep wells in Hawai'i, with a drop in the hydraulic head of more than 3 feet, there is a corresponding increase in chloride content. The general range of fluctuation in wells representative of Kaua'i, as investigated by Macdonald, Davis, and Cox (1960), was approximately 40 parts per million (ppm) (a representative sample indicated more extreme chloride levels ranging from 23 to 180 ppm).

5.4.2 Shallow Groundwater

Shallow groundwater may discharge into streams from the lava flows of the Nāpali formation that make up the high west wall of the Līhu'e depression, but its occurrence does not appear favorable for easy development of the groundwater. Shallow water issues from small perched bodies and dike reservoirs, but can be seen only in seeps and small springs distributed along the stream channels and valley walls. No flow from dike reservoirs occurs at large springs that would encourage development of high-level groundwater in tunnels.

5.4.3 Project Site in Relation to Protected Groundwater Areas

The proposed project site lies above (mauka of) the State of Hawai'i Underground Injection Control (UIC) Line (Figure 5-3). The groundwater below the site is therefore designated as a potential groundwater drinking water source by the DOH.

Following a August 24, 2011 meeting with a DOH Safe Drinking Water Branch (SDWB) representative (Jennifer Nikado), SDWB representatives performed internal analysis of GIS files of the eight potential MSWLF sites provided by AECOM and confirmed that the Ma'alo proposed MSWLF site and alternate RRP site are more than 1,000 ft from known drinking water sources.

5.4.4 Potential Project Effects and Mitigation Measures

In the absence of mitigation measures, the location of the proposed MSWLF site and alternate RRP site within the State UIC zone has the potential to impact a potential drinking water supply. However, the proposed sites are at least 1,000 ft from any known of planned supply wells or potential drinking water sources. In addition, the County of Kaua'i DOW has reviewed the location of the proposed MSWLF site and alternate RRP site to determine whether there are any current water supply wells or any planned development of well sites in the vicinity of the project. A DOW representative reported that there are no active wells and no current plans for the DOW to develop any wells within 1,000 ft of the proposed sites (Eddy 2011).

The development of the proposed landfill and RRP will be subject to regulatory coordination with the DOH SDWB, SHWB, and County DOW to identify and develop appropriate mitigation measures to maintain protection of groundwater resources within the UIC zone. These measures will be further described in the project DEIS and will likely include the following:

- A site surface drainage system that will be designed to control surface water flows over the landfill and RRP site, and minimize infiltration of rainfall into the waste mass
- A landfill liner system (including integration of the base and side slope liners) to promote a continuous barrier beneath the landfill to impede the flow of leachate
- A leachate collection system (including sump for the monitoring, collection, and pumping out of leachate)

- Final cover and grades to provide long-term management of the site during the sequence of operations and following closure of the facility
- A groundwater monitoring program
- Operations, practices, and other mitigation measures as required for the landfill and RRP site

5.5 WETLANDS

The USACE and the United States Environmental Protection Agency (EPA) define wetlands as "...areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include swamps, marshes, bogs, and similar areas. The USACE evaluates three indicators of wetlands when making wetland determinations: vegetation, soil, and hydrology. All three characteristics must be present during some portion of the growing season for an area to be a wetland. If the area occurs in a flood plain or otherwise has low spots in which water stands at or above the soil surface during the growing season, then it meets the criteria for wetland hydrology.

A preliminary investigation of the project site to identify potential resources relative to the three wetland indicators was undertaken using the USFWS National Wetlands Inventory (NWI), followed by site reconnaissance. Because the NWI mapped several former and current irrigation ditches on the proposed MSWLF site as potential wetlands, the USACE was consulted. Based on information to date, the USACE is expected to determine that no jurisdictional wetlands exist on the proposed MSWLF site or on the alternate RRP site. A nearby offsite wetland was identified southwest of the proposed MSWLF site.

A wetland is located southwest of the proposed MSWLF site border, near the terminus of the offsite Hanamā'ulu Stream. The NWI labels the wetland as "Freshwater Emergent Wetland," with a classification of PEM1C (see Figure 5-4), which is defined as follows (USFWS 2011):

- P System – Palustrine: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5 part per thousand (ppt). Wetlands lacking such vegetation are also included if they exhibit all of the following characteristics: (1) are less than 8 hectares (20 acres); (2) do not have an active wave-formed or bedrock shoreline feature; (3) have at low water a depth less than 2 meters (6.6 feet) in the deepest part of the basin; and (4) have a salinity due to ocean-derived salts of less than 0.5 ppt.
- EM Class – Emergent: Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.
- 1 Subclass – Persistent: Dominated by species that normally remains standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.
- C Water Regime – Seasonally Flooded: Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.

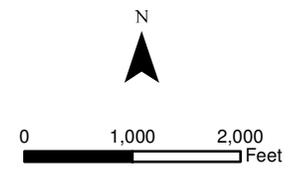
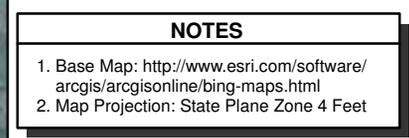
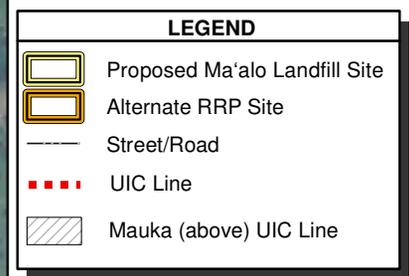
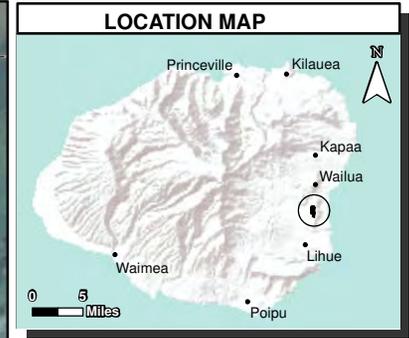
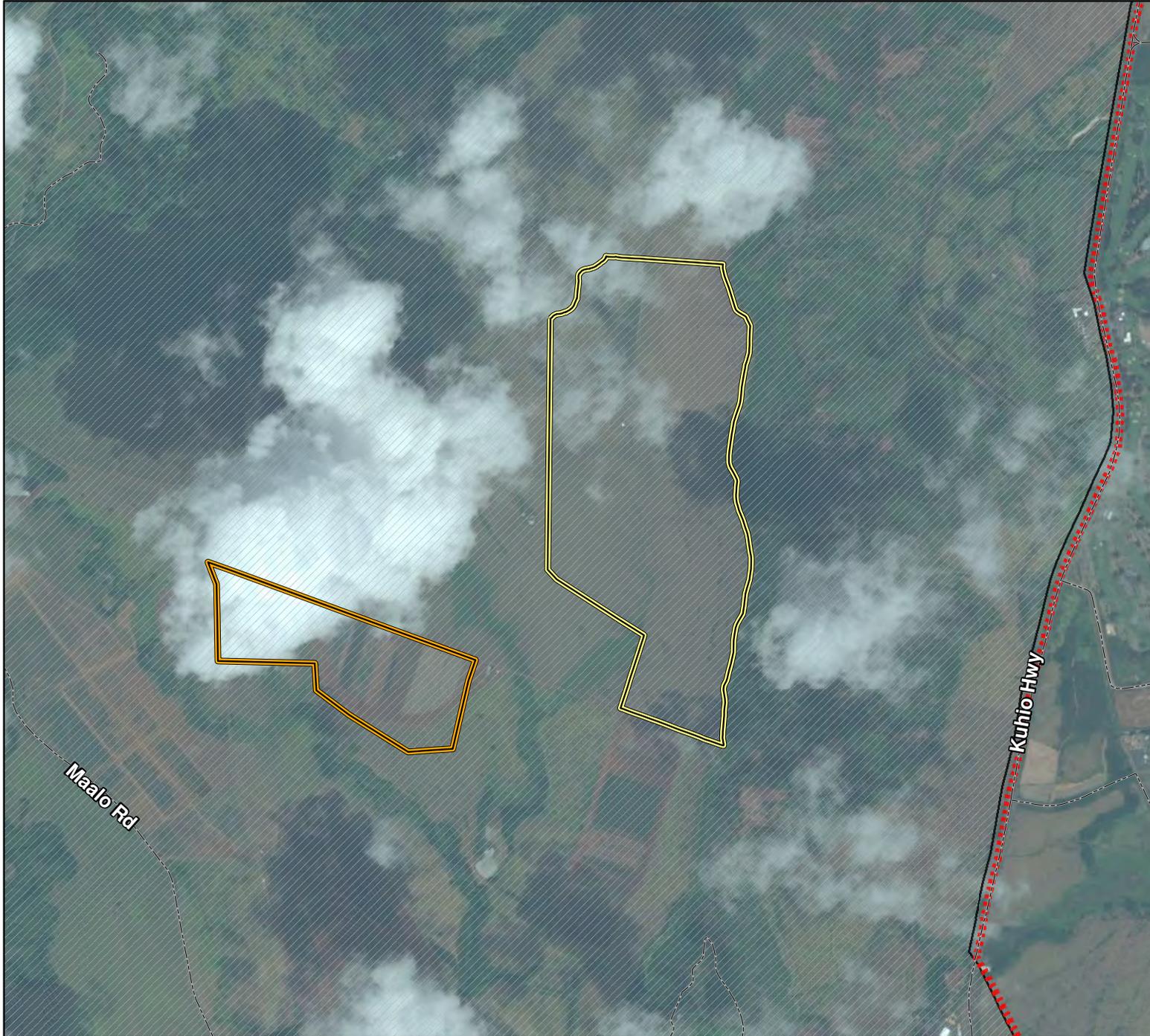
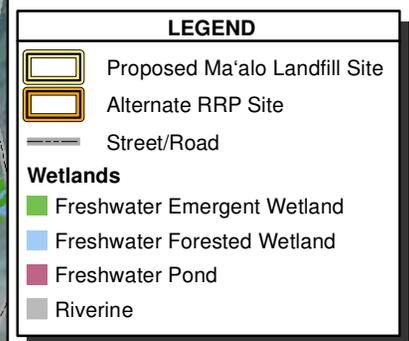
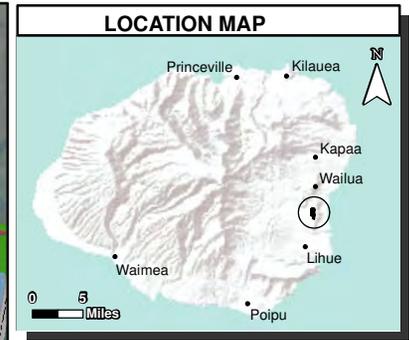
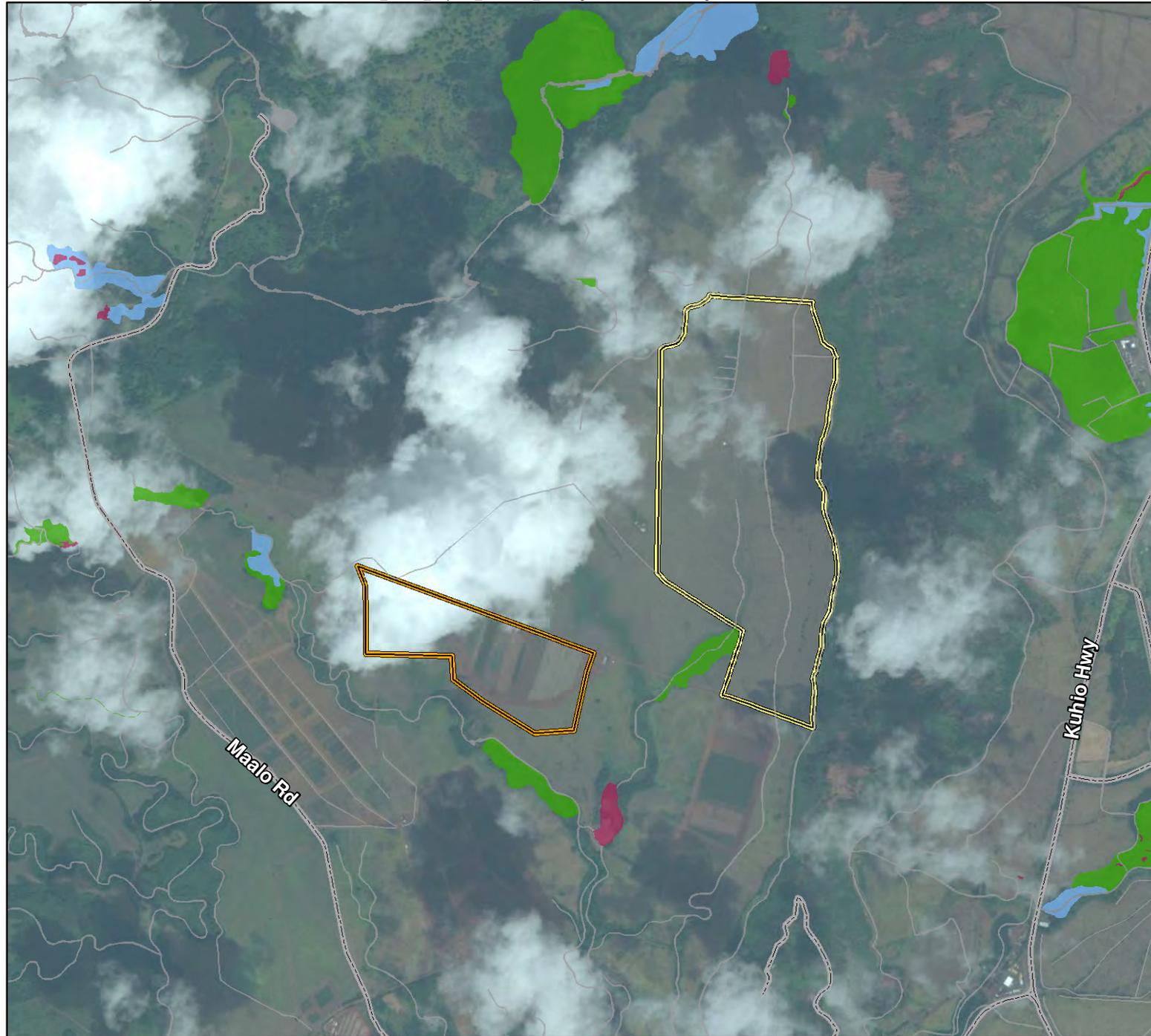


Figure 5-3
Underground Injection
Control (UIC) Line in
the Project Vicinity
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i



- NOTES**
1. Wetland data source: U.S. Fish and Wildlife Service
 2. Base Map: <http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>
 3. Map Projection: State Plane Zone 4 Feet

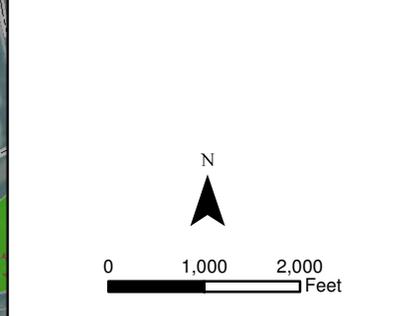


Figure 5-4
USFWS-Designated Wetlands
in the Project Vicinity
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i

Potential Project Effects and Mitigation Measures. A preliminary review of the project site concluded that the project boundaries do not presently contain wetland resources as delineated by the USFWS NWI. In order to confirm this finding, further investigation concerning the potential presence of wetlands is in progress and is being coordinated with the USACE. The results of the wetlands delineation investigation with USACE will be provided in the project DEIS, and will include further detail on the potential for adverse effects, permit requirements and any mitigation measures, as applicable.

5.6 NATURAL HAZARDS

5.6.1 Earthquake

Buildings would be designed and constructed at the site in accordance with the Uniform Building Code (UBC), providing minimum design criteria to address potential for seismic damage. The UBC scale is rated from Seismic Zone 0 to Zone 4, with 0 the lowest level for potential seismic induced ground movement. The entire island of Kaua'i, including the proposed sites, is designated in Seismic Zone 1 (see Figure 5-5).

Potential Project Effects and Mitigation Measures. The proposed project is not anticipated to be adversely affected by seismic activity. No habitable structures will be required, and all buildings and structures, including graded surfaces, will be developed in accordance with applicable standards to address construction activities in Seismic Zone 1, a designation indicating minimal seismic hazard.

5.6.2 Hurricane

The Hawaiian Islands are seasonally susceptible to Pacific hurricanes from the late summer to early winter months. The island of Kaua'i has experienced two major hurricanes since 1982: 'Iwa in 1982 and 'Iniki in 1992. It is difficult to predict these natural occurrences, but it is reasonable to assume that future such events will occur. The project site is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes.

Extremely high wind conditions are of concern for any landfill site with an active cell in use. A landfill cell is a discrete portion of the landfill where MSW is placed, compacted, and covered; the active cell is that portion of the landfill that is receiving MSW at a given time. The operation of the active portion of the landfill provides some inherent mitigation against significant wind impacts by allowing active filling of only one cell at a time, use of daily cover soil to cover the active portion at the end of each work day, and closure of cells as they fill up. Landfill cells that have been filled to capacity are covered by soil and revegetated to stabilize the surface, thereby reducing wind and runoff. These combined measures reduce the potential for landfilled refuse materials to become displaced and airborne.

Potential Project Effects and Mitigation Measures. High wind and rain conditions associated with hurricanes have the potential to disperse litter, cover material (principally soils), and excessive amounts of water onto areas surrounding the proposed MSWLF site. Mitigation measures to address the potential for adverse effects to landfill operations will likely include the following:

- Working on only one active landfill cell at a time to reduce the exposure of MSW
- Proper maintenance and operating practices including the use of cover material and compaction, and ensuring that vegetative controls are established as soon as practicable to stabilize the site
- Proper maintenance of the landfill drainage control system
- Continual monitoring of site conditions and contingency planning

Other mitigation measures including operational and maintenance controls and practices for both the landfill and RRP site will be further described in the project DEIS.

5.6.3 Flood Hazards

The boundaries of the proposed MSWLF site and alternate RRP site are within Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) Panel 140F. Both sites are in Zone X (see Figure 5-6), which has been determined to be outside the 0.2% annual chance floodplain.

Potential Project Effects and Mitigation Measures. Owners proposing the siting of a MSWLF within a floodplain must demonstrate prior to permitting that the proposed landfill will not restrict the flow of a 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste. Accordingly, all areas classified as Zone A, AE, AH, AO, VE, or as a floodway were combined to produce the 100-year floodplain exclusion zone for MSWLF site selection. The proposed MSWLF site and alternate RRP site are located in Zone X, and are not within a 100-year floodplain.

The project is not expected to exacerbate flood conditions or be adversely affected by flooding. All proposed facilities will be developed outside of the floodplain exclusion zone. Design and construction of structures will be performed in compliance with Section 8-12, Kaua'i County Code.

As appropriate, further detail on the potential for adverse effects associated with flooding, including required mitigation measures, will be provided in the project DEIS.

Intermediate cover would be placed over areas that are not being actively worked. The intermediate cover is compacted to a minimum of approximately 1 ft, and graded to promote runoff in a controlled manner. The process of compacting the solid waste and soil material increases the stability of the site.

The RRP site will principally consist of various recycling and related facilities including buildings and open and closed work areas. These facilities will be managed to reduce exposure and wind associated impacts from high winds including hurricanes. Further discussion of the facilities planned will be described in the DEIS.

5.6.4 Tsunami

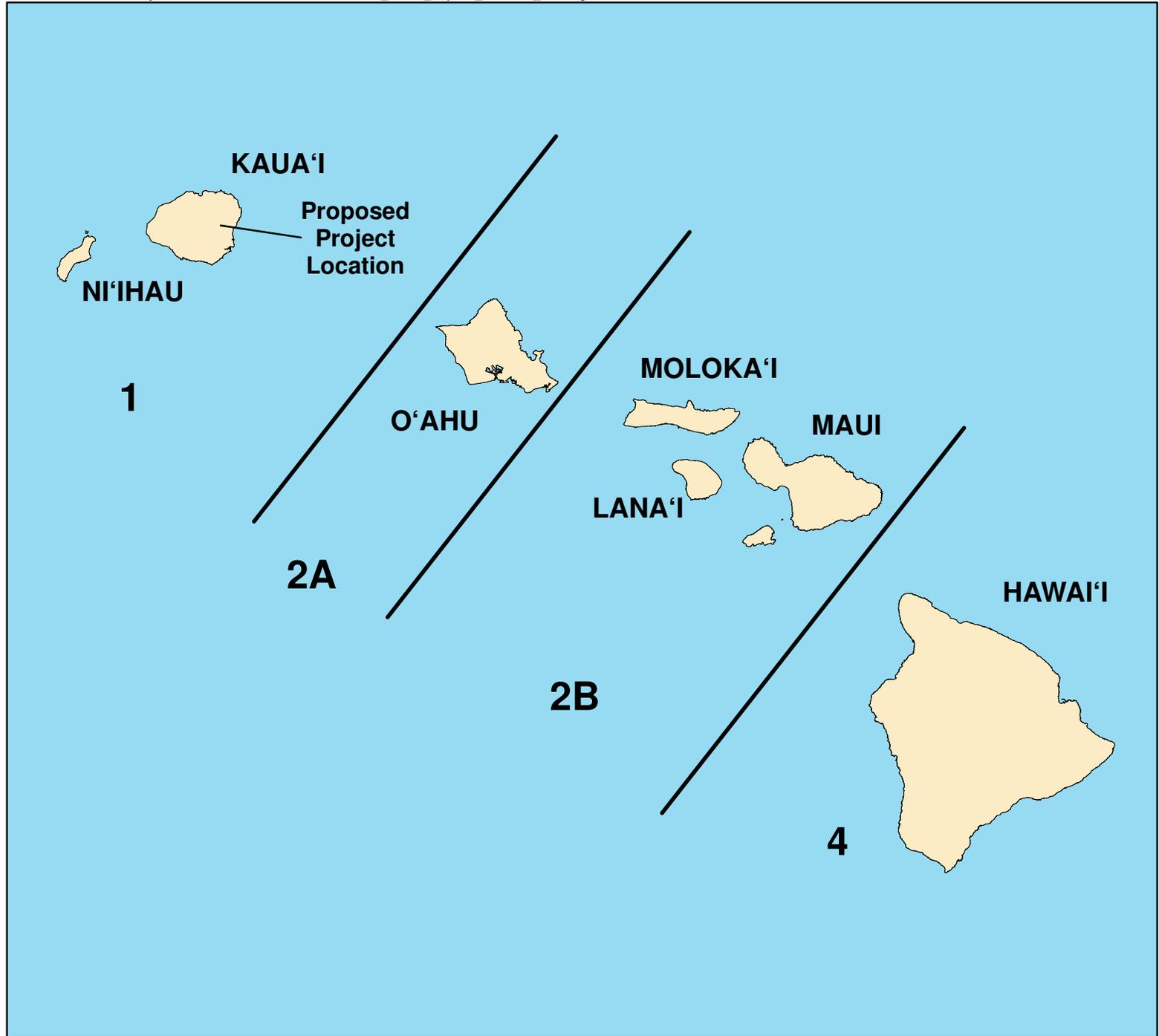
A tsunami involves the generation of a series of destructive ocean waves that can affect all shorelines. The generation of these waves can occur at any time with limited or no warning. Persons in shoreline or beach areas are advised to go to higher ground immediately.

According to the Kaua'i Civil Defense Agency, the project site is not subject to evacuation in the event of a tsunami. The coastal areas requiring evacuation are along the Ahukini Recreation Pier State Park, and generally from the Lydgate State Park northward encompassing much of the coastal area along the Kūhiō Highway. The location of the project site mauka of the highway (and the Kalepa ridge) is considered to be safe from wave action and is not identified as a location subject to inundation by a tsunami.

Potential Project Effects and Mitigation Measures. The potential for adverse effects due to tsunami are not anticipated, and therefore no mitigation measures are proposed.

5.7 AIR QUALITY

Air quality in the Līhu'e area is generally good. In 1972, the Clean Air Branch (CAB) established an air quality monitoring station at the District Health Office on 'Umi Street in downtown Līhu'e. It is the only monitoring station on the island of Kaua'i. The area is primarily commercial and residential with surrounding agricultural lands.



LEGEND	
	Island

NOTES
1. Seismic data source: USGS HVO http://hvo.wr.usgs.gov/earthquakes/hazards/
2. Map Projection: State Plane Zone 4 Feet

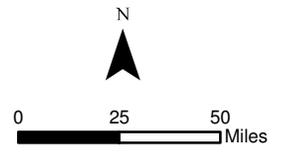
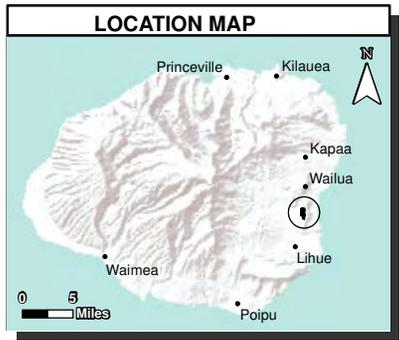
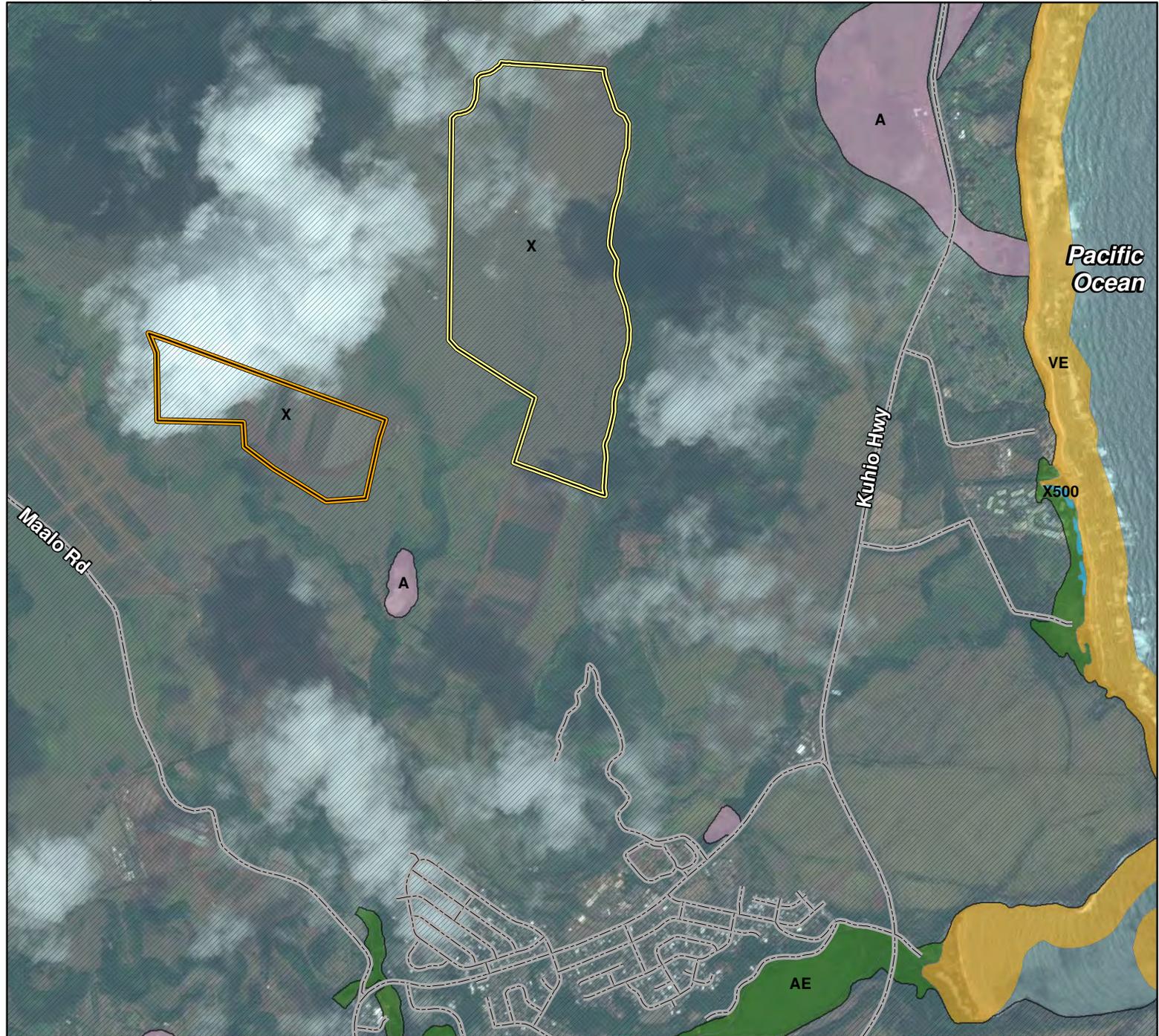


Figure 5-5
Hawai'i Seismic Hazard Zones
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i



LEGEND

- Proposed Ma'alo Landfill Site
- Alternate RRP Site
- Street/Road

FEMA Designations

- VE } 100-yr Flood Plain
- AE } 100-yr Flood Plain
- A } 100-yr Flood Plain
- X500 } 500-yr Flood Plain
- X } Areas with no Base Flood Depths shown

NOTES

1. Base Map: <http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>
2. Map Projection: State Plane Zone 4 Feet

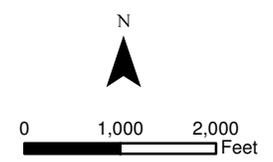


Figure 5-6
Flood Zones in
the Project Vicinity
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i

In 2005, the detection and measurement of particulate matter (PM-10) ranged from 11 to 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), with an average of $22 \mu\text{g}/\text{m}^3$, all of which are well below the Hawai'i State Standard and the Federal and Primary and Secondary Standard of $50 \mu\text{g}/\text{m}^3$ (annual). Although information on other pollution sources was not generally available from the DOH for the specific location of the proposed landfill and RRP site, the DOH in its assessment of statewide air quality noted that air "quality in the State of Hawai'i continues to be one of the best in the nation, and criteria pollutant levels remain well below state and federal ambient air quality standards" (DOH 2006).

Potential Project Effects and Mitigation Measures. Although air quality at the project site is relatively good, and the natural incidence of trade winds helps to dissipate much of the localized odor that can be generated during the landfilling of MSW, high winds can also increase the incidence of litter, dust, and odors blowing from active working areas of the site.

There is also a potential for short-term localized impacts on air quality during site construction activities. The operation of vehicles, heavy equipment, and generators at the project site can generate fugitive dust and pollution emissions. Adjacent areas may be temporarily affected during the period of construction by dust and pollution. However, these impacts will be temporary, will cease when construction is completed, and will likely be mitigated via the following practices:

- Phasing construction to minimize dust-generating activities
- Minimizing the use of dust-generating materials and centralizing material transfer points and onsite vehicle travel ways
- Locating dusty equipment in areas of least impact
- Providing an adequate water source at the site prior to start-up of construction activities
- Landscaping bare areas, including slopes, starting from the initial grading phase
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of earthwork

Other dust control practices will be conducted in accordance with Chapter 60.1, HAR, *Air Pollution Control*. These measures include ensuring that project contractors properly maintain their internal combustion engines, the compacting and use of intermediate cover, use of portable and permanent litter fences along the working face of the landfill in relation to prevailing winds to confine windblown litter, and the use of maintenance personnel in the event of high winds to collect litter off site.

Other potential effects and mitigation measures will be described as appropriate in the project DEIS.

5.8 ACOUSTIC CHARACTERISTICS

The general area is currently used for agriculture. There are few noise-generating sources or noise receptors in the immediate vicinity of the proposed MSWLF site and alternate RRP site. There is, however, the occasional sound of vehicles and operating equipment within the area in support of agricultural activities.

Potential Project Effects and Mitigation Measures. The potential for short-term noise impacts will primarily be related to construction activities associated with the landfill and RRP. The majority of this noise will be during operation and mobilization of heavy construction equipment, including site preparation and earthwork. Construction and operation of the landfill and RRP site are not anticipated to result in significant effects based on the nature of the operations anticipated and the relatively distant location of the proposed MSWLF site from areas of active residential or commercial uses.

Mitigation of short-term construction impacts will be based on compliance with the provisions of Chapter 46, HAR, *Community Noise Control*. Mitigation measures are anticipated to include the following:

- Construction vehicles and internal-combustion-powered machinery will be muffled with noise attenuation equipment in good operating condition.
- Landscaping that will provide visual mitigation and soil stabilization may also provide noise reduction.

Additional discussion of the potential for noise impacts will be further described in the project DEIS.

5.9 FLORA AND FAUNA

5.9.1 Flora

Plant species found within and surrounding the proposed project location consists primarily of fallow agricultural species, with some scattered introduced, non-native trees and shrub species. Due to past agricultural practices at the site involving extensive clearing and planting, discovering the presence of rare, threatened, or endangered species is not anticipated.

Potential Project Effects and Mitigation Measures. In order to further assess the potential for adverse effects to rare, threatened, and endangered species and habitat, it is anticipated that a botanical survey of the sites will be conducted for the subject project. As appropriate, mitigation measures will be developed and described in the project DEIS.

5.9.2 Fauna

A study of the faunal resources within and surrounding the project site is needed to assess the potential for adverse effects by the project to rare, threatened, and endangered species and habitat.

Potential Project Effects and Mitigation Measures. In order to further assess the potential for adverse effects to rare, threatened, and endangered species and habitat, it is anticipated that a faunal survey of the sites will be conducted for the subject project. As appropriate, mitigation measures will be developed and described in the project DEIS.

6.0 PUBLIC SERVICES

6.1 TRAFFIC AND CIRCULATION

The proposed project site in Ma'alo is the largest of the landfill parcels evaluated during the 2012 Siting Study (AECOM 2012) and previous activities, with by far the longest useful lifetime. It is approximately 2 miles from the urbanized areas of Hanamā'ulu and Līhu'e. The site itself is not located near residential or developed areas, but Ma'alo Road, which is expected to connect the proposed MSWLF site to Kūhiō Highway, is located near residences in Hanamā'ulu. Kūhiō Highway in this section of the island has a significant amount of traffic since it provides a link between Līhu'e and the Kapa'a-Wailua area. The Ma'alo Road intersection with Kūhiō Highway is near the base of a ravine and at the midpoint of a curve. Ma'alo Road is the main tourist road to the Wailua Falls Park.

Additionally, the State Department of Transportation is considering a possible highway bypass project to provide relief to Kūhiō Highway in the vicinity of Hanamā'ulu and Līhu'e. If this State project is pursued and completed in a timely fashion, then an alternate access road may be proposed and developed for the landfill and RRP.

Potential Project Effects and Mitigation Measures. It is anticipated that a Traffic Impact Assessment Report (TIAR) will be conducted to study the existing traffic and circulation of the project site and the potential traffic impacts associated with the development of a connector access road from the landfill and RRP site to Ma'alo Road. The TIAR will evaluate the requirements for various traffic controls to address safety as well as reduce possible congestion. The measures under consideration will include the potential need for a signalized intersection, and the use of acceleration, deceleration, and left turn lanes at the Ma'alo Road/Kūhiō Highway intersection. The TIAR will also evaluate the geometric requirements of Ma'alo Road.

If the State Highway Bypass project seems likely to proceed, then the alternative route will be similarly analyzed.

Further discussion of the TIAR report including findings and recommendations to address potential adverse effects to traffic and mitigation measures will be provided in the project DEIS.

6.2 WASTEWATER

Currently, no wastewater services exist in the project area. As required by the DOH, an individual septic treatment system will be installed to handle uses from the landfill and RRP sites. Further evaluation of this requirement will be discussed in the project DEIS.

Potential Project Effects and Mitigation Measures. The proposed project is not anticipated to result in the potential for adverse effects due to wastewater treatment. This is because all wastewater facilities proposed for the project will be designed in accordance with the requirements of the County and State DOH, and the wastewater will not feed into the existing municipal treatment facilities. Further detail will be provided in the project DEIS.

6.3 UTILITIES

A preliminary investigation of the project site indicates the access road and electrical and water supply connections would be extended from Ma'alo Road to accommodate the landfill and RRP sites (the existing water and electric utility lines on Ma'alo Road are approximately 2.2 miles from the proposed MSWLF site). Further details on utility requirements are under investigation and will be further discussed in the project DEIS.

Potential Project Effects and Mitigation Measures. Further information on the utility improvements required for the project and the potential for adverse effects and proposed mitigation measures will be provided in the project DEIS.

6.4 DRAINAGE

The existing proposed MSWLF site and alternate RRP site are principally used for agriculture and grazing, and are relatively undeveloped. An engineered drainage control system will be developed for the MSWLF and RRP to manage rainfall, run-on, and runoff. The design and construction of the system will be in accordance with the requirements of the County of Kaua'i drainage and erosion control standards, and the SHWB, as part of the County's application for the Solid Waste Permit.

Potential Project Effects and Mitigation Measures. Potential long-term impacts include the potential discharge of sediments and turbidity or other material in storm water runoff due to facility operation. Run-on from offsite sources and runoff from onsite sources must be prevented to prevent adverse effects due to drainage. Potential short-term impacts include the discharge of sediments and turbidity in storm water runoff due to construction. Construction activities will include excavation and grading to achieve proper elevations and grades of the site for the landfill and RRP. Because planned improvements will result in more than 1 acre of ground disturbance during construction, project activities will be subject to a NPDES Notice of Intent (NOI) Form C for Storm Water Discharges Associated with Construction Activity from the DOH Clean Water Branch (CWB). This application requires the implementation of BMPs including site management measures and physical controls (e.g., diversion berms, silt fences, detention ponds, and management and vegetative controls) to reduce pollutants in storm water runoff.

Mitigation measures will comply with Chapter 54, HAR, *Water Quality Standards*; Chapter 55, HAR, *Water Pollution Control*; and the County of Kaua'i grading and erosion control standards and BMPs (*Sediment and Erosion Control Ordinance No. 808*; *Interim Construction BMPs for Sediment and Erosion Control for the County of Kaua'i*, 2004). Mitigation measures and BMPs will likely include the following:

- General BMPs: Construction near drainageways shall be limited to avoid the potential for release of sediments into stormwater.
- Before Construction: Existing groundcover shall not be destroyed, removed, or disturbed more than 20 calendar days prior to the start of construction. Erosion and sediment control measures shall be in place and functional before earthwork begins, and shall be maintained throughout the construction period. Temporary measures may be removed at the beginning of the work day, but shall be replaced at the end of the work day.
- During Construction: Clearing shall be held to the minimum necessary for grading, equipment operation, and site work. Construction shall be sequenced to minimize the exposure time of cleared surface areas. Areas of one phase shall be stabilized before another phase can be initiated. Stabilization shall be accomplished by protecting areas of disturbed soils from rainfall and runoff by use of structural controls such as polyvinyl chloride sheets, geotextile filter fabric, berms or sediment basins, or vegetative controls such as grass seedling or hydromulch.
- Temporary soil stabilization with appropriate vegetation shall be applied on areas that remain unfinished for more than 30 calendar days, and permanent soil stabilization using vegetative controls shall be applied as soon as practicable after final grading.
- All control measures shall be checked and repaired as necessary, e.g., weekly in dry periods and within 24 hours after any heavy rainfall event. During periods of prolonged rainfall, daily checking shall be conducted.
- After Construction: All areas of ground disturbance shall be stabilized with landscaping consisting of planted vegetation and groundcover.
- During Adverse Weather Conditions: The contractor shall monitor weather reports daily during the work period. If an emergency weather warning is issued, work shall cease. All equipment and materials shall be secured against wind, rainfall and flooding, and the work

area cleared of construction debris to the extent practicable. Work shall not resume until conditions improve and weather warnings are lifted.

- Prior to recommencement of work following the weather warning, the Contractor shall inspect all BMPs, including silt fencing, sandbag barriers, and the stabilized construction entrance, to repair or replace any materials as required to maintain proper functioning.
- Construction materials and debris that are dispersed due to wind or rainfall shall be collected by the Contractor, as practicable, for reuse or disposal in compliance with State and County regulations.
- Facility and site stormwater management features may include the use of detention and infiltration basins and ditches, berms, downdrains, and other related control features.

The potential for long-term impacts associated with drainage will be minimized by adherence to State and County of Kaua'i standards for drainage control.

Further description of the proposed drainage control system, the potential for wetlands, and the potential for adverse effects associated with drainage, including appropriate mitigation measures, will be provided in the project DEIS.

7.0 SOCIOECONOMIC AND CULTURAL ENVIRONMENT

7.1 SCENIC AND AESTHETIC ENVIRONMENT

The area is characterized by principally rural surroundings, with few developed structures nearby. The majority of the project site is not expected to be readily visible from the Kūhiō Highway due to the Kalepa Ridge. Views into the project site will be primarily along the network of rudimentary agricultural roadways serving the uplands surrounding the project site.

The proposed project location is within and surrounded by mostly fallow agricultural fields. The Kūhiō Highway, located approximately 2 miles east, is situated along the coastline. Views of the project site from the highway are mostly blocked by the Kalepa Ridge to the west. North of the site is a fork of the Wailua River. The banks above this fork are green and lush with vegetation, and obstruct views of the site. Southward and westward are other agricultural fields and the Ai'i Reservoir. The Pukaki Reservoir is located approximately 0.25 mile to the south, and the Kapaia Reservoir is situated further west, more than 0.5 mile from the Ma'alo site.

Potential Project Effects and Mitigation Measures. The potential for adverse viewplane impacts associated with the proposed landfill and RRP is presently under investigation and will be further discussed in the project DEIS. Mitigation measures may include the use of landscaping tied to the phased development of the landfill and RRP sites.

Planting of vegetation including hedges and taller trees will likely be recommended to maximize the effective use of ground cover. Small trees that require low maintenance may be recommended; e.g., Hala, variegated Hala, Ho'awa, Alahe'e, 'Ōhi'a Lehua, and Kokio Keokeo. Large canopy trees may be avoided as root systems can destroy underground infrastructure.

Further information on the potential for adverse effects and proposed mitigation measures will be developed and provided in the project DEIS.

7.2 DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

The population of the Island of Kaua'i was 67,091 persons as of April 1, 2010, representing an increase of approximately 8,628 from 2000, when the population was 58,463 (State of Hawai'i 2011). The population distribution across the five districts of Kaua'i are listed in Table 7-1.

Table 7-1: Population Distribution and Change Since 2000

Center	Population	Percent Change
Kauai County	67,091	14.8
Hanalei	7,828	23.3
Kawaihau	20,992	13.3
Līhu'e	14,683	22.1
Kōloa	14,086	9.7
Waimea	9,502	8.9

The project site is located within the Līhu'e District, but close to the boundary of the Kawaihau District. Together the two districts compose approximately half of Kaua'i's population at 35,675.

The communities located closest to the Ma'alo site are Hanamā'ulu and Līhu'e. According to the 2011 version of the State of Hawai'i Data Book, the 2010 population of Hanamā'ulu was 3,825 persons, and in Līhu'e was 6,455 persons.

Statewide income in 2010 on a per capita basis was \$41,550, and for the island of Kaua'i was \$35,304.

Potential Project Effects and Mitigation Measures. Although the proposed project will not in itself result in increased development or population growth, the use of the site will provide for disposal of MSW that will be a key factor in supporting and sustaining the growth and development of the island of Kaua'i.

Residential communities surrounding the project area are not anticipated to be adversely affected since no displacement of properties or residences will be required to support the proposed project. Further discussion and updated information will be provided in the DEIS. This information will include description and analysis of the demographic and socioeconomic characteristics of the project area and vicinity, and potential for adverse impacts and proposed mitigation measures to ensure the health and safety of area residents.

Further information on the potential for adverse effects will be provided in the project DEIS.

7.3 HISTORICAL AND ARCHAEOLOGICAL RESOURCES

An initial investigation of archaeological resources of the proposed project site was undertaken by Cultural Surveys Hawai'i in 2008. The following are abridged excerpts from the report, *Archaeological Literature Review of Eight Possible Locations for a Kaua'i Municipal Solid Waste Landfill, Ma'alo, Wailua Ahupua'a* (CSH 2008).

The conditions of the existing area immediately surrounding the proposed project site are rural, with the majority of the land being used primarily for agriculture. Development in this area is focused on the south side of the Kalepa Ridge near the coastline. Ma'alo Road and Wailua Falls are to the west and northwest (CSH 2008). In pre-contact times, the Wailua River, along both shores, was the most important high-status area on Kaua'i. This area was the center where Hawaiian royalty carried on their business and entertained visitors. Today only a small portion of this royal center remains in the remnants of the Hauola Pu'u honua (place of refuge), the birthstones, the royal coconut grove, the bellstone, and the royal fishponds. No visible surface remnants exist today of the chiefly homes, the supporting lo'i and kula lands, the places of recreation, the burial place called Mahunapuoni (just makai of Kapule's fishponds), the fish traps, or the canoe landings (CSH 2008).

Early historical accounts of this area are sparse, and few westerners visited the Wailua area in the years following the arrival of Captain Cook. Most of the voyagers during the late eighteenth and early nineteenth centuries landed at Waimea, on the southwestern side of the island, a location that would eventually overshadow Wailua in its royal importance because of the opportunities there to associate and trade with foreigners (Lydgate 1920) (CSH 2008).

Historic and modern agricultural activity has drastically impacted the landscape in the vicinity of the project area. It is likely that pre-contact agricultural and habitation activity areas were located near the project area, especially along the Wailua River and its tributaries, but disturbance from rice and sugarcane farming has probably destroyed any remains of pre-contact archaeology within the project area (CSH 2008).

Potential Project Effects and Mitigation Measures. Further investigations to ascertain the potential for historic and archaeological resources in the proposed area will be conducted and described in the DEIS. This will include an assessment of the potential for adverse impacts and proposed mitigation measures as appropriate to ensure "no effect" to archaeological resources, if indicated.

7.4 CULTURAL IMPACT ASSESSMENT

A Cultural Impact Assessment has been commissioned for the proposed project area to determine and assess the effects of the project on traditional and contemporary cultural practices. The Cultural Impact Assessment will collect information from historical documents, the existing record of archaeological investigations, and kama'aina interviews. Hawaiian and Native Hawaiian

Organizations, government agencies, community members, and cultural and lineal descendants with ties to the project site will be contacted, as feasible and appropriate, to: (1) identify potentially knowledgeable individuals with cultural expertise and knowledge of the project area and the surrounding vicinity, and (2) identify cultural concerns and potential impacts within the proposed project area.

Potential Project Effects and Mitigation Measures. Further information concerning the potential for adverse effects to cultural resources, based on the Cultural Impact Assessment, will be provided in the project DEIS. As appropriate, mitigation measures will be identified described in the DEIS.

7.5 EXISTING LAND USE AND OWNERSHIP

The proposed sites lie within two large parcels: the proposed MSWLF site (Ma'alo) is designated as TMK: (4) 3-9-002: 020, owned by the State of Hawai'i, comprising 2,162.78 acres; and the nearby alternate RRP site is designated as TMK: (4) 3-8-002: 001, owned by Grove Farm Company, Inc., comprising 1,114.91 acres.

The County of Kaua'i is presently in active discussions with the State for the use of TMK: (4) 3-9-002: 020, for both the MSWLF and the RRP. Both the County and State have agreed in principal for the use of the site, contingent on further discussion and agreement on details.

The County of Kaua'i is also in discussion with Grove Farm for the use of TMK: (4) 3-8-002: 001, for the RRP. There is presently an agreement in principal for the use of the site with further discussions pending to address details involving the proposed uses planned for the site.

Further information and detail concerning the County's proposed use of both parcels will be provided in the project DEIS. This information will include a discussion of the land use agreements, and costs involved for site acquisition.

Potential Project Effects and Mitigation Measures. The potential for adverse effects associated with the use of State land and private property will be addressed in the project DEIS. The DEIS will include an examination of the effect of acquiring State and private land that is presently in agriculture, and the public benefits associated with the co-location of a MSWLF and a RRP.

8.0 PERMITS AND REGULATORY APPROVALS THAT MAY BE REQUIRED

Table 8-1 summarizes the permits and approvals that may be required in order to implement the proposed MSWLF and RRP at Ma’alo. Also provided are citations of the applicable regulations and the administrative authority responsible for implementing the regulations.

Table 8-1: Permits and Regulatory Approvals that May be Required

Permit or Approval	Description	Regulation(s)	Administrative Authority
Solid Waste Permit	Expansion of a MSWLF must be authorized under a Solid Waste Permit issued by the DOH.	HRS 342H; HAR §11-58.1-04	DOH SDWB
Covered Source Air Permit	Covered sources include those sources that are major sources of air emissions and sources subject to a federal performance or control technology standard.	HAR §11-60.1-82	DOH CAB
Title V Air Permit	A Title V air permit is required to comply with the New Source Performance Standards found in 40 CFR Part 60, Subpart WWW.	40 CFR Part 60	DOH CAB; EPA
Historic Preservation Review	State and county projects that may affect a historic property must obtain a concurrence of “no historic properties affected” from SHPD, prior to commencement.	HRS Chapter 6E-8; HAR 13-275	DLNR SHPD
CWA Section 402 NPDES Permit(s)	Section 402 of the CWA establishes the NPDES program regulating the discharge of pollutants to waters of the United States. NPDES permits under Appendix B cover storm water and non-storm water runoff from industrial activities. NPDES permits under Appendix C are required to authorize discharges of storm water associated with construction activities that result in disturbance of 1 acre or more of total land area.	CWA (33 U.S.C. Section 1251 et seq.); HRS 342D; HAR 11-55, Appendix B and C	DOH CWB
CWA Section 404 Wetlands Protection	Customarily triggered with the filing of a Department of the Army Permit Application (may not be required for the Ma’alo sites).	CWA (33 U.S.C. Sec. 1251 et seq.);	U.S. Department of the Army
Grading Permit	A grading permit is required for grading that exceeds 100 yards of cut or fill or exceeds 5 ft in vertical height at its deepest point.	Ordinance No. 808	County of Kaua’i DPW, Engineering Division
Building Permit	A building permit is required for the landfill and RRP facility buildings.	Ordinance No. 929	County of Kaua’i DPW, Building Division
State Special Use Permit	The proposed Ma’alo MSWLF site is in State Agricultural District and therefore may require a State Special Use Permit.	HRS 205	County of Kaua’i Planning Department and State Land Use Commission
State Land Use District Boundary Amendment (SLUDBA)	An alternative to the State Special Use Permit that is under consideration involves filing a SLUDBA petition for a change in the State Land Use District designation from Agricultural to Urban. If selected, the State Special Use Permit will not be required.	HRS 205	State Land Use Commission
County Change of Zone Application	The requirement for a Change of Zone from Agriculture (A) to the General Industrial (IG) zone would be required following the filing and approval of the SLUDBA in accordance with Article 6 of the Comprehensive Zoning Ordinance (CZO).	CZO	County of Kaua’i Planning Department
Use of State Lands Ma’alo	The County of Kaua’i would have to formally acquire land use rights to state lands for a new MSWLF at Ma’alo.	Executive Order or other legal mechanism	DLNR (Board of Land and Natural Resources)
Sale or Lease of Private Property for Alternate RRP Site	The County of Kaua’i would have to enter into a sale or long-term lease with the owner of the alternate RRP site at Ma’alo, Grove Farm Company, Inc.	N/A	N/A

CWA Clean Water Act
CFR Code of Federal Regulations

DLNR Department of Land and Natural Resources, State of Hawai’i

N/A not applicable
SHPD State Historic Preservation Division

U.S.C. United States Code

9.0 RELATIONSHIP TO LAND USE PLANS, POLICIES, AND CONTROLS FOR THE POTENTIALLY EFFECTED AREA

Federal, State, and County regulations, land use plans, policies, and controls are established to guide development to enhance the overall environment and ensure that long-term social, economic, environmental, and land use needs of the people of Hawai'i are met. The proposed new MSWLF and RRP at Ma'alo will conform to the requirements of the laws, policies, and controls outlined below.

Further information concerning regulations and related requirements will be provided in the project DEIS, as appropriate.

9.1 FEDERAL

9.1.1 Resource Conservation and Recovery Act (RCRA)

RCRA (P.L. 94-580), an amendment to the Solid Waste Disposal Act of 1965, was enacted in 1976 to address the safe management and disposal of MSW (and industrial waste). RCRA defines a municipality as a "county... with responsibility for the planning or administration of solid waste management" (42 U.S.C. §6903). RCRA defines solid waste as:

Any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act..., or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954.... (42 U.S.C. §6903)

The goals established under RCRA include (42 U.S.C. §6902) the following:

- Promoting the protection of health and environment and conserving valuable material and energy resources.
- Promoting improved solid waste management techniques, including improving methods of collection, separation, and recovery of solid waste, and the environmentally safe disposal of non-recoverable residues.
- Promoting the application of solid waste management, resource recovery, and resource conservation systems that preserve and enhance the quality of air, water, and land resources.
- Reducing and eliminating the generation of hazardous waste as expeditiously as possible.

The national solid waste management program established under RCRA Subtitle D encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and MSW. The EPA sets criteria for MSWLF facilities and other solid waste disposal facilities, and prohibits the open dumping of solid waste. According to the EPA:

RCRA Subtitle D focuses on state and local governments as the primary planning, regulating, and implementing entities for the management of non-hazardous solid waste, such as household garbage and non-hazardous industrial solid waste. EPA provides these state and local agencies with information, guidance, policy and regulations through workshops and publications to help states and the regulated community make better decisions in dealing with waste issues, to reap the environmental and economic benefits of source reduction and recycling of solid wastes, and to require upgrading or closure of all environmentally unsound disposal units. In order to promote the use of safer units for solid waste disposal, EPA developed federal criteria for the proper design and operation of

municipal solid waste landfills (MSWLFs) and other solid waste disposal facilities. Many states have adopted these criteria into their solid waste programs.

Planning, development and operation of the proposed MSWLF at Ma'alo will comply with the requirements of RCRA Subtitle D.

9.1.2 Clean Water Act (CWA)

The Federal Water Pollution Control Act was enacted in 1948, and was later reorganized and expanded in 1972 with the passage of the Clean Water Act (CWA) (33 U.S.C. Section 1251, et seq.) and its amendments. The purpose of the CWA is to protect surface water quality in the United States. The Act does not directly address groundwater or water quality issues (which are addressed by the Safe Drinking Water Act). The CWA establishes the basic structure for regulating discharges of pollutants into waters of the United States and provides for the regulation of quality standards for surface waters.

Section 402 of the CWA makes it unlawful to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained. Point sources are discrete conveyances such as pipes or man-made ditches. The CWA is administered in Hawai'i through the CWB under Chapter 11-55, HAR, Water Pollution Control.

Section 404 of the CWA established a program to regulate the discharge of dredged or fill material into waters of the United States. Section 404 makes it unlawful to discharge dredged or fill material into waters of the United States if there is a practicable alternative that would be less damaging to aquatic resources or if significant degradation would occur to the nation's waters.

9.1.3 Safe Drinking Water Act (SDWA)

The Safe Drinking Water Act (SDWA) (42 U.S.C. Section 300f, et seq.) was established in 1974 to protect the quality of drinking water in the United States. The SDWA covers all waters actually or potentially designed for drinking use, whether from aboveground (surface) or underground sources. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers that implement its standards.

Under the SDWA, the County must demonstrate that the development and operation of a MSWLF at Ma'alo will not result in adverse effects to drinking water sources on the island of Kaua'i, and must monitor the continued protection of groundwater via a groundwater monitoring program.

9.2 STATE OF HAWAII

9.2.1 Hawai'i State Plan

The Hawai'i State Plan (Chapter 226, HRS) serves as a written guide for the future long-range development of the State. The Plan identifies goals, objectives, policies, and priorities for the State. The proposed new MSWLF and RRP at Ma'alo is consistent with Section 226-14, Objectives and Policies for Facility Systems, in General, which states:

(a) Planning for the State's facility systems in general shall be directed toward achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.

(b) To achieve the general facility systems objective, it shall be the policy of this State to:

(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.

(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.

(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.

(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.

The proposed project supports the safe disposal of MSW resulting from the use of goods, products, and materials that are no longer feasible to be further reused, recycled, or reclaimed, under existing conditions. The disposal of this refuse in an environmentally safe manner allows for greater focus on statewide systems that support social, economic, and physical objectives.

The proposed new MSWLF and RRP at Ma'alo are the key capital components of the County's ISWMP (R. W. Beck 2009), which describes the overall management system of waste collection, transport, recycling, and disposal for the island of Kaua'i. The ISWMP is designed to promote the prudent use of County land resources by accommodating changing public demands and priorities that call for increased recycling and waste reduction strategies as well as future efforts by the County to use proven technology-based alternatives to reduce dependency on landfilling.

The proposed action is also consistent with Section 226-15, Objectives and Policies for Facility Systems – Solid and Liquid Wastes, which states:

(a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed toward the achievement of the following objectives:

(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes....

(b) To achieve solid and liquid waste objectives, it shall be the policy of this State to: ...

(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.

(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.

The proposed project addresses the fundamental need for the disposal of municipal refuse. The proposed project will promote maintenance of basic public health and sanitation standards by providing a site that is specifically developed for the safe disposal of MSW generated on the island.

The proposed RRP is designed to reduce the landfilling of waste by supporting on-going efforts by the County to promote the reuse, recycling, and recovery of components of Kaua'i's municipal waste stream. The DPW will continue to seek and implement, where feasible, proven programs that reduce dependency on landfilling.

9.2.2 State Land Use Law and Important Agricultural Lands

Chapter 205, HRS, also known as the "State Land Use Law," contains statutes governing land use in the State of Hawai'i. Chapter 205 is intended to preserve and protect Hawai'i lands and to encourage uses to which the lands are best suited. All lands in Hawai'i are classified as Urban, Rural, Agricultural, or Conservation. The proposed MSWLF site and alternate RRP site at Ma'alo are within the state Agricultural District (see Figure 9-1) (all eight potential new-MSWLF sites identified are within the Agricultural District). The State Land Use Law contains the following definition of important agricultural lands (IAL) (HRS §205-42):

(a) As used in this part, unless the context otherwise requires, "important agricultural lands" means those lands, identified pursuant to this part, that: (1) Are capable of producing sustained high agricultural yields when treated and managed according to accepted farming methods and technology; (2) Contribute to the State's economic base and produce agricultural commodities for export or local consumption; or (3) Are needed to promote the expansion of agricultural activities and income for the future, even if currently not in production.

The County of Kaua'i's Department of Planning is preparing a draft *Kaua'i Important Agricultural Lands Study* to identify potential IAL designations pursuant to the County-specific directives of Act 183, Session Laws of Hawai'i 2005. The findings, requirements, or recommendations of this report, if finalized in time, will be incorporated into the DEIS.

9.2.3 Coastal Zone Management

Special controls on development in coastal areas are established to avoid permanent loss of valuable coastal resources and loss of potential management options that may otherwise protect and preserve Hawaii's coastal areas. SMA boundaries are established by the County of Kaua'i to delineate coastal zone areas subject to such controls. The State of Hawai'i designates a Coastal Zone Management (CZM) Program to manage the intent, purpose, and provisions of HRS §205A-2, as amended, and federal regulations (15 CFR §930.32) for the areas from the shoreline to the seaward limit of the State's jurisdiction and any other area that a lead agency may designate for the purpose of administering the CZM Program.

The proposed MSWLF site and alternate RRP site are located well mauka of the coastline, outside of the SMA.

The proposed project conforms to the CZM Program, Objective 1, Recreational Resources, which calls for the provision of adequate, accessible, and diverse recreational opportunities in the CZM area. The proposed facility is in conformance with Objective 1 because it is not located on the coastline or shoreline, and does not involve the use or exploitation of coastal resources. The site is not in a location that would lead to the development of new shoreline recreational opportunities or to the dedication of new shoreline areas with recreational value.

The proposed project conforms to CZM Program Objective 2, Historic Resources, which requires that new development protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources that are significant in Hawaiian and American history and culture. The proposed project achieves this objective by providing for a location subject to extensive prior agricultural land uses that does not negatively impact the historic resources of the coastline.

Further discussion concerning CZM Program Objectives will be provided in the project DEIS. The following Project Objectives will be the subject of further discussion:

- Scenic and open space resources
- Coastal ecosystems
- Economic uses
- Coastal hazards
- Managing development
- Public participation
- Beach protection
- Marine resources

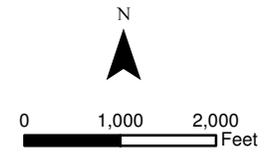
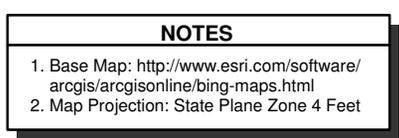
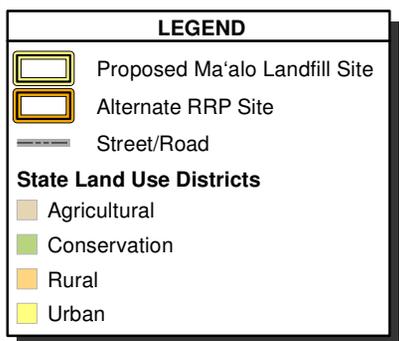
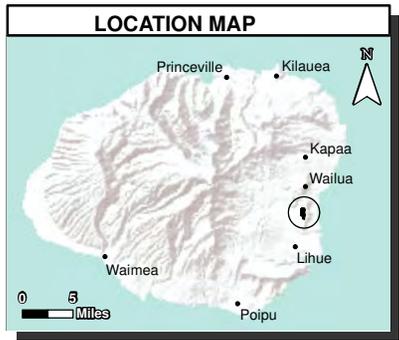
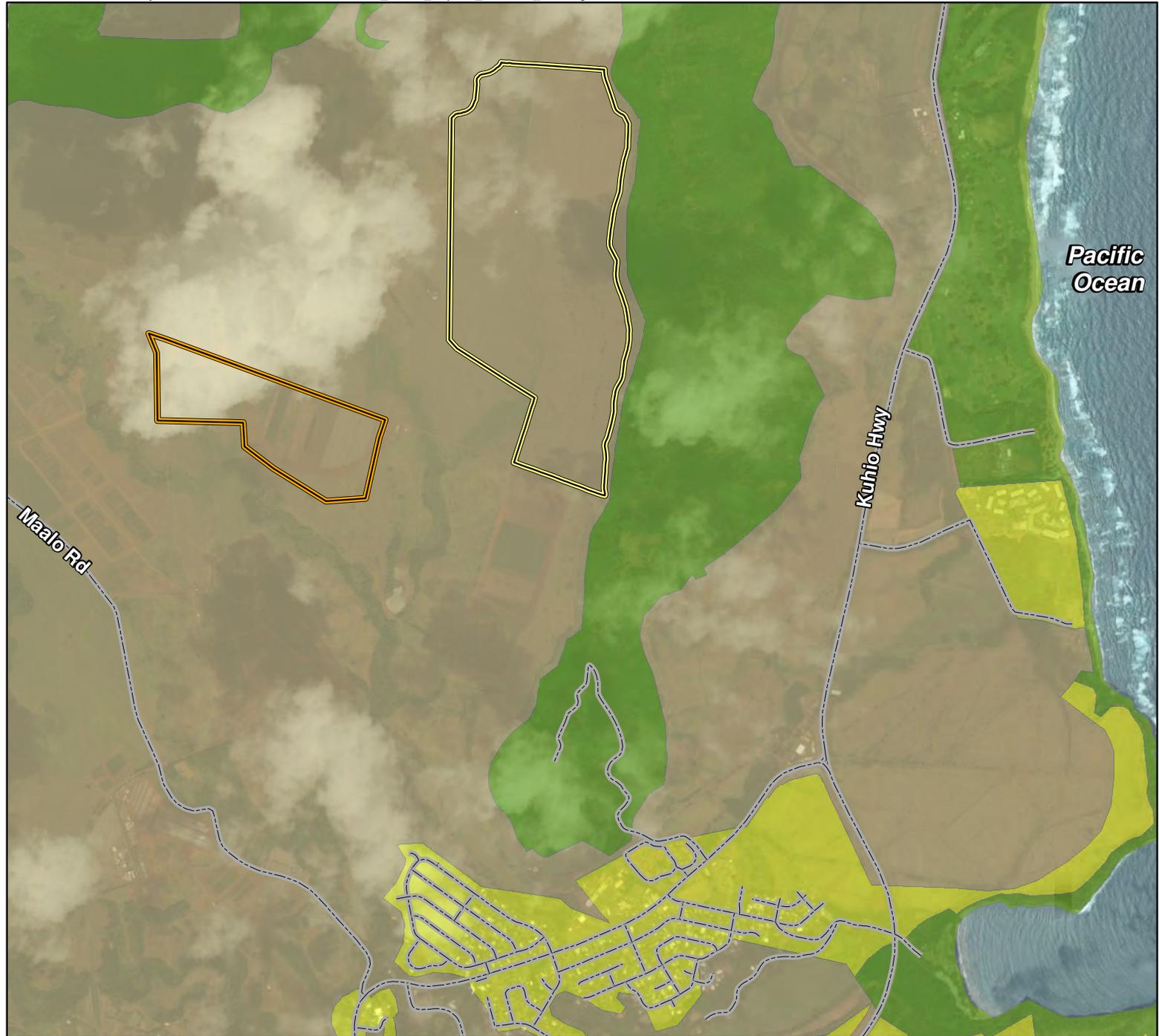


Figure 9-1
State Land Use Districts
in the Project Vicinity
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i

9.2.4 Water Pollution Control

The State of Hawai'i DOH is delegated by the EPA to administer the NPDES Permit program in Hawaii. The NPDES permit program is described in and administered through Chapter 55, HAR, *Water Pollution Control*.

The development of the MSWLF at Ma'alo will likely require two permits under the Clean Water Act, Section 402: (1) NPDES Form C, for discharges of stormwater associated with construction activity; and (2) NPDES Form B, for discharges of stormwater associated with industrial activities.

9.2.5 Solid Waste and Solid Waste Management Control

The state's management of solid waste is subject to the provisions of Chapter 342H, HRS, *Solid Waste Pollution*, and is regulated by Chapter 58, HAR, *Solid Waste Management Control*.

Under HAR §11-58.1-01:

The purpose of this chapter is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation, and transfer systems. Such standards are intended to:

- (1) Prevent pollution of the drinking water supply or waters of the State;*
- (2) Prevent air pollution;*
- (3) Prevent the spread of disease and the creation of nuisances;*
- (4) Protect the public health and safety;*
- (5) Conserve natural resources; and*
- (6) Preserve and enhance the beauty and quality of the environment.*

According to the regulations [HAR §11-58.1-04(a)]:

It shall be unlawful for any person to establish, modify, or operate any solid waste management facility or a part thereof or any extension or addition thereto without a permit issued in accordance with this chapter, Hawaii Revised Statutes, chapter 342H, and the integrated solid waste management plan for the State of Hawaii.

The exclusionary criteria used to delineate areas where it is best not to site a MSWLF are contained in HAR §11-58.1-13. The following criteria were used to determine if potential landfill sites could be included in the analysis for a new MSWLF site:

- Areas within 10,000 feet of airport runways
- 100-year floodplains and floodways
- Wetlands
- Fault areas
- Seismic impact zones
- Unstable areas
- Tsunami inundation areas

The proposed MSWLF site and alternate RRP site are located outside of these areas, and the proposed facilities will be designed and operated in accordance with the State's Solid Waste and Solid Waste Management Control provisions. The facilities, including their design, maintenance,

monitoring, closure and post-closure plans, will require review and approval by the SHWB prior to construction.

The DEIS will describe in detail the potential effects of the facilities, as well as potential mitigation measures.

9.3 COUNTY OF KAUA'I

9.3.1 Kaua'i County General Plan

Section 7 of the County of Kaua'i General Plan (County of Kaua'i 2012), Building Public Facilities and Services, identifies solid waste management as a public responsibility of the County of Kaua'i DPW. "General Policies" relevant to MSWLF siting include the following:

- (a) Using long-range integrated resource planning, the County shall manage an island-wide system of solid waste collection, reuse, recycling and disposal that (1) is environmentally sound and cost-effective; (2) increases diversion of waste from the island's landfill(s); and (3) provides for the timely and orderly expansion of solid waste facilities.*

The County has engaged in a 12-year effort to identify a feasible site for a new MSWLF. Included in the effort was the 2009 County of Kaua'i ISWMP (R. W. Beck 2009), which contributes to the decision-making framework for site selection:

The County shall incorporate entrepreneurial principles in managing solid waste, involve private businesses, and support market-oriented innovations and initiatives. Among other options, the County shall consider opportunities for utilizing the waste stream for energy generation.

The development of a RRP within the Ma'alo site addresses this item, which encourages use of "entrepreneurial principles" by the County to manage solid waste and involve the private sector in such efforts.

Section 7.8.5 of the General Plan, "Implementing Actions," also refers to the ISWMP:

The County government shall:

- (a) Prepare a long-range Solid Waste Integrated Management Plan, to be adopted by the County Council and updated every five years. The SWMP shall set policies to guide solid waste programs, facility planning, capital improvements, operations, user fees, and financing.*
- (b) Commit the necessary funding and staff resources to implement the County Integrated Solid Waste Management Plan.*
- (c) Increase the effectiveness of the County's solid waste system by maximizing the convenience of reuse and recycling centers for users.*
- (d) Establish a set of measurable goals to evaluate County efforts to divert solid waste from the island's landfill.*
- (e) Develop a proactive process for siting and designing sanitary landfills and other facilities that incorporates early and detailed consultation and negotiation among the utility, the County government, community stakeholders, and the general public.*

The County's response to the General Plan, Implementing Actions, as cited above, was the preparation of the updated ISWMP (R. W. Beck 2009). Section 11 of the 2009 plan proposes a four-stage site selection process as a facility siting strategy:

- (1) Establish a siting task force.
- (2) Identify excluded sites and develop county-specific siting criteria.
- (3) Define ranking criteria and rank available sites.
- (4) Select a proposed site.

The general principles that emphasize flexibility to resolve conflicts, disputes, and impasses are included in the strategy. The actions taken by the County to identify the Ma'alo site as the proposed new Kaua'i MSWLF site are in general accordance with the processes outlined in the ISWMP (R. W. Beck 2009).

9.3.2 Chapter 8, Kaua'i County Code, Comprehensive Zoning Ordinance

The stated purpose of Kaua'i's Comprehensive Zoning Ordinance is to provide regulations and standards for land development and the construction of buildings and other structures. Based on the findings and analysis of the General Plan, the zoning ordinance establishes several land districts and delineates the respective types of permitted uses and development that can take place in those districts.

The proposed MSWLF site and alternate RRP site are located in the Agriculture District (A). The proposed construction and operation of the new landfill and RRP may require a Use Permit from the County of Kaua'i, Department of Planning under Section 8.7.3, "Uses and Structures That Require a Use Permit." The provision likely to trigger this requirement is item "(11), Private and public utility facilities."

10.0 ALTERNATIVES TO THE PROPOSED PROJECT

10.1 INTRODUCTION

An alternatives analysis will be prepared for the project DEIS in accordance with the requirements of Chapter 343, HRS. The analysis will include a description of Kaua'i's MSW disposal requirements. The DEIS will describe current efforts of the County to increase recycling and reuse of items in the municipal waste stream and the benefit that is expected by diverting these items from landfill. The analysis of alternatives to the proposed project will also consider the following:

- The no action alternative
- The delayed action alternative
- Development of the RRP and the use of alternative refuse disposal and/or treatment technologies suitable for use in the County of Kaua'i
- Transshipment of waste off-island
- Alternative locations for the siting of a MSWLF in compliance with federal EPA standards and other applicable criteria to meet Kaua'i's refuse disposal requirements

The following subsections discuss the alternatives further.

10.2 NO ACTION ALTERNATIVE

Chapter 343, HRS, requires the consideration of the no action alternative to serve as a baseline against which other potential actions can be measured. The no action alternative would involve taking no further action to address Kaua'i's municipal refuse disposal needs through identifying and developing a new MSWLF site.

Once the existing Kekaha MSWLF reaches capacity, the no action alternative would result in a major public and environmental health, safety, and economic problem for the County, its residents and visitors, and the State of Hawai'i. Taking no action would also fail to address the objective of the County to provide a sanitary and secure means of (1) disposing of its municipal refuse; and (2) promoting the development of a RRP to encourage and accelerate reuse and recycling.

The no action alternative would avoid the expenditure of public funds for the development of the project and would avoid the potential for adverse environmental effects associated with the use of a new landfill and RRP site. However, the no action alternative would also result in an adverse island-wide impact to all the communities of Kaua'i due to loss of a location for the safe and sanitary disposal of MSW.

While it will be evaluated in the DEIS, the no action alternative does not meet the program objectives.

10.3 DELAYED ACTION ALTERNATIVE

The County's only MSWLF facility, the Kekaha Landfill, will reach capacity and be closed in the coming years. With the limited number of years remaining in the site life at the Kekaha MSWLF and the additional years that will be required to develop a new MSWLF once a site is selected and the EIS is accepted, little time remains to select and develop a new MSWLF site. The County cannot simultaneously further delay action while meeting its mandate to provide for the safe and secure disposal of MSW. The delayed action alternative therefore has similar effects to no action, and does not meet the program objectives.

10.4 RRP AND OTHER ALTERNATIVE TECHNOLOGIES

Technological approaches that promise a reduction in the need for landfilling will be examined in the project DEIS. Many of these potential alternate technologies to a MSWLF will also be considered for possible implementation at the RRP. These approaches range from minor diversion efforts to substantial reduction of waste quantities. The technologies examined will include, but are not limited to: anaerobic digestion, hydrolysis, gasification, plasma arc incineration, and other methods that are under development to reduce or eliminate the MSW stream. The County's ongoing efforts to investigate and implement appropriate technological approaches as a means of reducing the amount of waste to be disposed of at a landfill will also be discussed.

The use of recycling as a means of reducing waste requiring disposal will also be examined. This will include examining the question of whether recycling, reuse, and reduction can effectively eliminate the need for a MSWLF.

The County believes there is promise in the potential application of new technology-based alternatives as part of its refuse management system. The application of new technology, however, is not anticipated to replace the immediate need for a landfill when the airspace in the Kekaha MSWLF is exhausted.

The technological approaches to be examined for the County of Kaua'i will involve consideration of the following factors:

- The use of public lands or funds will require a thorough evaluation of technical approach and feasibility. Any technology selected will need to meet the test of proven performance and feasibility before being recommended.
- An evaluation of environmental issues associated with construction, operation, and decommissioning (closing down and removal) of the technology will be required. This includes the environmental issues, impacts, and mitigation measures necessary to ensure against adverse effects.
- Selection of a suitable location for the siting of any recommended facilities.

In addition, with the adoption of any new technology a sufficient startup period will be required to modify, adapt, or otherwise adjust operational procedures to ensure a long term stability of service. Failure to maintain the process of refuse treatment would result in the need for disposal of unprocessed refuse, such as at a landfill.

While several technological alternatives to landfilling of MSW may be recommended, and some of these may be implemented at the RRP, most or all technological alternatives result in waste residuals or by-products, and may not meet the overall project objectives of providing for the proper disposal of all forms of MSW that cannot feasibly be further reused, recycled, or otherwise recovered.

10.5 TRANSSHIPMENT OF WASTE OFF-ISLAND

The DEIS will also examine the waste transshipment alternative. This alternative involves the handling, processing, loading, and shipping of Kaua'i's MSW to another landfill site or refuse processing facility located off-island, such as the Honolulu Program on Waste Energy Recovery (H-POWER). The factors involved in examining this alternative will include the following:

- Identification of a suitable landfill or refuse processing facility and owner/operator willing to contract on a long-term basis to accept Kaua'i's MSW. Issues associated with identifying a potential site include: (1) the identification of the specific forms of MSW that may be either inappropriate or unacceptable for transshipment; (2) identifying how inappropriate or unacceptable waste will be handled or disposed of; and (3) procedures for a contingency

plan to address the inability to conduct transshipment of refuse and debris due to a disaster event, either natural such as from a hurricane, tsunami, or other catastrophic event, or labor related, such as from a shipping strike.

- Provision of a suitable location for the staging, handling, and processing of municipal refuse including MSW, recycling residue, and unacceptable waste. Environmental issues that will be examined will include potential nuisance impacts associated with odor and windblown litter, vectors such as rats, mice, and flies, and the management of storm water runoff.
- Identification of the range of costs associated with transshipment including: handling, processing, and shipping costs; potential environmental costs for the facility receiving the waste; and the consequences associated with the loss of revenues generated from landfill tip fees. Tipping fees currently help to support the cost of operating the County's refuse management system.
- Discussion of the environmental management and social issues arising from the transshipment of refuse off-island: (1) Kaua'i is a geographically isolated island community. Transshipment of refuse will increase Kaua'i's dependency on resources and facilities that may not be under its control, e.g., potential shipping strikes, long-term increases in disposal fees, unstable fuel and shipping costs, and the potential for new environmental compliance measures; (2) the facility receiving Kaua'i's refuse would assume the long-term environmental management issues and problems associated with accepting the refuse; and (3) transshipment would preserve more of Kaua'i's finite land resources for future generations.

While it will be evaluated in the DEIS, transshipment may not meet the program objective; e.g., the off-island receiving facility may not accept a portion of Kaua'i's waste stream, and transshipment not be a practicable complete alternative to a landfill due to costs, uncertainties, or potential reliability issues.

10.6 USE OF ALTERNATIVE SITES TO MEET KAUA'I'S REFUSE DISPOSAL REQUIREMENTS

All municipalities in the United States either have a landfill or have access to one. Such a facility is especially important to an island that wishes to prevent fugitive dumping and the associated environmental impacts. Therefore, the principal alternative for the ultimate handling and disposal of that portion of the MSW that is not recycled, reduced, or reused involves the selection of one of several alternative potential sites for the development of a new MSWLF.

The eight alternative sites evaluated by the County include Kalepa, Kekaha Mauka, Kīpū, Kōloa, Kumukumu, Ma'alo (the preferred-alternative site), Pu'u O Papai, and Umi. According to the 2012 Siting Study, although none of these sites is perfect, all eight are technically and legally feasible sites for a landfill, and "any perceived deficiency in a particular site can potentially be mitigated" (AECOM 2012).

The following is a summary of a few of the major points of the analysis that identifies the Ma'alo site as the preferred alternative:

- The Ma'alo site is the longest-term solution for waste disposal, with an estimated site life of approximately 264 years. This site will provide a near-permanent potential solution that can be extended further with the successful operation of the RRP.
- Ma'alo is the only alternative with a potentially willing landowner. The value of this factor cannot be overstressed given the past 12 years of County efforts to site a new landfill.
- The Ma'alo site ranks the highest in the application of the community-based criteria initially developed by the MACLS (RMTC 2009), and updated and reevaluated in the 2012 Siting Study (AECOM 2012).

- Although it has an anticipated high initial cost of acquisition and development, Ma'alo is the most economical alternative over the life of the site, based on economy of scale and the potential for cost amortization over its estimated 264-year lifespan.
- The central location of Ma'alo relative to the waste centroid is anticipated to save costs and fuels, decrease waste-related traffic, and have positive sustainability effects for the long term compared to sites farther afield.

The last point describing the location of Ma'alo to Kaua'i's *waste centroid* is based on the review of data in the County's ISWMP (R. W. Beck 2009). The *waste centroid* is estimated to lie between the Līhu'e/Kapa'a and Kōloa/Po'ipū areas. Ma'alo is also located near the border between the two most populous districts on Kauai: Kawaihau and Līhu'e (Section 7.2). In general, the closer the landfill and RRP site(s) are to the centroid, the shorter will be the average distance of materials shipment (and re-shipment). Siting the landfill and RRP closer to the island's waste generation centroid will have positive impacts on the following:

- Fuel consumption
- Carbon footprint
- Waste transportation-related costs
- Waste transportation-related traffic

If the new landfill is located close to the centroid, then it is also conceivable that the County could realize further cost savings at the Kapa'a or Līhu'e transfer stations, through reduced use due to the nearby presence of Ma'alo (this effect was not quantified in the report) (AECOM 2012.)

Other issues concerning the potential for impacts associated with the use of Ma'alo include (1) the development (transportation and roadway) requirements for access ingress and egress from the site, and (2) the overall extent of potential environmental effects and mitigative measures that will be required, all of which will be further examined in the project DEIS.

The following is a summary of the seven alternative sites (not preferred) including a summary of the pros and cons of each. Further detailed discussion of the evaluation of all alternative sites including the preferred site at Ma'alo will be provided in the project DEIS.

Figure 10-1 shows the location of the other seven alternative sites on an island-wide map. Figure 10-2 through Figure 10-8 provide tax map key information and an overview of the major pros and cons for each of the seven sites.

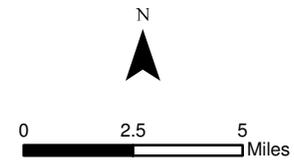
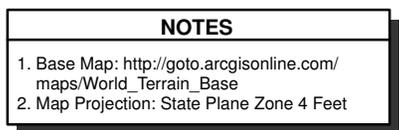
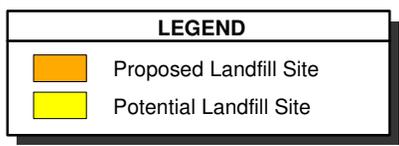
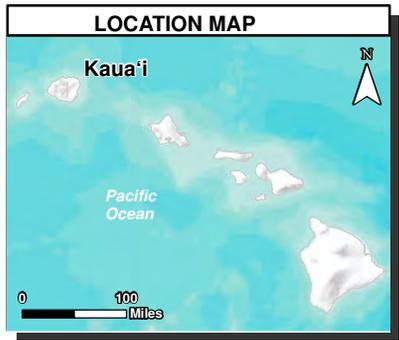
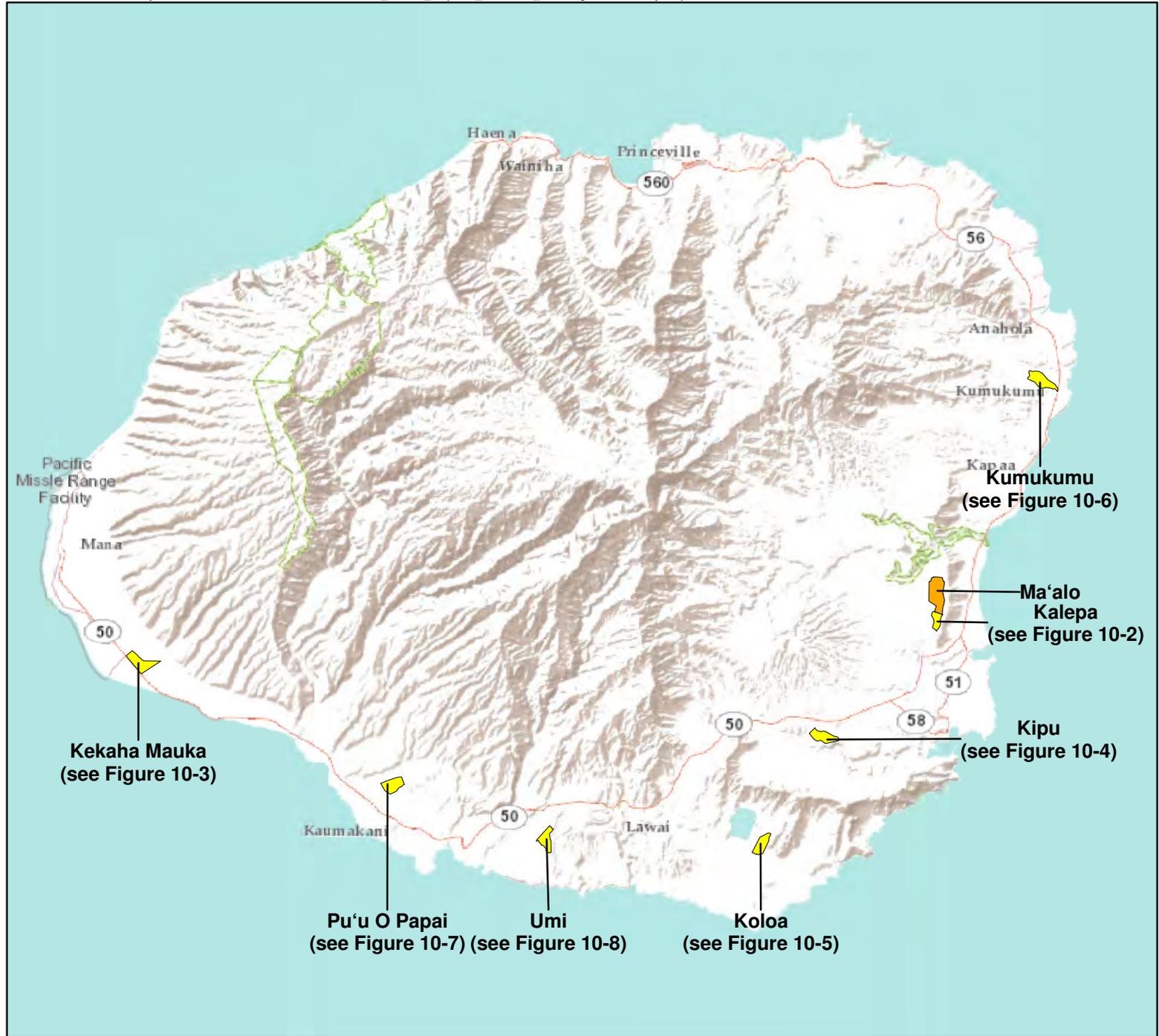
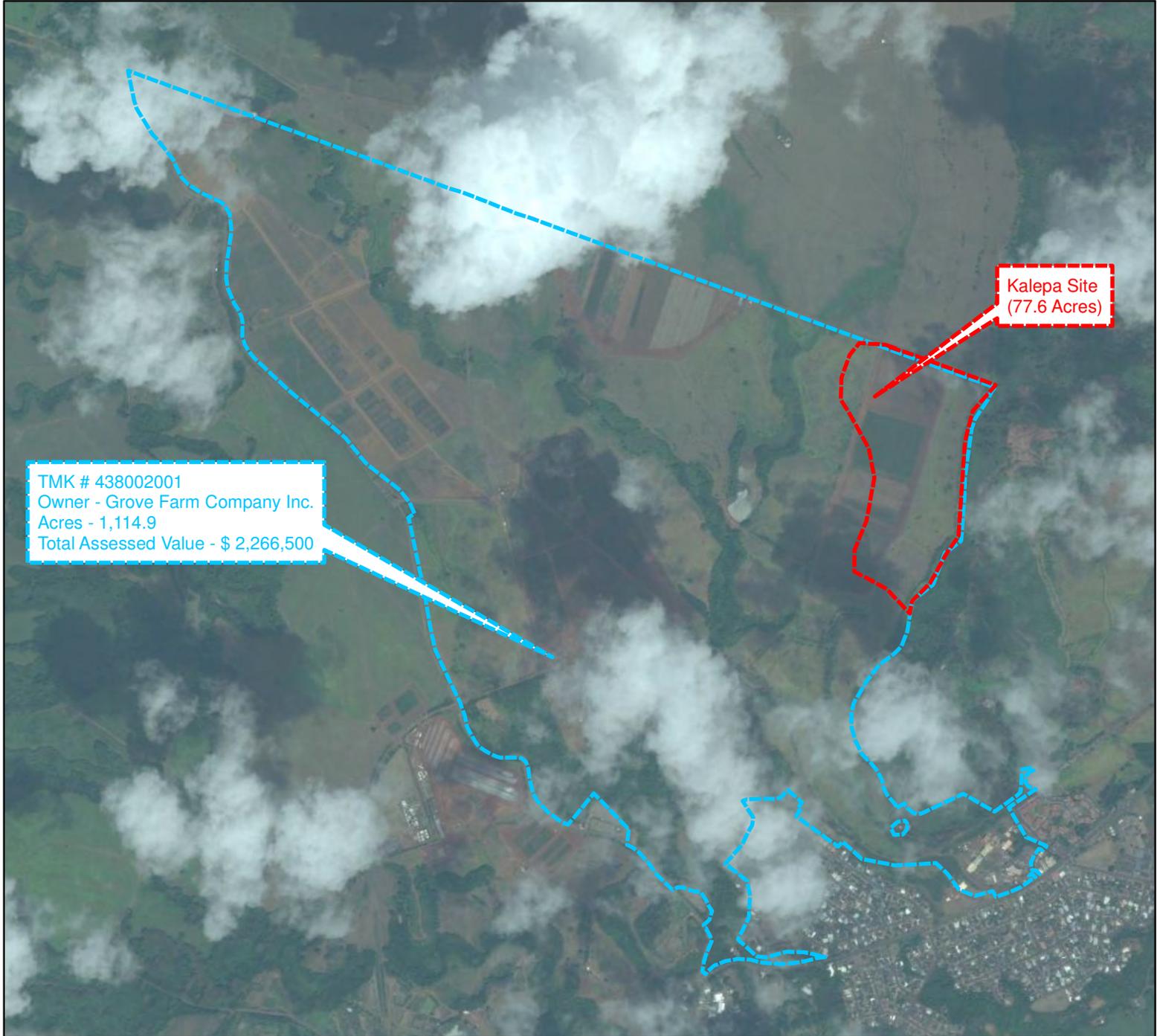
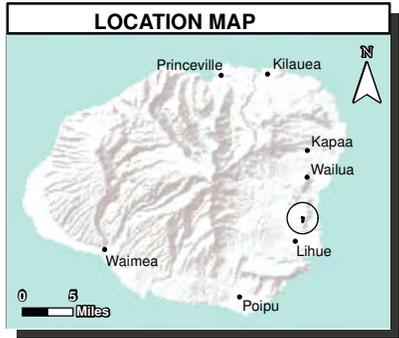


Figure 10-1
Key Map for New Landfill Site
Alternatives
EA/EISPN
New Kauai Landfill and RRP
Ma'alo, Kauai, Hawaii



TMK # 438002001
 Owner - Grove Farm Company Inc.
 Acres - 1,114.9
 Total Assessed Value - \$ 2,266,500

Kalepa Site
 (77.6 Acres)



NOTES

1. Major Pros and Cons:

Pros	Cons
Near island's waste centroid, providing cost savings and positive sustainability effects	Unwilling private landowner
	Shortest site life of all sites under consideration
	Planks last on the CCE
	Most expensive annual and initial costs
	Active agricultural land use

2. Base Map: <http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>
 3. Map Projection: State Plane Zone 4 Feet

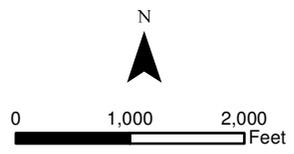
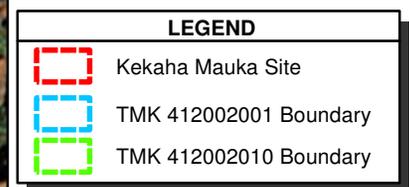
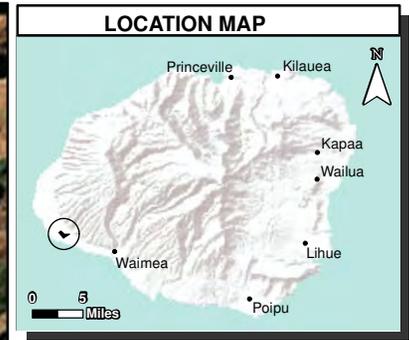
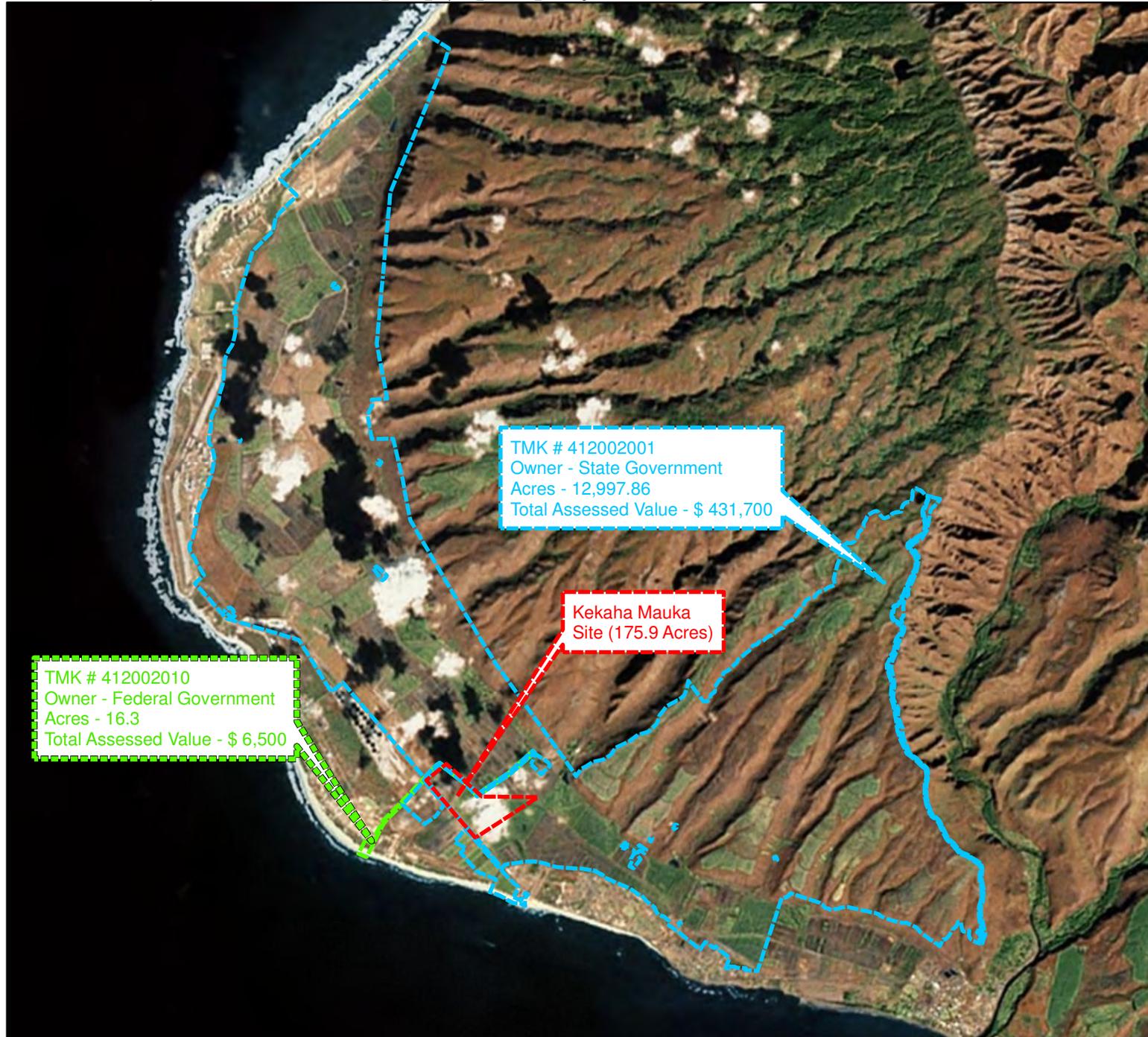


Figure 10-2
 Kalepa Site
 Tax Map Key Information
 and Major Pros and Cons
 EA/EISPN
 New Kaua'i Landfill and RRP
 Ma'alo, Kaua'i, Hawaii'i



NOTES

1. Major Pros and Cons:

Pros	Cons
Ranks well on the CCE	Unwilling public landowner (State of Hawaii)
Lowest initial cost	County cannot condemn State-owned property; requires willing landowner
Located near existing Kekaha landfill which has some in-place infrastructure	Distant from island's waste centroid
Relatively low nuisance factor due to distance from population	Second most expensive annual cost
Located below (makai of) the UIC line	Active agricultural use
Low rainfall	Local community has already hosted the existing Kekaha landfill
Located near existing roadway	

2. Base Map: <http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>
 3. Map Projection: State Plane Zone 4 Feet

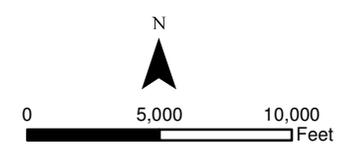


Figure 10-3
 Kekaha Mauka Site
 Tax Map Key Information
 and Major Pros and Cons
 EA/EISPN
 New Kaua'i Landfill and RRP
 Ma'alou, Kaua'i, Hawaii

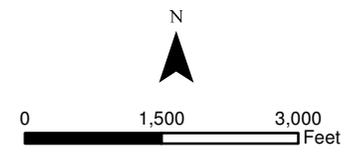
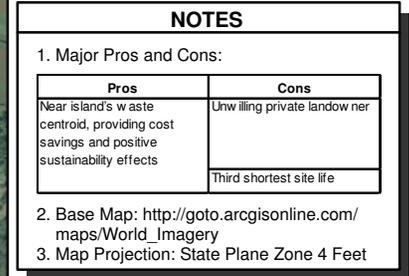
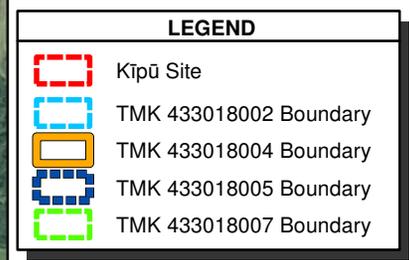
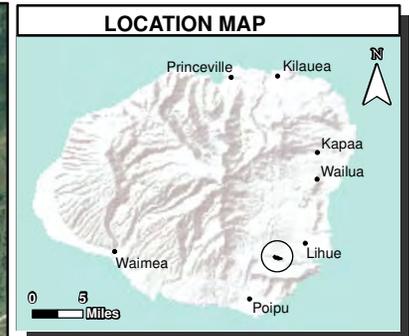
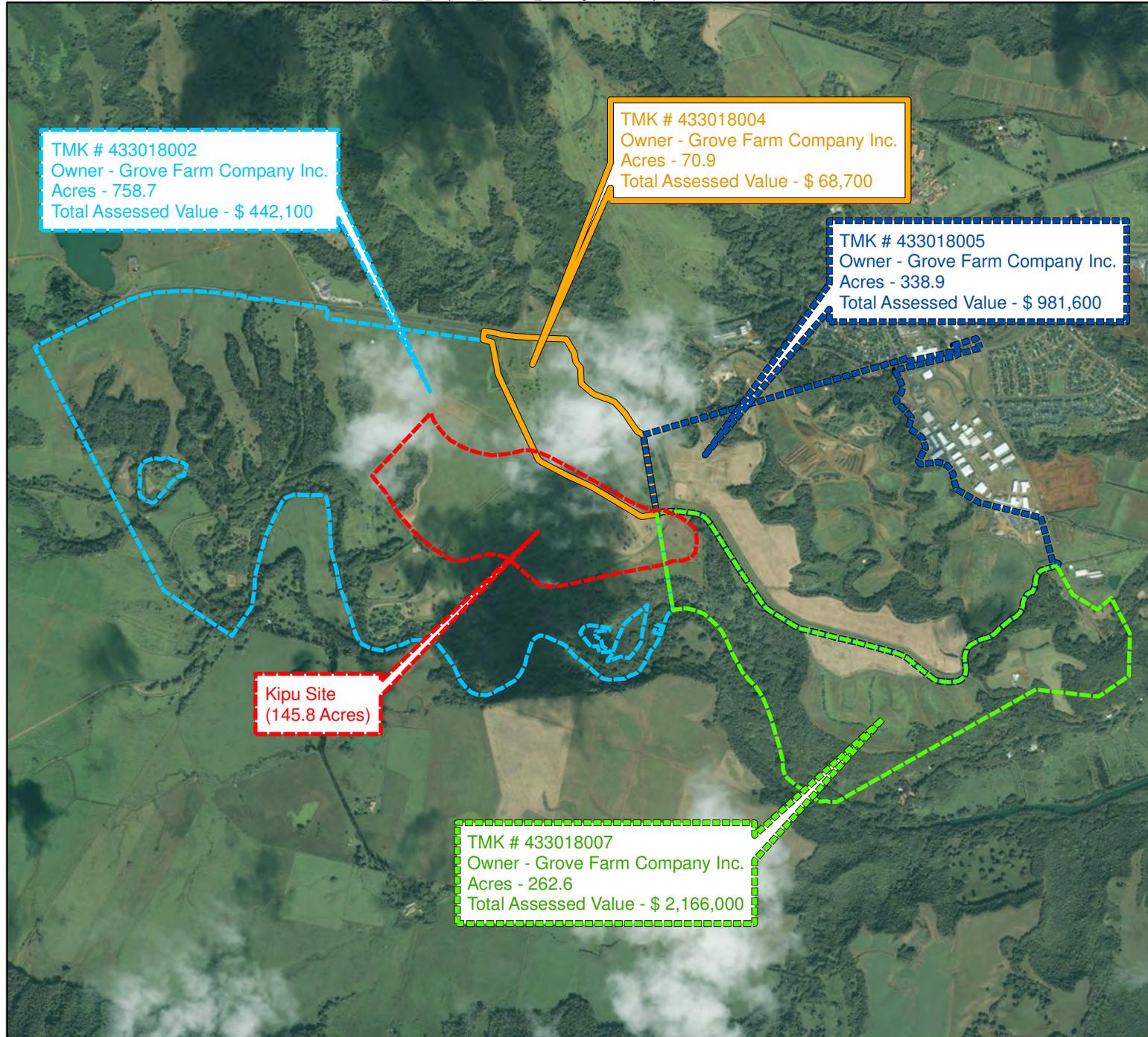
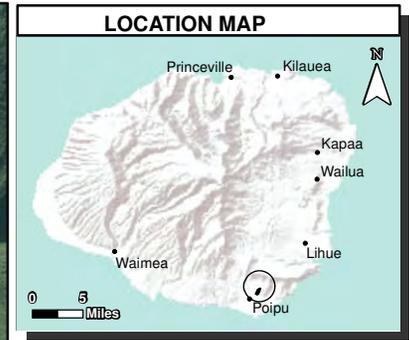
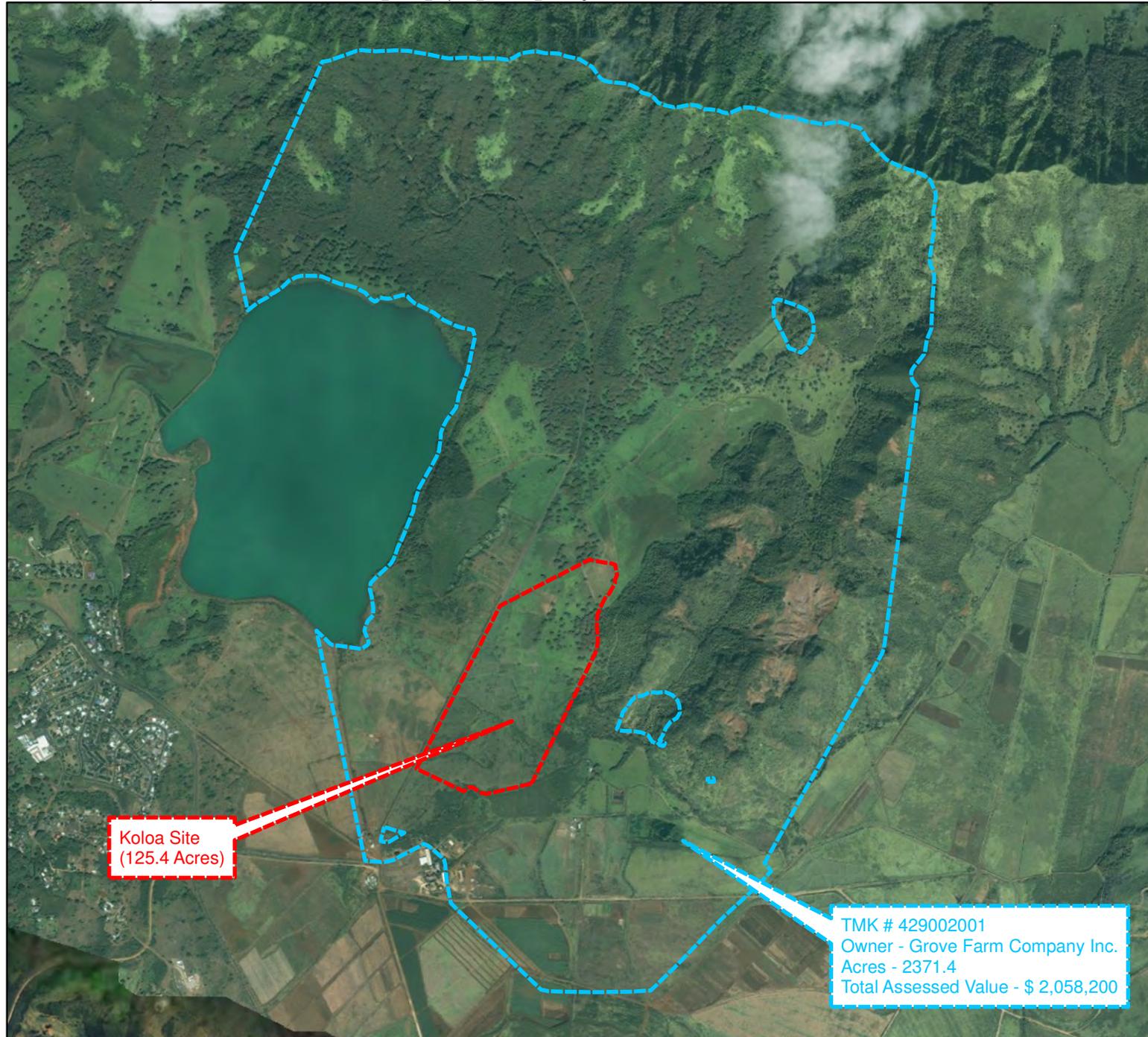


Figure 10-4
Kīpū Site
Tax Map Key Information
and Major Pros and Cons
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i



NOTES

1. Major Pros and Cons:

Pros	Cons
Located near existing roadway	Unwilling private landowner
Low initial cost	Groundwater: The County DOW has stated that groundwater supply wells in the area are productive, and that they may want to advance additional wells in the future

2. Base Map: http://goto.arcgisonline.com/maps/World_Imagery
 3. Map Projection: State Plane Zone 4 Feet

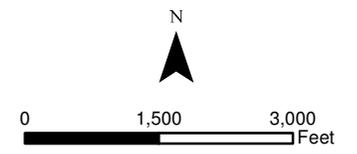
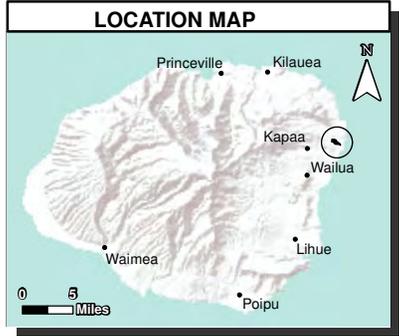
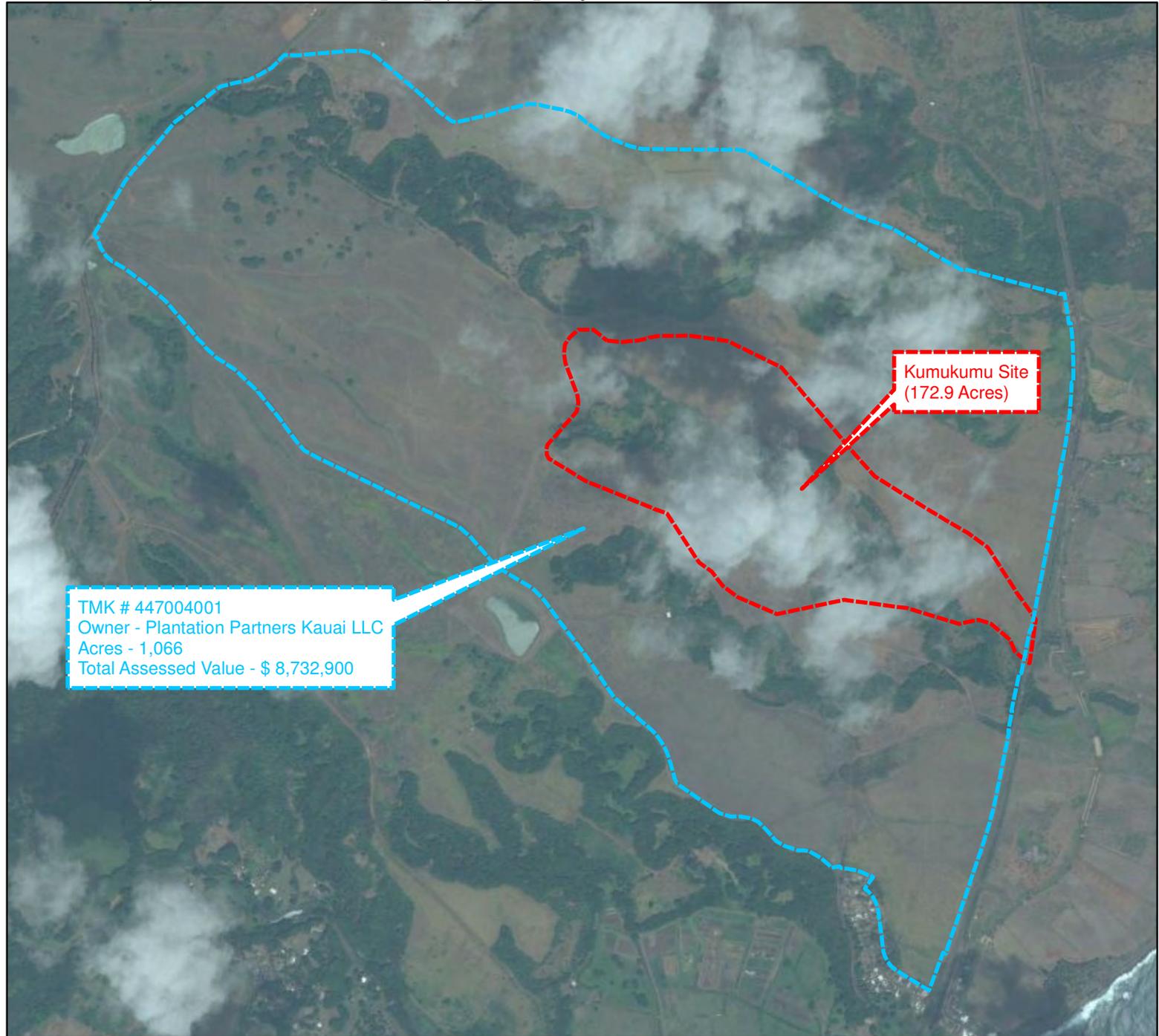


Figure 10-5
 Kōloa Site
 Tax Map Key Information
 and Major Pros and Cons
 EA/EISPN
 New Kaua'i Landfill and RRP
 Ma'alo, Kaua'i, Hawai'i



NOTES

1. Major Pros and Cons:

Pros	Cons
Second longest site life	Unwilling private landowner
Second least annual cost	Possible wetlands features
Near island's waste centroid, providing cost savings and positive sustainability effects	Ranked somewhat low on CCE
Disruption of current site activities relatively minor compared to other sites	
Located near existing roadway	

2. Base Map: <http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>

3. Map Projection: State Plane Zone 4 Feet

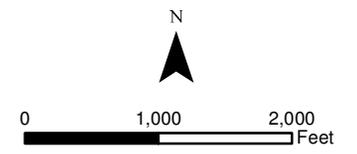
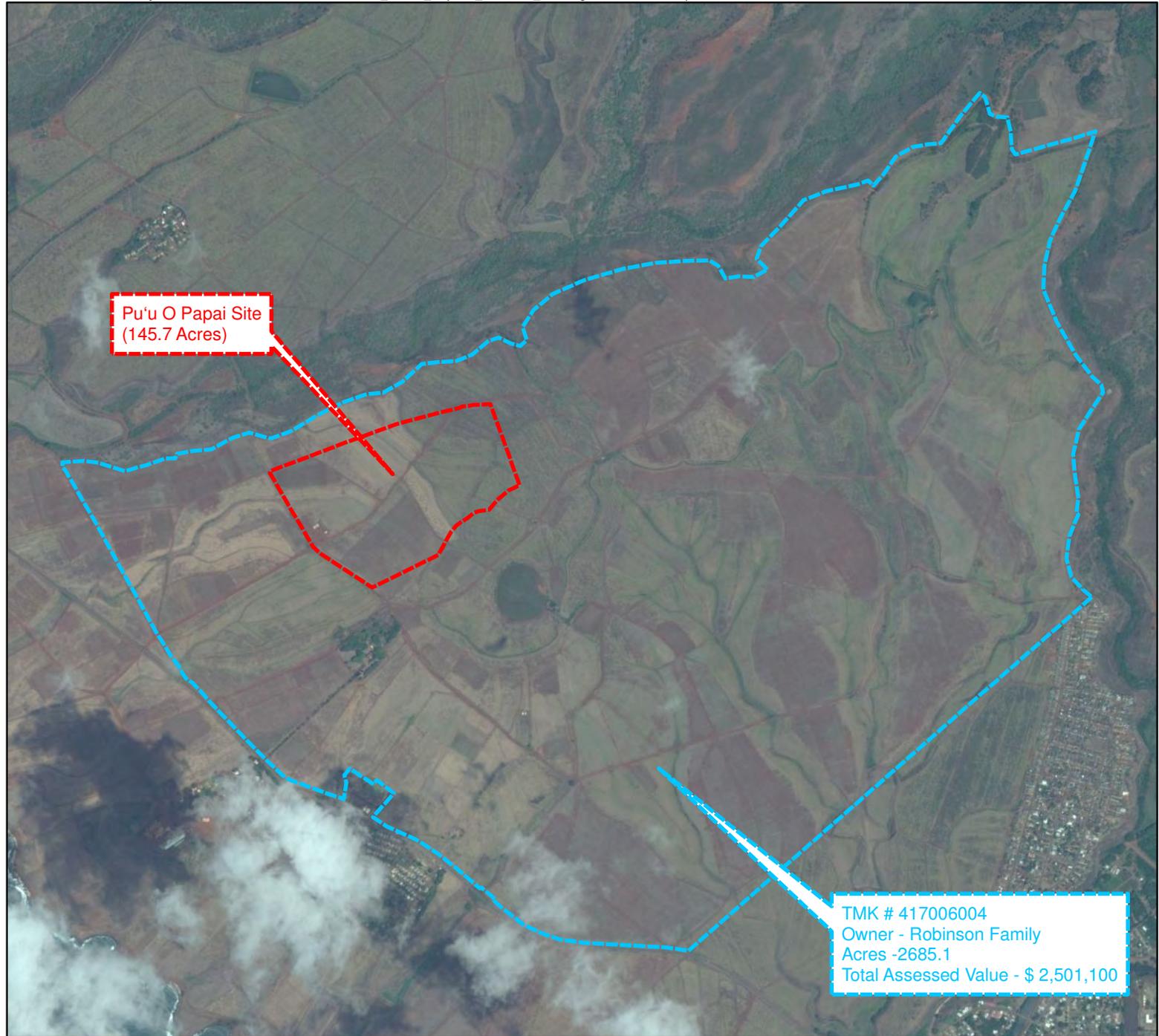
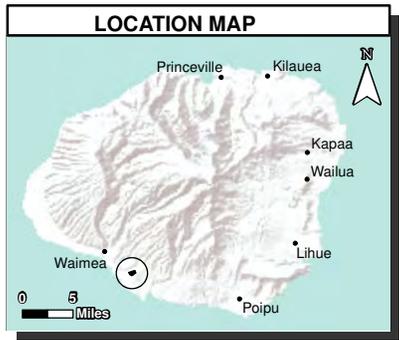


Figure 10-6
Kumukumu Site
Tax Map Key Information
and Major Pros and Cons
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i



Pu'u O Papai Site
(145.7 Acres)

TMK # 417006004
Owner - Robinson Family
Acres - 2685.1
Total Assessed Value - \$ 2,501,100



NOTES

1. Major Pros and Cons:

Pros	Cons
Third longest site life	Unwilling private landowner
Third lease annual cost	Active agricultural use
Low rainfall	Distant from island's waste centroid

2. Base Map: <http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>
 3. Map Projection: State Plane Zone 4 Feet

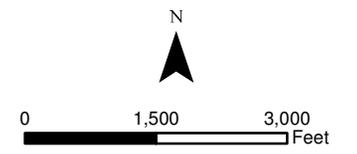
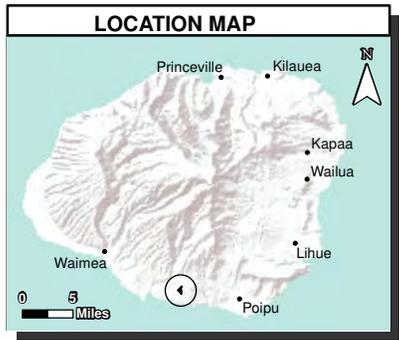
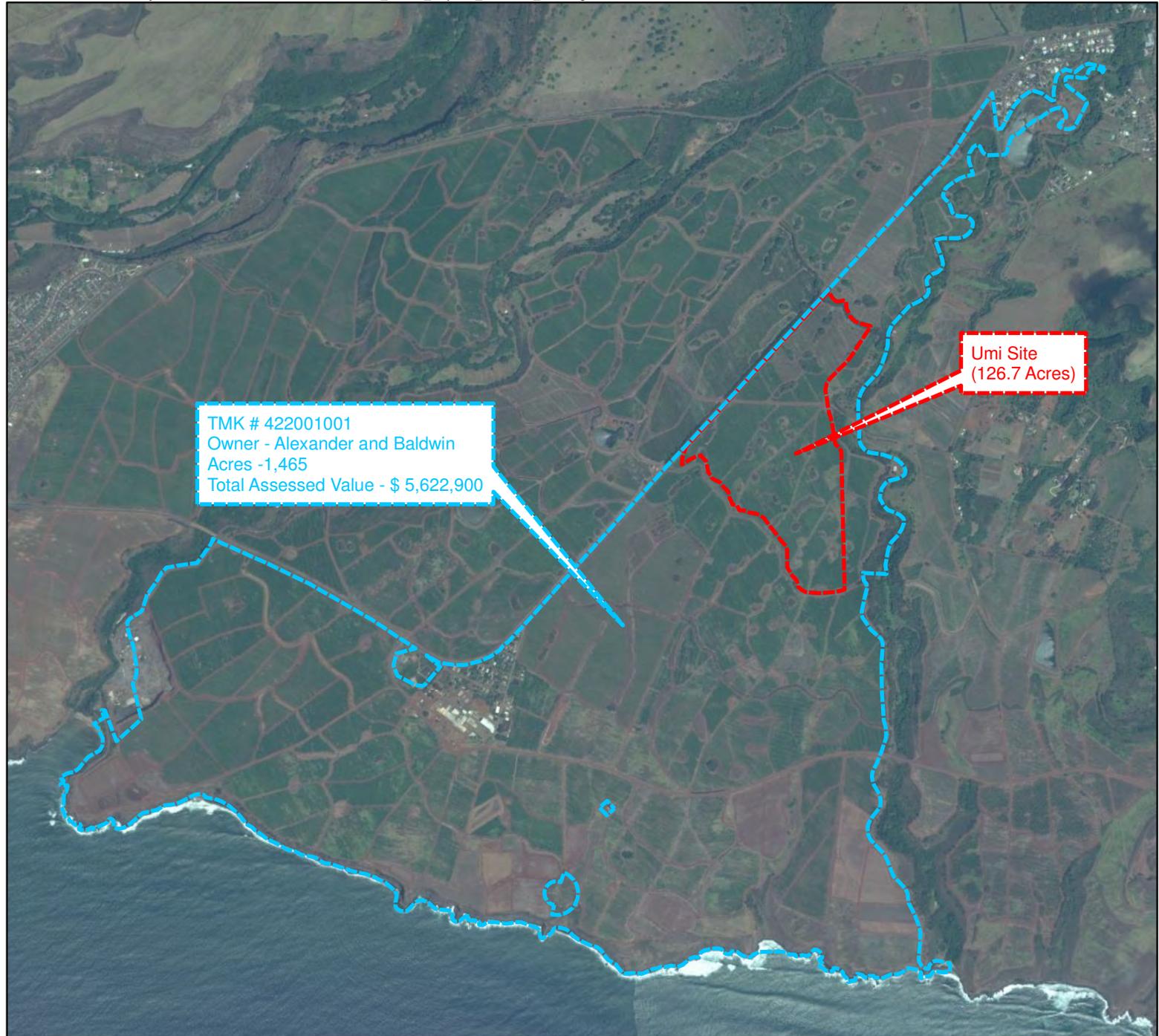


Figure 10-7
Pu'u O Papai Site
Tax Map Key Information
and Major Pros and Cons
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i



NOTES

1. Major Pros and Cons:

Pros	Cons
Ranks second on the CCE	Unwilling private landowner
Located below (makai of) the UIC line	Second shortest site life
Low rainfall	High annual and initial cost
	Disruption of current agricultural uses relatively significant compared to other sites
	Distant from island's waste centroid

2. Base Map: <http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>

3. Map Projection: State Plane Zone 4 Feet

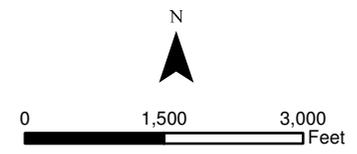


Figure 10-8
Umi Site
Tax Map Key Information
and Major Pros and Cons
EA/EISPN
New Kaua'i Landfill and RRP
Ma'alo, Kaua'i, Hawai'i

11.0 EIS COMMUNITY SCOPING

11.1 INTRODUCTION

A series of four community meetings were held in May 2012 to notify and initiate consultation with the communities of Kaua'i for the preparation of a Chapter 343, HRS, Environmental Impact Statement (EIS) for a new MSWLF and RRP. The meetings were held to accomplish the following:

- Solicit public input to help identify environmental and cultural issues to be considered and addressed in the upcoming EIS.
- Inform the public regarding ongoing activities and the upcoming EIS process.

The four community meetings were held on the following dates and locations:

- Tuesday, May 22, 2012, 6:00–8:00 pm, King Kaumuali'i Elementary School, Hanamā'ulu
- Wednesday, May 23, 2012, 6:00–8:00 pm, Kekaha Neighborhood Center, Kekaha
- Tuesday, May 29, 2012, 6:00–8:00 pm, Kīlauea Elementary School, Kīlauea
- Wednesday, May 30, 2012, 6:00–8:00 pm, Kōloa Courthouse/Neighborhood Center, Kōloa

Table 11-1 provides a summary of the effort by the County of Kaua'i to notify the public in advance of the meetings using multiple media sources, during the preceding month. The Attachments to this FEA/EISPN present the printed documents used for the public notification, the PowerPoint presentation, the handout provided to the public at the meetings, and the sign-in sheets for each meeting.

Table 11-1: Public Notification of Community Meetings

Item	Description
First News Release	Announced purpose, time and date of meetings. News release was issued by the County approximately 2 weeks prior to the start of the first meeting on May 22, 2012.
KONG Radio	Four (4) radio announcements per day were made for six (6) days (24 total announcements). The announcements ran from May 11 to 13 and from May 19 to 21, 2012.
KKCR Radio	Four (4) radio announcements per day were made for seven (7) days (28 total announcements). The announcements ran from May 15 to 21, 2012.
Meeting Notification Flyer	A flyer announcing the meetings were disseminated with the assistance of the Mayor's Public Information Office. The flyer was distributed to community and trade associations and incorporated into the Chamber of Commerce newsletter. The Hanamā'ulu Community organization also requested 500 copies for their delivery door-to-door. The flyer was completed on May 7th, and distributed after that date.
Meeting Notices	The County of Kaua'i posted a Notice of Public Meetings at its County buildings. The notices were posted on May 14, 2012.
<i>The Garden Island</i> (Legal Section)	A 2-column by 7-inch meeting advertisement was published for six (6) days on May 11, 13, 14, 17, 18, and 20, 2012.
<i>Mid-Week Kaua'i</i>	The meeting advertisement was published on May 14, 2012.

11.2 MEETING PROCESS

The agenda for all meetings included (1) Introduction and Meeting Overview; (2) Presentation; and (3) Public Comments. All meetings were moderated by Resolutions Hawai'i, who introduced members of the County Administration and the consultants AECOM and R. M. Towill Corporation. Mayor Bernard P. Carvalho, Jr. welcomed the audience, thanking all for their patience and attendance at the first (May 22) meeting at the King Kaumuali'i Elementary School, the meeting location nearest the Ma'alo site.

Future opportunities for public comment will be made available following publication of this FEA/EISPN document, and following publication of the forthcoming DEIS.

The facilitator followed the same format for all meetings. The meeting opened with a review of the agenda and purpose for the meeting. This was followed by an opportunity for the public to briefly present any issues that needed to be addressed in the EIS process, prior to the consultant's presentation (no comments were offered at this stage during the meetings). Next, a PowerPoint presentation by the consultants described the history of Kaua'i's landfill siting efforts, the current status and future plans for the new landfill project, including future opportunities for community input. The facilitator prepared a meeting summary of the major concerns raised by the community for use by the consultants in preparing the EIS.

The public was also informed of the County's website for the new landfill and RRP project (www.kauai.gov/newlandfillsite/), where announcements and documents will be made available to the public during the EIS process. The public notification and meeting presentation and handout are reproduced in Appendix B.

11.3 PUBLIC COMMENTS RECEIVED AND PRELIMINARY RESPONSE TO COMMENTS

The public comments received were organized into eight categories based on predominant subject:

1. Landfill Design and Operations (Section 11.3.1)
2. Resource Recovery Park (RRP) Design and Operations (Section 11.3.2)
3. Roadways and Traffic (Section 11.3.3)
4. Environment (Section 11.3.4)
5. Reuse and Recycling (Section 11.3.5)
6. Socioeconomic and Cultural Impacts (Section 11.3.6)
7. EIS Process (Section 11.3.7)
8. Other Comments (Section 11.3.8)

Preliminary responses to the comments were prepared according to the categories and are described below. See also Appendix C, Public Comments, May–July 2012, for the record of comments at each meeting location.

11.3.1 Landfill Design and Operations

Landfill Location (siting study related)

- I want to see these studies show that this landfill is in the smartest place on the island for it and I want the smartest people assuring me that there will not be any adverse impacts. (Mtg. 1)
- Maps showing the complete project and maps for all alternative sites need to be included. (Mtg. 3)
- Documents need to consider that this might not be the right site. (Mtg. 1)
- Best site in my opinion is to go back to Kekaha. (Mtg. 1)
- Is Ma'alo going to be the site and nothing we say will change that? (Mtg. 1)
- Alternative sites need to be evaluated. (Mtg. 4)
- Mitigation and alternatives to the proposed project and location of MRF need to be looked at. (Mtg. 4)

- The Kapaia Foundation are unanimously opposed to the Ma'alo Landfill location mauka of Kalepa Ridge. (Written Comments 3)
- I propose using the land from Hanama'ulu Bay as the current Transfer station to the Kapule Hwy. Or the land N of Hanamaulu Bay along that Ridge. (Written Comments 4)
- I think a much better site for landfill is in the Puhī/Kīpū area – just south and inland from the Humane Society. This is away from neighborhoods & freshwater source. (Written Comments 5)
- I am adamantly opposed to the New Kaua'i Landfill proposed site called Ma'alo located behind Kalepa Ridge (mauka). (Written Comments 4)

Response:

The 2012 Siting Study (AECOM 2012) culminates the County's efforts over the last 11 years to identify the preferred site for the proposed new landfill. The Siting Study looked at recent data, and concluded that all eight previously identified sites were viable for use as the new landfill and RRP. All sites had pros and cons, but for several reasons, detailed in the Siting Study, Ma'alo was identified as the proposed landfill and RRP site, which will be the preferred alternative evaluated in the EIS.

The 2012 Siting Study is available to the public on the County's New Landfill website (www.kauai.gov/newlandfillsite/).

Waste-to-Energy Technologies

- Alternative sites need to be evaluated. (Mtg. 4)
- An incineration alternative should be looked at. (Mtg. 1)
- There should be discussion as to whether the site can accommodate a facility like H-POWER (Honolulu Program of Waste Energy Recovery; a waste to energy incinerator on Oahu). (Mtg. 3)
- What are the plans for the methane gas – will you collect and sell – these need to be addressed. (Mtg. 1)
- How will the methane be recovered – this needs to be discussed. Will it be considered a resource? (Mtg. 3)
- Ways to minimize the methane production need to be discussed, it would be best if we could design a landfill with no or minimal methane production. (Mtg. 3)
- The EIS should look at state of the art development for this site (Ma'alo). (Mtg. 2)
- Are their plans for capturing methane for making energy? (Written Comments 2)

Response:

The RRP FS, which is currently being conducted, evaluates (among other things) the feasibility of various waste-to-energy technologies that the County could pursue. The Draft RRP FS will be published to the County's New Landfill website (www.kauai.gov/newlandfillsite/), as will public notifications for a subsequent series of public meetings to present the findings and recommendations to the public and solicit public feedback. While these meetings are not strictly a part of the EIS process, the results will be incorporated into the overall project and in the selection of processes and technologies to be covered in the EIS. The Final RRP FS will be summarized in the DEIS, which will include further details of the proposed RRP.

Tipping Fees and Zero Waste

- Tipping fees aimed at promoting recycling should be addressed. The County should continue its action and support for zero waste. (Mtg. 3)
- Move toward zero waste management. (Written Comments 1)

Response:

The County has ongoing plans and policies in general support of the County's zero waste resolution adopted by the Kaua'i County Council in October 2011, and will continue its support for the initiative. Tipping fees at the new landfill will be established at a future date.

Overall Costs

- Documents should clearly discuss costs. (Mtg. 1)

Response:

The 2012 Siting Study (AECOM 2012) includes a cost comparison between the alternative MSWLF sites; the Siting Study is available to the public on the County's New Landfill website (www.kauai.gov/newlandfillsite/). Costs associated with the landfill and RRP will continue to be evaluated during the FS and design portions of this project.

Landfill Size

- Why such a large site? [commenter referring to the Ma'alo landfill site] (Mtg. 1)
- Look at a smaller landfill footprint based on the push for recycling and reuse – how big do we really need this site to be? (Mtg. 1)
- Need to make sure that the information used for these studies and landfill planning is based on current waste stream data reflecting the increase in recycling and reuse and our change in lifestyle. (Mtg. 1)
- Need to assume in design that we continue to do better in recycling and reuse and therefore our landfill needs decrease. (Mtg. 1)
- What are your assumptions on diversion rates over the years? (Mtg. 4)
- Is county zero waste policy being considered in project? (Mtg. 4)

Response:

The County continues its efforts to promote waste recycling, reuse, and other diversion methods, and continues to plan toward the ideal of zero waste. These efforts continue outside of this project in various initiatives and other efforts, and within this project, particularly in the design of an effective RRP. However, for planning purposes, the County must look at recent and current data, and provide for the safe disposal of the island's solid waste. As the County has already spent more than a decade trying to site the new MSWLF, developing too small a site would require this effort to be repeated in the near future. Additionally, the phasing of the proposed MSWLF site is planned to allow for continued use of portions of the site for other productive uses until such time that those portions are needed for landfill or related operations.

Soil Cover

- Cover material issues need to be discussed such as if the cover material is transported to the site what contaminants might it have, i.e., is it going to be "dirty" dirt [contaminated soils]

– if it is, how will it be cleaned up – if it has GMO (Genetically Modified Organism) contaminants what steps will be taken to make sure that dust does not fly off the trucks during transport and effect farmers along the transport route. (Mtg. 2)

Response:

The State of Hawaii Department of Health regulates the type of soil that may be used for cover material, and will impose those restrictions as part of the solid waste permit. Generally, contaminated soil is not allowed. The County will maximize the use of onsite soils, to the extent available and feasible, to minimize the importation of cover soil. The delivery of refuse to landfills will be controlled with appropriate measures including the use of covered refuse trucks and the cleaning of refuse truck beds at the landfill, as appropriate, when the vehicles leave the site.

General

- List of types of buildings, hours of operation and cost impacts needs to be in the studies. (Mtg. 4)
- Studies should note the benefits of a landfill. (Mtg. 1)
- When I toured Kekaha, I was surprised, I expected it to be smelly – it was not smelly and they had a system to catch the leachate and it seemed to operate well. (Mtg. 1)

Response:

The DEIS, which will be made available for review and comment by the public, will include this information.

The County intends to design the new landfill to have control systems equal to, or better than, those present at Kekaha to maintain a well operated facility.

Landfill Technical Design

- Need to address the length of time liners maintain their integrity if the life of the landfill is going to be this long. (Mtg. 2)
- Is the liner system adequate – how many years? (Written Comments 2)

Response:

The conceptual landfill design will be addressed in the EIS documentation.

The landfill liner system planned for the new landfill will be evaluated and approved by the EPA and State DOH prior to use. It will be composed of multiple layers, likely including geosynthetic high-density geosynthetic plastic, bentonite, and crushed rock (to cushion and protect the plastic layer). This robust liner system is expected to remain functional through the active life of the landfill, including the post-closure period after the landfill stops accepting waste.

11.3.2 Resource Recovery Park (RRP) Design and Operations

RRP Design

- Need to discuss a MRF (materials recycling facility). (Mtg. 1)
- What types of services and activities will be in the resource recovery park needs to be discussed. (Mtg. 2)

- How does it work between the RRP and landfill as regards timing, and materials flow etc. – this needs to be addressed. (Mtg. 1)
- How will alternatives be identified for each RRP element? What are the criteria for siting each element that lead to optimum operation of the element? – the description must have sufficient detail to allow comparison between the alternative placement being discussed and the placement at the proposed RRP. (Mtg. 4)
- The EIS should address the alternative of developing an integrated Resource Recovery System (i.e. siting complementary facilities at various locations other than the Resource Recovery Park where appropriate) rather than locating all the diversion activities at a Resource Recovery Park (a single location adjacent to the landfill). (Written Comments 2)

Response:

The RRP Feasibility Study (FS), which will be made available for review on the County's New Landfill website (www.kauai.gov/newlandfillsite/) and for comment by the public, will contain this information. The Final FS will be summarized in the DEIS.

The alternative of developing an integrated resource recovery system will be described in the DEIS.

Education

- Is there a communication/education aspect at RRP to develop and efficiently manage the site and to maximize the use. (Mtg. 4)
- Education needs to be a component of the RRP. (Mtg. 4)

Response:

The County is supportive of educational opportunities, and the RRP FS, which will be made available for public review, will address this concern.

Current Proposed RRP Location

- RRP needs to be in the EIS – is Grove Farm building it, donating the land – how many acres is the site and what will be in the RRP? (Mtg. 4)
- Why is the RRP not on state land next to the landfill? (Mtg. 1)
- Why are the RRP site and the landfill site separated and why is RRP not also on state land. (Mtg. 4)
- It sets up a scam to pay Grove Farm (Ma'alo Site). (Written Comments 4)
- Why isn't the entire site on state land? (Written Comments 2)

Response:

Negotiations are ongoing between the County and the landowners to evaluate whether the RRP site will be located within the proposed MSWLF site footprint, or on the nearby alternate RRP site. However, the precise location of the RRP is being evaluated to ensure that the best site possible is selected. Ultimately, the RRP is likely to be owned by the County, possibly with a private specialist managing operations, much as the current Kekaha MSWLF operates; this too, however, has not been finalized.

RRP Location(s)

- Shouldn't the RRP be sited closer to an area where things can be shipped out since we do not process on this island – should address this in the EIS. (Mtg. 1)
- There needs to be discussion on whether all recycling facilities will be located at the RRP or will some be appropriately located in geographic areas outside of the RRP to be more convenient to communities such as green waste facilities. (Mtg. 3)
- Look at appropriate decentralization of resource recovery especially green waste. (Mtg. 3)
- MRF should be located close to the harbor. (Mtg. 3)
- What kinds of efficiencies would you get if the MRF were closer to the harbor? – need to look at number of trips, gas consumed, and carbon loading issues – what are differences in these issues if it were located at the harbor instead of inland? – need to look at efficiencies of all elements of a MRF with relation to centralizing, decentralizing and all other alternatives – need to take into account convenience of location areas for users in order to increase use – look at places people frequent. (Mtg. 4)
- There needs to be a discussion of the connection to the Harbor for shipping collected materials out. (Mtg. 4)
- Does having a central location more inland for recycling, etc., mean that there will be less shipping cost to transport? (Mtg. 4)
- Siting study needs to include where things will be located, travel measures and cost including calculations from trip origin to destination and how many trips. (Mtg. 4)
- Decentralized consideration for these facilities is not just about convenience but also about carbon loading, fossil fuel use and traffic impacts and these need to be considered. (Mtg. 4)

Response:

While there are some benefits to decentralized facilities, there are also drawbacks. The idea of a centralized RRP is to encourage diversion and recycling by creating a “one stop shop” for recycling and diversion, to try to maximize the amount of material diverted from the landfill. Also, having certain technologies at the RRP does not preclude the County from having similar or duplicate services elsewhere. The proposed RRP sites are within approximately 5 miles of Nāwiliwili harbor.

The environmental impacts of the RRP, including its location and the nature of the onsite processes and technologies, will be addressed in the DEIS, which will be provided for public review and comment.

RRP Feasibility Study

- What is the status on the RRP feasibility study? (Mtg. 1)

Response:

The Draft RRP FS is currently being drafted, will be posted to the County's New Landfill website (www.kauai.gov/newlandfillsite/) for public review, as will notices for public meetings to inform the public and solicit community feedback. The Final FS will be summarized in the DEIS.

11.3.3 Roadways and Traffic

Access Roadway Issues

- What is the estimated cost of road infrastructure? (Mtg. 4)

- Who pays for the roads, needs to be addressed. (Mtg. 1)
- All road routes need to be looked at. (Mtg. 1)
- Traffic flow needs to be discussed especially at the river intersect. (Mtg. 3)
- Road and traffic issues need to be looked at – will it use an existing road or a new one? (Mtg. 4).
- Will there be a County use bypass road from Puhi behind Līhu'e to the site? (Mtg. 4)
- Roadway behind Hanamā'ulu should be discussed to take traffic off the main road. (Mtg. 4)
- What type of road infrastructure will be involved? – what are the development pressures created by access proposals? – who pays for roads and who benefits from the road construction? (Mtg. 4)
- If Ma'alo is the chosen site the studies need to look at the road issues and any positives the project might have for the community. (Mtg. 1)
- Roads must be part of the process and include all access issues – should also look at the growth potential that the road would create for other public facilities and uses within the corridor. (Mtg. 1)
- Recreational aspect that could be developed and served through providing new access route(s) for the landfill need to be discussed such as public access to Kalepa Ridge and Wailua River. (Mtg. 4)
- I am disappointed that the road is in a separate EIS from the landfill, they need to be discussed together. (Mtg. 1)
- Traffic impacts need to be addressed. (Mtg. 3)
- Traffic will affect the residents close by-in the Hanamaulu area _the flow pattern (Written Comments 1)
- The EIS should address the traffic impacts on Maalo Rd, especially at the intersection with Kuhio Hwy. In addition, there should be a discussion of the mix of residential and small commercial vehicles with the larger commercial haulers and County trucks. As an alternative: It seems more efficient, safer, and more logical to locate elements of the RRP such as the MRF, the Center for Hard to Recycle Material, and residential and small commercial waste and greenwaste drop sites in a more convenient location with better access to the harbor. (Written Comments 2)

Response:

A traffic impact study is one of the “special studies” that will be conducted for the DEIS, and will be made available for public review and feedback.

11.3.4 Environment

Groundwater

- Proximity to drinking wells needs to be addressed. (Mtg. 1)
- Drinking water issues. (Mtg. 1)
- Water table protection needs to be assured. (Mtg. 2)
- Groundwater impacts should be addressed. (Mtg. 1)
- What does cell mean? Need to define the term and talk about how cells will be developed and any potential impacts on the water table. (Mtg. 4)

- Impacts on the pump house by the prison also need to be addressed. (Mtg. 1)
- Impacts on drinking water need to be looked at. (Mtg. 4)

Response:

Management and monitoring of potential groundwater impacts will be accounted for in the conceptual engineering design. The potential for impacts and mitigation measures, if warranted, will be addressed in the DEIS, which will be made available for public review and feedback.

Surface Water

- Watersheds and ocean reefs are dying, putting the landfill in a water catchment area is not a good idea, not just for the nearshore waters and reefs, but for our fisheries – these issues need to be addressed. (Mtg. 1)
- The impacts of flooding on the site and any runoff issues that could occur, especially how to prevent toxic runoff in view of wetness of the area and the potential for global warming to make it even wetter and increase the frequency and severity of storms. (Mtg. 1)
- Impacts on the Tanaka Pond need to be addressed. (Mtg. 1)
- Rainfall impacts need to be looked at. (Mtg. 4)
- It is too close to viable fresh water. (Written Comments 4)
- The downstream toxicity cannot be prevented or fixed once there's spill over. (Written Comments 4)
- It is totally unacceptable to even consider putting a landfill anywhere near fresh water – as the propose Ma'alo site is. (Written Comments 5)

Response:

Management and monitoring of potential surface water impacts will be accounted for in the conceptual engineering design. The potential for impacts and mitigation measures, if warranted, will be addressed in the DEIS, which will be made available for public review and feedback.

Leachate Management

- The EIS needs to describe the way all potential contaminants will be dealt with. (Mtg. 2)
- Toxic fluids produced by the landfill need to be addressed. (Mtg. 1)
- If we achieve our goals of landfilling as little as possible the result might be a more toxic landfill. How do we deal with this. (Mtg. 3)
- From what has happened on Oahu....A plastic-lined hole would create toxic fluids that will run off in heavy rains and wind. Global warming will only increase precipitation on the wettest place on earth. (Written Comments 2)

Response:

State and Federal solid waste regulations limit the type of material that can be disposed of in a MSWLF. This includes a prohibition against the disposal of any EPA-regulated materials considered to be toxic or hazardous. These types of materials will not be accepted for disposal in the County's MSWLF.

Leachate management control systems are a critical part of any properly designed and engineered modern landfill. The County's new MSWLF will employ a modern effective leachate management

system. The system will include monitoring and contingency planning to maintain proper landfill performance and to guard against spills.

The types of materials accepted for landfilling and the management of leachate will be addressed in the DEIS, which will be made available for public review and feedback.

Air Quality

- Odor issues need to be addressed. (Mtg. 1)
- Dust issues should be addressed. (Mtg. 1)

Response:

Odor and dust will be managed by provisions of the landfill operation plan, and related impacts and mitigation measures will be described in the DEIS, which will be made available for public review and feedback.

Wildlife

- Flora and fauna studies need to occur. (Mtg. 1)
- What are the wildlife impacts? (Mtg. 4)

Response:

Botanical and faunal resources were preliminarily evaluated in the Siting Study (AECOM 2012) and will be evaluated in further detail as a special study for the DEIS, which will be made available for public review and feedback.

Environmental Monitoring

- The EIS needs to include a scenario for monitoring for the life of the site if indeed it is 264 years. (Mtg. 2)

Response:

The landfill design, operations plan, and eventual operating permit will require extensive monitoring during the useful life of the landfill, and beyond into the "post-closure" period. The monitoring plan will be subject to SHWB approval. The major components of the monitoring plan will be included and discussed in the DEIS.

Excavated Soil

- What will happen to the dirt that is dug out at the site? (Mtg. 4)

Response:

It is anticipated that, pending further evaluation, the soils excavated at the site will be suitable for use in the design of the landfill, to promote reuse of onsite materials and reduce the need to import material from off site.

General Environmental Protection

- The EIS needs to show and assure that the landfill will be properly developed and lined. (Mtg. 2)

- Who is liable if the experts are wrong and things go wrong. (Mtg. 1)

Response:

The conceptual design of the MSWLF will employ modern engineering environmental protective measures as required by the EPA and State of Hawai'i (the new MSWLF will not be an old-fashioned "dump site"). Ultimately, the County is liable for its public facilities.

11.3.5 Reuse and Recycling

General

- More education on how to reduce the waste stream needs to be a priority. (Mtg. 1)
- There needs to be discussion how and what are the best ways to separate out the recyclables and recoverables to make sure that all are recovered and none end up in the landfill. (Mtg. 3)
- What is the cost benefit of maximum diversion of waste from the landfill? (Mtg. 4)
- Cost benefit of banning all wet and dry organic matter from the landfill needs to be looked at – what are cost differences and the differences in potential environmental impacts if we do one or both of these? (Mtg. 4)
- Discussion on diversion policies and their impacts need to be in the document. (Mtg. 4)
- Kaua'i's Solid Waste Management Plan is quite good. I urge us to follow it quickly. (Written Comments 1)
- With a diversion goal of 70% in 10 years established in the recently passed Zero Waste Resolution, what are the design assumptions for annual disposal and ultimate capacity? If we can move aggressively to achieve a 50% or 60% diversion rate by the time the landfill is completed, Will we really require all that space? It seems it may be more appropriate to locate those elements of the Resource. Recovery Park, which are appropriate, on the actual landfill site as it is State land. This would simplify integration of operations, reduce capital and operating costs and give the County more control over the operations of the various diversion options. (Written Comments 2)
- The EIS should include a discussion of diversion policies and the County's commitment to achieving the goals of the Zero Waste Resolution at the new landfill as part of the landfill design and construction, and operations. (Written Comments 2)
- The EIS should also address "external" County policies and programs necessary to maximize diversion and reduce the environmental impacts of the landfill. Programs such as: Pay As You Throw; Banning all wet organics; Commercial and Construction recycling mandates; and Bans on the sale, specific materials such as styrofoam containers and disposable plastic water bottles should be an essential part of the approval of any disposal site. (Written Comments 2)
- An evaluation should be made of the costs and benefits of maximizing diversion, while minimizing environmental and nuisance Impacts by establishing a policy of banning (maximizing the diversion of) all wet organic material, thereby minimizing methane generation and leachate toxicity. (see www.cool2012.com) with the goal of creating an Inert Residue Fill. (Written Comments 2)
- The EIS should address providing funding and staff resources to achieve our diversion goals at a level comparable to what is to be spent on creating a new disposal facility. A tipping fee surcharge on all disposal should be established to generate funds for an aggressive outreach and education campaign. (Written Comments 2)

Response:

The RRP FS will investigate and make recommendations on the appropriate technologies and processes to be employed at the RRP to maximize diversion, while considering the practical costs (i.e., through cost benefit analyses). While the RRP is a critical element in diversion, other ongoing County initiatives will continue to be pursued outside of this project. Such practices and policies are continually reviewed, and are often detailed on the Solid Waste Division website (www.kauai.gov/publicworks/solidwaste), among other places.

A more detailed discussion of the RRP and the content of the FS will also be provided in the DEIS. Many details need to be developed before the RRP can be constructed. This first step will involve evaluating the facility and its potential for adverse environmental effects in the DEIS.

Electronics

- Requirements such as stores taking back electronic waste should be strongly enforced to reduce the waste stream. Also more education on waste stream reduction for the public needs to be provided by the County. (Mtg. 1)

Response:

Although requiring stores to take back electronic waste and enforcing it is not within the scope of this project, the County will consider this and other suggestions as it continues its efforts to reduce the waste stream. County policy changes or requirements are reviewed on an ongoing basis, and are being considered as inputs in the RRP FS recommendations, to achieve a holistic approach to diverting the waste stream. The RRP FS will investigate the possibility of incorporating educational facilities into the RRP. The Draft FS will be published for public review on the County's New Landfill website (www.kauai.gov/newlandfillsite/), and public meetings will be conducted to solicit feedback on the potential components recommended to be included at the RRP.

Non-Recyclables

- How do we deal with combustibles that cannot be recycled? (Mtg. 3)
- There have been concerns voiced regarding the toxicity of certain wastes. Especially what is left after the easily recyclable material is diverted. Reducing the impacts of potentially toxic leachate could be managed in a number of ways: First, Including a Hazardous Waste collection system for small commercial generators as part of the RRP; Second, working with other communities and organizations nationwide to reduce the toxicity of many everyday products, and Finally, Implementing Extended Producer Responsibility legislation that would require the manufacturers to develop programs to take back their products. All these issues need to be discussed as alternatives to simply continuing to bury this material. (Written Comments 2)

Response:

Several of the potential RRP technologies may be able to help divert the combustible waste stream, and will be described in the forthcoming RRP FS. The Draft FS, once completed, will be published for public review on the County's New Landfill website (www.kauai.gov/newlandfillsite/), and public meetings will be conducted to solicit feedback on the potential components recommended to be included at the RRP.

11.3.6 Socioeconomic and Cultural Impacts

Cultural Resources

- Cultural impacts need to be carefully addressed. (Mtg. 1)
- Cultural resource issues that were raised in the siting study meeting should be addressed. (Mtg. 1)

Response:

Nearby cultural resources were preliminarily evaluated in the Siting Study (AECOM 2012) and will be evaluated in further detail as a special study for the DEIS, which will be made available for public review and feedback.

Effect on Agriculture

- Impacts on agricultural crops, their water supply and farmer access needs to be addressed. (Mtg. 1)
- Need to look at impacts on important or potentially important agricultural lands. (Mtg. 4)
- A discussion of the Kalepa Agricultural Park including number of acres and any impact this project will have on it or its expansion – as well as the delivery of pressurized water to the farmers. (Mtg. 4)
- Where is Kalepa Agricultural Park in relation to the site? – what impact does the landfill have on it and future expansion plans. (Mtg. 4)
- It is on arable land – farmable land (Ma'alo Site). (Written Comments 4)
- The Ma'alo site is Ag. land and should be used and or available as Ag. land. (Written Comments 5)

Response:

The Siting Study (AECOM 2012) has investigated the agricultural land use associated with the siting alternatives, and negotiations with agricultural parties and interests in the vicinity of the proposed site are ongoing. The DEIS will further evaluate impacts to agriculture.

Effect on Residences

- Impact on property values should be addressed. (Mtg. 1)
- The EIS should show that it will not impact any neighborhood negatively. (Mtg. 1)
- Neighborhood groups in potential siting areas should be contacted. (Mtg. 1)
- Show the residences on your maps so we can see the distances – this is an issue that needs to be addressed in the EIS. (Mtg. 1)
- Concerned about the road and its closeness to residences with the type of traffic it will have – those impacts need to be addressed. (Mtg. 1)
- This proposed site will have a very negative impact on the Hanamaulu neighborhood. (Written Comments 5)

Response:

The DEIS will evaluate impacts to nearby residences, and may result in appropriate mitigation measures. Maps provided in the future will show the nearby residences. A traffic impact study is one

of the “special studies” that will be conducted for the DEIS, and will be made available for public review and feedback.

Visual Impacts

- Impacts of the site on tourism and view plains. (Mtg. 1)

Response:

Visual impacts will be evaluated in the DEIS, which will be made available for public review and feedback.

Hawaiian Homelands

- What impacts does the landfill development have on Hawaiian Home Lands? (Mtg. 4)
- It steals crown lands from the Hawaiian people (Ma’alo Site). (Written Comments 4)

Response:

Potential Impacts to Hawaiian Home Lands will be evaluated in the DEIS, which will be made available for public review and feedback.

Land Ownership

- Don't agree that the land is owned by the State and Grove Farm, my family has a claim to the land so the EIS needs to look at land ownership issues – DLNR (Department of Land and Natural Resources) needs to act on the claim I filed. (Mtg. 4)
- Again I do not agree on the ownership of the land and what we are discussing tonight is only the County's plan for the site – my family as owners would like to see a graveyard for Native Hawaiians on the site. (Mtg. 4)

Response:

The County respects all comments made by the community and notes that the negotiations for the use of land will be conducted only with the current, legally listed landowners in accordance with law.

Consistency with County Zoning Plans

- Need to look at any inconsistencies between the proposal and the County General Plan or Regional Plans. (Mtg. 4)
- Discussion on any inconsistencies between the proposed action and the existing County General Plan and Regional Plans needs to be addressed. (Mtg. 3)

Response:

Consistency with zoning and other land use plans were evaluated in the Siting Study (AECOM 2012) on a preliminary basis, and potential impacts will be further evaluated for the DEIS, which will be made available for public review and feedback.

Socioeconomic and Cumulative Impacts

- Socio economic impacts need to be addressed. (Mtg. 4)
- Social and economic impacts. (Mtg. 1)

- Discussion on both direct and indirect impacts as well as cumulative and growth inducing impacts needs to be in the EIS. (Mtg. 3)

Response:

Socio-economic impacts were preliminarily investigated in the MACLS (RMTC 2009), which became part of the basis of the Siting Study (AECOM 2012). A detailed Socioeconomic Impact Assessment is one of the “special studies” that will be conducted for the DEIS, which will be made available for public review and feedback.

11.3.7 EIS Process

Community Outreach

- There needs to be more outreach to non-English speakers at all levels of the community – persons with appropriate language skills should go door-to-door with handouts in the appropriate languages. (Mtg. 1)
- Will there be public tours of the site? Can we get access to see for ourselves what the site is like? (Mtg. 1)
- Have you consulted with Native Hawaiians about this site? (Written Comments 5)

Response:

The County will consider these requests and as appropriate determine whether they are feasible.

The County will seek to notify all members of the public and community concerning this project. This will include Native Hawaiians, as well as other members of the general public.

Future EIS Meetings

- You need to bring large topographic maps to the meetings so we can really see the site and the topography. (Mtg. 1)
- Please include the list of all sites looked at in your documents for meetings. (Mtg. 1)

Response:

This information is included in the Siting Study (AECOM 2012), which is available to the public on the County’s New Landfill website (www.kauai.gov/newlandfillsite/), and these suggestions will be adopted for future meetings.

Enhancing On-line Access to the EIS Process

- Consider accepting comments by e-mail. (Mtg. 1)
- Future press releases should include the website. (Mtg. 1)

Response:

These suggestions will be adopted.

Addressing Public Comments

- Need to see all of these questions answered in a way that the answers are easily connected to the questions not buried in a document and hard to find or link to the questions. (Mtg. 1)

- The EIS needs to address what manner and style the County will use to address community concerns and these have to be addressed in a meaningful way. (Mtg. 2)
- All of the statements made in the handout for this evening's meeting need to be addressed and the methodology behind the statements needs to be explained. (Mtg. 4)

Response:

These responses to the public's initial questions and comments will be posted to the County website (www.kauai.gov/newlandfillsite/), and will be included as an appendix to the EISPN. Questions received during the next two rounds of public input (following publication of the EISPN and the DEIS) will be addressed similarly, and will be included as an appendix to the succeeding EIS document (Draft and Final EIS, respectively).

The County will make every effort to address all community concerns, and has implemented more public meetings (eight for the EIS documents alone) and rounds of public meetings (three, including this initial round) than are typical for an EIS.

All material presented in the public meetings will be clearly presented in the various documents published as part of this project.

Integrated Solid Waste Management Plan

- Kauai's Solid Waste Management Plan is quite good, I urge us to follow it quickly! (Written Comments 1)

Response:

The site selection, design, and review processes are all being conducted in general accordance with the ISWMP (R. W. Beck 2009).

General EIS Comments

- How do we know that what we say tonight will change anything? (Mtg. 1)
- This feels like last meetings and that we are just doing it over again. (Mtg. 1)
- Technical, economic and environmental aspects as well as a no-project alternative need to be discussed. (Mtg. 4)
- If we continue with the focus of reuse and recycling of waste, we may not need a landfill – this alternative should be considered in the EIS. (Mtg. 1)
- The full range of potential health impacts need to be addressed. (Mtg. 1)
- The EIS needs to address cultural impacts, groundwater, surface water, flood plains, visual resources, ambient noise issues and biological resources. (Mtg. 3)
- Direct and indirect environmental and cumulative impacts as well as growth inducing impacts need to be looked at. (Mtg. 4)
- Groundwater, surface water, floodplains, cultural and biological resources, noise and cumulative impacts need to be addressed. (Mtg. 4)
- Need to discuss lost use opportunities for the land the landfill is developed on. (Mtg. 4)

Response:

All of these items will be addressed in the DEIS, and will be made available for public review and feedback.

11.3.8 Other Comments

Kekaha Landfill

The public was told that the County will respond to an issue not related to this project that was raised by the community during the meeting involving a request for follow-up by the County of Kaua'i: The County needs to come talk to the Kekaha community regarding how liability issues get handled after the Kekaha landfill closes. (Mtg. 2)

Response:

The Kekaha MSWLF is not within the scope of this project. However, the County is committed to properly managing the Kekaha MSWLF, both during its operation and during the post-closure period, and will continue to actively seek feedback from the community.

12.0 AGENCIES AND ORGANIZATIONS TO BE CONSULTED IN PREPARATION OF THE DRAFT EIS

12.1 FEDERAL

- Department of the Army, Corps of Engineers
- United States Fish & Wildlife Service

12.2 COUNTY OF KAUA'I

- Department of Public Works
- Department of Planning
- Department of Water Supply
- Department of Parks and Recreation
- Fire Department
- Police Department
- County of Kaua'i Transportation Agency

12.3 STATE OF HAWAI'I

- Department of Business, Economic Development and Tourism, Office of Planning
- Department of Education
- Department of Hawaiian Home Lands
- Department of Health, Environmental Health Administration
- Department of Land and Natural Resources:
 - State Historic Preservation Division
 - Office of Conservation and Coastal Lands
 - Division of Forestry and Wildlife
 - Other divisions as appropriate
- Department of Transportation
- Office of Environmental Quality Control
- Office of Hawaiian Affairs
- University of Hawai'i Environmental Center

12.4 ELECTED OFFICIALS, ORGANIZATIONS, AND INDIVIDUALS

12.4.1 State of Hawai'i

- Senator Ronald D. Kouchi (8th Sen. District)
- Representative Derek S.K. Kawakami (14th Rep. District)
- Representative James Kunane Tokioka (15th Rep. District)
- Representative Dee Morikawa (16th Rep. District)

12.4.2 County of Kaua'i

- Mayor Bernard P. Carvalho, Jr.
- Jay Furfaro, County Council Chair
- Nadine K. Nakamura, County Council Vice Chair
- Tim Bynum, County Councilmember
- Dickie Chang, County Councilmember
- Gary Hooser, County Councilmember
- KipuKai Kualii'i, County Councilmember
- Ross Kagawa, County Councilmember
- Mel Rapozo, County Councilmember
- JoAnn A. Yukimura, County Councilmember

12.5 UTILITY COMPANIES

- Kaua'i Island Utility Cooperative
- Hawaiian Telcom, Inc.
- Time Warner Cable
- Cox Communications
- Charter Communications

12.6 OTHER PARTIES

- Community Members (see Section 11.0 EIS Community Scoping)

13.0 SIGNIFICANCE DETERMINATION

13.1 SIGNIFICANCE CRITERIA

In accordance with HAR §11-200-12, the proposing agency has considered each phase of the proposed action, the expected consequences, both primary (direct) and secondary (indirect), and the cumulative as well as the short-term and long-term effects of the action, in order to determine whether the proposed action may have a significant effect on the environment. It is noteworthy that, according to the HAR §11-200-2, "effects may also include those effects resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial." In making this preliminary determination, the proposed action has been evaluated with respect to the significance criteria established in HAR §11-200-12.

These significance criteria are summarized below, and will be further examined in the project DEIS.

Criterion 1: Involves an irrevocable commitment to, loss or destruction of any natural or cultural resources. The proposed project would require irrevocable commitment of state land. The potential effects and recommended mitigation measures, if warranted, for biological resources will be examined in a biological survey. An archaeological study consisting of sensitivity mapping and literature research, and a Cultural Impact Assessment, will be prepared as part of the EIS documentation to identify existing and potential historic, archaeological, and cultural resources, if present, and recommend mitigation measures, if warranted. The potential effects will be addressed through the development of mitigation measures and practices that will be further described in the forthcoming project DEIS.

Criterion 2: Curtails the range of beneficial uses of the environment. The approximately 270-acre Ma'alo facility will change the land use within the facility footprint but not in the whole parcel. Construction and operation of a MSWLF and RRP (as either part of the 270-acre parcel or on a separate approximately 80-acre site) are not expected to significantly detract from the function or use of the environment. The proposed MSWLF site footprint was moved east, toward the edge of the parcel, in order to minimize impacts to the surrounding lands. The potential effects on beneficial uses of the environment will be addressed and potential mitigation measures will be further described in the project DEIS.

Criterion 3: Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS. The proposed MSWLF and RRP would be undertaken in a manner that conforms with Chapter 344, HRS, *State Environmental Policy*. A new landfill is required to meet the island of Kaua'i's needs for safe solid waste disposal to ensure public health and maintain safety.

The County has integrated the review of environmental effects with existing planning processes, and has identified the Ma'alo site as the preferred alternative with consideration for avoiding, minimizing, and mitigating any adverse environmental effects. The project DEIS will identify potential adverse effects and appropriate measures to either mitigate or minimize impacts.

Other federal, state, and county agencies identified as having expertise or jurisdiction will be consulted during the EIS preparation. In accordance with HRS §344-5, this FEA/EISPN will be made available for public review and comment for a period of 30 days. All written comments received during the public comment period will be responded to in the project DEIS.

Criterion 4: Substantially affects the economic welfare, social welfare, and cultural practices of the community or State. No significant adverse impacts to economic welfare, social welfare, and cultural practices are anticipated from implementation of the proposed action. The potential for cultural uses of the site will be further examined in the preparation of a Cultural Impact Assessment, which will be documented in the project DEIS. As appropriate, mitigation measures and other measures may be identified to reduce or eliminate the potential for significant adverse effects.

Criterion 5: Substantially affects public health. The proposed action would have long-term positive impacts on public safety and health by allowing for proper disposal of MSW in the long-term. Current in-place operating procedures to address safety and health concerns related to heavy equipment operation, vector control, landfill gas generation, and other impacts would continue on the new site. Long-term effects from a new modern, engineered MSWLF are expected to be beneficial to the maintenance of public health and solid waste resource recovery efforts. Public health concerns and possible mitigation measures will be explored in detail in the project DEIS.

Criterion 6: Involves substantial secondary impacts, such as population changes or effects on public facilities. The project will result in a new and larger MSWLF facility and RRP, and therefore directly improves public solid waste facilities, while enabling the necessary timely closure of the current Kekaha MSWLF. Substantial population changes are not anticipated to result from the proposed project. Other possible effects on population changes or public facilities will be explored in more detail, along with potential mitigation measures, if warranted, in the project DEIS.

Criterion 7: Involves a substantial degradation of environmental quality. The proposed new MSWLF and RRP will be designed, constructed, and managed with proper modern engineering control systems, and will be operated and monitored during and beyond the life of the facilities to ensure against substantial degradation of environmental quality. The landfill portion of the proposed project will replace the existing MSWLF at Kekaha; therefore, there will not be a duplication of services and potential impacts. All MSWLF and RRP activities will be conducted in compliance with Federal, State, and County rules and regulations governing environmental quality and public health. Environmental studies will be conducted to evaluate potential environmental impacts, and will be presented along with mitigation measures in the project DEIS.

Criterion 8: Is individually limited, but cumulatively has considerable effect on the environment, or involves a commitment for larger actions. The 270-acre Ma'alo site is large enough to accommodate the solid waste disposal needs of the entire island of Kaua'i for an estimated 264 years or more. Therefore, no further related facilities will be required for many generations, and no significant cumulative effects or larger commitments are anticipated. The proposed RRP facility represents a major effort by the County to promote recycling, reuse, and reduction of landfilled waste. To the extent the proposed facility is successful in reducing the amount of waste landfilled, it will result in positive effects on the environment through increased sustainability. While the RRP may enable further development of recycling facilities on-island, those may occur with or without the RRP, and would in any case be optional (i.e., not a "commitment").

Criterion 9: Substantially affects a rare, threatened, or endangered species or its habitat. Biological studies will be conducted for the Ma'alo sites, and mitigation measures developed, if warranted, to ensure that rare, threatened, or endangered species or its habitat, if present, will not be adversely affected. A thorough assessment of potential effects to biological resources, and recommended mitigation measures, if warranted, will be described in the project DEIS.

Criterion 10: Detrimentially affects air or water quality or ambient noise levels. Only temporary construction-related impacts are anticipated to significantly affect ambient noise levels. The new MSWLF would likely be subject to requirements of an Initial Covered Source Air Permit pursuant to HAR §11-60.1-82, and administered by the CAB. A LFG collection system would be incorporated into the design to collect and control the landfill gas, which could otherwise pass through the landfill surface to the atmosphere or migrate horizontally through the soil. Therefore, long-term operational detrimental impacts to air quality are not anticipated. Modern engineered base liner and leachate collection systems would be constructed to prevent water quality impacts, and groundwater monitoring would be conducted to ensure that groundwater is not impacted by landfill operations. Therefore, detrimental effects to water quality are not anticipated. More detailed analyses, including mitigation measures, will be described in the project DEIS.

Criterion 11: Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as flood plain, tsunami zone, beach, erosion-prone area, geologically

hazardous land, estuary, freshwater, or coastal waters. Based on preliminary analyses, the proposed MSWLF site and the alternate RRP site do not appear to be located in environmentally sensitive areas, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters. Results of additional investigations to confirm this preliminary finding and develop appropriate mitigation measures, if warranted, will be presented in the project DEIS.

Criterion 12: Substantially affects scenic vistas and view planes identified in County or State plans or studies. The Ma'alo Road is identified as a scenic road resource by the County of Kaua'i. The potential for visual impacts associated with the project can potentially be mitigated with the use of appropriate vegetative controls including the use of landscaping, and plantings of grass, shrubs, and trees. Scenic vista effects and potential mitigation measures will be described in the project DEIS.

Criterion 13: Requires substantial energy consumption. Energy requirements for operation of the proposed MSWLF and RRP include electricity for management and maintenance facilities and (likely diesel) fuel for operation of heavy equipment. The proposed new MSWLF and RRP, which primarily replace existing facilities, are not expected to significantly increase the daily load on local utilities or increase daily consumption of fossil fuels. Energy requirements should be viewed in consideration of the essential nature of landfill activity to public health and safety. There is also a potential to generate power at the landfill or RRP site, and this possibility, along with more accurate estimates of energy requirements, and opportunities for energy savings, will be developed during the RRP FS and the EIS processes. Energy consumption and potential mitigation measures will be described in the project DEIS.

13.2 NOTICE OF DETERMINATION

Based on the above evaluation of the HAR §11-200-12 significance criteria contained in this FEA, the proposed project may have a significant effect. Therefore, in accordance with HAR §11-200-11.2, this EIS Preparation Notice is being submitted, and an EIS will be prepared in accordance with Chapter 343, HRS and Chapter 200, HAR.

14.0 REFERENCES

- 33 United States Code (U.S.C.). 1972. *Clean Water Act*. §1251.
- 40 Code of Federal Regulations (CFR) 60. *Standards of Performance for New Stationary Sources*.
- AECOM Technical Services, Inc. 2012. *New Kaua'i Landfill Siting Study Report*. Prepared for County of Kaua'i, Department of Public Works. Honolulu. July.
- California Department of Resources Recycling and Recovery (CalRecycle). 2011. *Resource Recovery Parks: A Model for Local Government Recycling and Waste Reduction*. Sacramento, CA. October.
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Appendix A
New Kaua'i Landfill Siting Study Report:
Executive Summary and
Overall Site Comparison and Recommendation
(AECOM 2012)

EXECUTIVE SUMMARY

This report summarizes previous site selection activities and re-evaluates the suitability and desirability of eight previously identified sites for development as the new municipal and solid waste landfill (MSWLF) for the County of Kaua'i ("the County"), Hawai'i. This report has been prepared to assist the County in identifying the proposed landfill site by distilling the many selection criteria to a core set of important criteria, including community-based priorities, environmental and cultural concerns, site life, cost, and other important considerations. This report enables the County to select the proposed landfill site, which is expected to become the preferred alternative in the upcoming Environmental Impact Statement (EIS).

Background and History. Currently, the County of Kaua'i has one operating MSWLF, the Kekaha Sanitary Landfill in the southwest part of the island, which is currently approaching its design capacity. The site selection process for a new MSWLF was initiated in 2000 when the County contracted environmental engineering consultant Earth Tech, Inc. of Honolulu, Hawai'i to prepare a Kaua'i MSWLF Siting Study. The study, in two reports published in 2001 and 2002, identified eight potential sites around the island that were considered suitable for siting a new MSWLF: Kalepa, Kekaha Mauka, Kipu, Koloa, Kumukumu, Pu'u O Papai, Ma'alo, and Umi. It evaluated, scored, and ranked these sites based on a set of 19 environmental, technical, and social/cultural criteria.

In 2007, the late Mayor Bryan Baptiste convened the County of Kaua'i Mayor's Advisory Committee on Landfill Site Selection (MACLS) to involve the community in developing siting selection criteria for a new MSWLF site for Kaua'i. The citizen's advisory committee met nine times during 2008–2009, and technical consultant R. M. Towill Corporation (RMTc) of Honolulu published the MACLS report in April 2009. The committee added to the existing criteria from the 2001/2002 siting study, established weighting (i.e., importance) factors for the 26 criteria they developed, and scored seven of the eight previously identified potential landfill sites by each of these criteria (one site, Kumukumu, was excluded due to neighboring-property development plans at the time). The 26 individual criterion scores for each site were then summed to produce a ranking of overall site suitability. A series of community meetings following publication of the MACLS report identified some community concerns with some of the methodologies used to rank the sites, and identified improvements that could be made.

Previous negotiations over the last twelve years to site the landfill at various sites have broken down, due primarily to landowner willingness related issues.

Landfill Siting Study Report. The County commissioned environmental engineering consultant AECOM Technical Services, Inc. (AECOM) of Honolulu (formerly Earth Tech, Inc.) to prepare the current New Landfill Siting Study, with assistance from RMTc. The study re-evaluates the suitability of the eight sites (Kumukumu is re-included following a change in the earlier development plans) using contemporary exclusionary criteria, generates preliminary engineering estimates and planning-level cost estimates, updates the MACLS results with a community criteria evaluation using improved scoring and ranking methodology, identifies other important decision factors for siting a new MSWLF, conducts an overall site comparison, and presents recommendations.

This report updates all previous data and performs additional analyses to allow the County to choose a proposed location for the new landfill. This report includes the following subsections.

State Landfill Criteria Evaluation (SLCE). The SLCE re-evaluated the locations of the eight previously identified potential County of Kaua'i MSWLF sites with respect to regulatory and other exclusionary criteria. Additionally, site reconnaissance was conducted at each of the eight potential sites to visually inspect for any other issues that could preclude or greatly affect the construction of a landfill or resource recovery park (RRP). No exclusion zones were mapped on any of the sites, and all sites could potentially house a co-located 80-acre RRP. Several sites may potentially house wetlands, which would have to be further investigated if the site were chosen as a proposed landfill site. If wetlands are identified, mitigation measures may be required.

Preliminary Engineering Evaluation (PREE). The PREE compares the eight previously identified potential MSWLF sites being considered for a new County landfill, provides conceptual site schematics, and provides planning-level estimates of the engineering potential of each site in terms of size, quantity, estimated useful lifetimes, and costs. The landfill with the longest estimated life is Ma'alo, followed by Kumukumu. The longest predicted site life of all sites (Ma'alo, 264 years) is an order of magnitude greater than the shortest predicted site life (Kalepa, 26 years). Given the difficulties in siting the new landfill over the past twelve years, and the years still required to site, analyze, plan, design, permit, build, and operate the new landfill, site life is a critical basis upon which the County may wish to choose a proposed site. Note that these estimated lifetimes are based on the current rates of waste landfilling, and the County is committed to developing a RRP, which may significantly extend the site lifetimes.

Planning Level Cost Estimates. The Planning Level Cost Estimates for each site consist of acquisition, development, and operation costs. All costs are presented in 2012 dollars. Once a site is chosen as the proposed landfill site, more detailed cost estimates will be developed in the Conceptual Design phase of this project, prior to completing the EIS. The largest sites are expected to be significantly less expensive over time for the County and all of its residents. The three least expensive sites overall, in order, are Ma'alo, Kumukumu, and Pu'u O Papai.

Community Criteria Evaluation (CCE). The CCE updates the community-based landfill site evaluation last summarized in the *Report of the Mayor's Advisory Committee on Landfill Site Selection, April 2009* (RMTC 2009). It ranks the potential landfill sites according to overall scores based on evaluation of the 26 siting criteria originally identified by the 2009 MACLS study. The CCE is based on the most recent raw data available, incorporates the results of the PREE, and modifies the scoring system developed in the MACLS to produce a more mathematically robust analysis, while preserving and bolstering the MACLS' relative weighting of criteria. One site not analyzed in the previous MACLS study (Kumukumu) was also analyzed. The top ranked sites under the CCE were Ma'alo, followed by Pu'u O Papa'i and Kekaha-Mauka.

Other Important Decision Factors. Other important decision factors were identified and analyzed for each site, including landowner willingness, high value agricultural sites, sustainability and proximity of the site to Kaua'i's waste generation centroid, as well as the implications of developing a co-located RRP. These factors can be evaluated in more detail once a proposed site is selected by the County for further treatment in the feasibility study, conceptual design, and EIS phases of this project.

Overall Site Comparison and Recommendation. All eight sites are technically and legally feasible sites for the County's new landfill, although no site is perfect. If any given site were chosen, the EIS process to come should identify any shortcomings for the site, which can then potentially be mitigated. All eight sites could potentially support a co-located or nearby RRP. The major pros and cons of each site are highlighted in this report, and further details are available. The County could reasonably decide which site to pursue based on several different criteria, or combinations of considerations.

The Ma'alo site is the longest-term solution for the County's waste disposal problem. The estimated site life of 264 years can potentially be extended even further with the operation of a RRP, making Ma'alo a near-permanent potential solution to the County's needs. As the last twelve years of trying to site a landfill show, the value of this near-permanent potential solution cannot be overstressed. The Ma'alo site is the *only* site identified that currently has a potentially willing landowner, it is the most economical site over the life of the landfill, it ranks very well in the CCE system, and it is centrally located (which will save costs and fuels, result in less waste-related traffic, and have positive sustainability effects).

Next Steps in the Process. Once the County selects the proposed site, site-specific engineering analyses and design will be performed for both the proposed MSWLF site and the accompanying RRP. Additionally, a detailed State of Hawai'i HRS Chapter 343 EIS will be conducted. This Siting Study Report documents and culminates the extensive evaluation of alternative potential landfill sites undertaken by the County over the last 12 years, in compliance with the Hawai'i Administrative Rules (HAR) §11-200-17(f), and will become part of the administrative record for the EIS.

Once the public-review process is complete and the EIS is approved, the land will need to be acquired or land use rights secured, and detailed engineering design, permitting, and other approvals will need to be obtained and completed before construction can begin. It may take an additional six years after completion of the EIS to acquire the land and design, permit, construct, and begin operating a new landfill.

8.0 OVERALL SITE COMPARISON AND RECOMMENDATION

As suggested in the foregoing sections of this report, there are several bases upon which the County could rationally select a proposed site for the new landfill. The following sections highlight some of the most relevant features of the sites, and provide potential alternative bases upon which to select the proposed new landfill site.

8.1 SITE SUMMARY

Table 8-1 compares some of the major considerations for the eight sites. The order of the decision factors is not intended to imply any relative importance. Any site, if chosen, would require further analysis (likely including but not limited to land surveys, flora and fauna surveys, archaeological surveys, geotechnical analysis, wetlands delineation, traffic studies, EJ evaluation, engineering design and cost analysis, etc.) during the design and EIS phases of this project. By first identifying one proposed site, the County can limit these detailed studies to less than eight sites, thus saving the County significant time and expense.

It should also be noted that any identified real or perceived deficiency in a particular site can potentially be mitigated, and the EIS process will investigate these possibilities. Also, as the existing Kekaha Phase II Landfill approaches capacity and closure, the No Action alternative (not siting a new landfill), while requiring consideration in the EIS process, is simply not a practicable option for the County of Kaua'i.

8.2 RECOMMENDATION

All eight sites are technically and legally feasible sites for the County's new landfill, although no site is perfect. If any given site were chosen, the EIS process to follow should identify any shortcomings for the site, which can then potentially be mitigated.

The County could rationally decide which site to pursue based on several different criteria, or combinations of considerations. The recommendation which follows was arrived at by weighing the pros and cons of all the various rankings, important decision criteria, and other measures presented in this report.

8.2.1 Ma'alo

The Ma'alo site is the longest-term solution for the County's waste disposal problem. The estimated site life of 264 years can potentially be extended even further with the operation of a RRP, making this a near-permanent potential solution to the County's needs. As the last twelve years of trying to site a landfill show, the value of this near-permanent potential solution cannot be overstressed.

The Ma'alo site is also the only site identified that currently has a potentially willing landowner. As this factor has derailed previous efforts, it could reasonably be the overriding decision-making factor.

Although it has a relatively high initial cost, the Ma'alo site is the most economical site over the life of the landfill, due to factors including economy of scale and potential cost amortization over its long site life. The economic benefits of Ma'alo discussed in this report are if anything understated, as they do not quantify the additional cycles of siting new future landfills that all the other sites would require. The overall site development costs and impacts need not be incurred at once, as the County can build successive cells as they become necessary. Similarly, displacement of current land users can be phased in over hundreds of years, lessening the impacts. On the other hand, initial development costs for Ma'alo are relatively high.

The Ma'alo site ranks the highest in the CCE system, followed by Pu'u O Papa'i and Kekaha-Mauka, the other State-owned site. The difference between the three sites is only 42 points.

Other factors that argue for the Ma'alo site include its central location (which will save costs and fuels, decrease waste-related traffic, and have positive sustainability effects); the relatively ease with which current land uses (grazing) can be displaced to nearby locations, over the projected 264-year life of the landfill; and the local topography that shields the site from creating adverse visual impacts.

Standing water was observed in and around the Ma'alo site, so a wetland survey and jurisdictional determination may be required if the site is to be considered further. Wetlands, if present, may require mitigation measures, the cost of which cannot currently be quantified.

Table 8-1: Overall Comparison of Site Attributes and Rankings

Site	Willing Landowner?	Estimated Site Life in Years (and Rank)	2011 Community Criteria Evaluation Score (and Rank)	Estimated Total Cost per Year of Site Life (and Rank)	Estimated Initial Cost (and Rank)	Agricultural Value	Central Location / Sustainability	Major Pros	Major Cons
 <p>KALEPA</p>	No	26 (8)	585 (8)	\$ 8.36 MM (8)	\$ 32.3 MM (7)	✓	✓	<ul style="list-style-type: none"> Near island's waste centroid, providing cost savings and positive sustainability effects. 	<ul style="list-style-type: none"> Unwilling private landowner. Shortest site life of all sites under consideration. Ranks last on the CCE. Most expensive annual and initial costs. Active agricultural land use.
 <p>KEKAHA MAUKA</p>	No	60 (5)	835 (3)	\$ 7.59 MM (7)	\$ 26.5 MM (1)	✓		<ul style="list-style-type: none"> Ranks third on the CCE. Lowest initial cost Located near existing Kekaha Landfill which has some in-place infrastructure. Relatively low nuisance factor due to distance from population. Located below the UIC line. Low rainfall. Located near existing roadway. 	<ul style="list-style-type: none"> Unwilling landowner (State of Hawaii). County cannot condemn State-owned property; requires willing landowner. Distant from island's waste centroid. Second most expensive annual cost. Active agricultural land use. Local community has already hosted the existing Kekaha Landfill.
 <p>KIPU</p>	No	56 (6)	769 (5)	\$ 7.42 MM (5)	\$ 28.7 MM (3)	✓	✓	<ul style="list-style-type: none"> Near island's waste centroid, providing cost savings and positive sustainability effects. Located near existing roadway. Low initial cost. 	<ul style="list-style-type: none"> Unwilling private landowner. Third shortest site life.
 <p>KOLOA</p>	No	69 (4)	665 (7)	\$ 7.11 MM (4)	\$ 27.6 MM (2)	✓		<ul style="list-style-type: none"> Located near existing roadway. Low initial cost. 	<ul style="list-style-type: none"> Unwilling private landowner. Groundwater utility: the DOW has stated that groundwater supply wells in the area are productive, and that they may want to advance additional wells in the future.
 <p>KUMUKUMU</p>	No	104 (2)	707 (6)	\$ 6.94 MM (2)	\$ 30.9 MM (6)	✓	✓	<ul style="list-style-type: none"> Second longest site life. Second least annual cost. Near island's waste centroid, providing cost savings and positive sustainability effects. Disruption of current site activities relatively minor compared to other sites. Located near existing roadway. 	<ul style="list-style-type: none"> Unwilling private landowner. Possible wetlands features may require mitigation. Ranked somewhat low on the CCE.
 <p>MA'ALO</p>	Yes	264 (1)	877 (1)	\$ 6.49 MM (1)	\$ 38.1 MM (8)	✓	✓	<ul style="list-style-type: none"> The only willing landowner. Longest site life. Overall least annual cost. Ranks best on the CCE. Near island's waste centroid, providing cost savings and positive sustainability effects. Landowner willing to site adjacent Resources Recovery Park. Low nuisance factor due to local topography. 	<ul style="list-style-type: none"> Highest initial cost Possible wetlands features may require mitigation.
 <p>PU'U O PAPA</p>	No	95 (3)	848 (2)	\$ 7.00 MM (3)	\$ 29.6 MM (4)	✓		<ul style="list-style-type: none"> Ranks second on the CCE. Third longest site life. Third least annual cost. Low rainfall. 	<ul style="list-style-type: none"> Unwilling private landowner. Active agricultural land use. Distant from island's waste centroid.
 <p>UMI</p>	No	53 (7)	835 (4)	\$ 7.56 MM (6)	\$ 30.1 MM (5)	✓		<ul style="list-style-type: none"> Located below the UIC line. Low rainfall. Located near existing roadway. 	<ul style="list-style-type: none"> Unwilling private landowner. Second shortest site life. High annual and initial cost Disruption of current agricultural uses relatively significant compared to other sites. Designated as Important Agricultural Land Distant from island's waste centroid.

Appendix B
Content of New Kaua'i Landfill
Community EIS Scoping Meetings, June 2012

**Content of New Kaua'i Landfill
Community EIS Scoping Meetings**

Meetings Held:

Tuesday, May 22, 2012, 6:00-8:00 pm, King Kaumuali'i Elementary School, Hanama'ulu

Wednesday, May 23, 2012, 6:00-8:00 pm, Kekaha Neighborhood Center, Kekaha

Tuesday, May 29, 2012, 6:00-8:00 pm, Kīlauea Elementary School, Kīlauea

Wednesday, May 30, 2012, 6:00-8:00 pm, Kōloa Courthouse/Neighborhood Center, Kōloa

Attachments:

- A. Public Notification Material
- B. PowerPoint® Presentation
- C. Meeting Handout

Attachment A

Public Notification Material

News Release

For Immediate Release: May XX, 2012

Notice of Public Preconsultation Meetings

Environmental Impact Statement (EIS) for a New Municipal Solid Waste Landfill and Resource Recovery Park

The County of Kaua'i Department of Public Works, Solid Waste Division, will host four preconsultation meetings on the island of Kaua'i to obtain public input and identify issues to be addressed in the upcoming Environmental Impact Statement (EIS) for a New Municipal Solid Waste Landfill and Resource Recovery Park.

During the meetings, activities performed to date will be briefly summarized, the EIS process will be explained, and the public will be solicited to provide comments and identify specific environmental concerns for consideration in the EIS.

The existing Kekaha Landfill, presently the only municipal solid waste landfill facility (MSWLF) serving the Island of Kaua'i, has already surpassed its original design capacity. The existing two lateral expansions (Cell 1 & 2) are projected to reach capacity by early 2017, and an additional vertical capacity is already being considered to provide the necessary capacity to develop a new landfill. The County is also proposing development of a Resource Recovery Park, to maximize efforts to reduce, reuse, and recycle material that would otherwise remain in the waste stream.

The public is encouraged to attend the public preconsultation meetings, which will be held at the following dates, times, and locations:

- Tuesday, May 22, 2012, from 6:00 pm to 8:00 pm, King Kaumuali'i Elementary, Hanama'ulu, Kauai
- Wednesday, May 23, 2012, from 6:00 pm to 8:00 pm, Kekaha Neighborhood Center, Kekaha, Kauai
- Tuesday, May 29, 2012, from 6:00 pm to 8:00 pm, Kīlauea Elementary School, Kīlauea, Kauai
- Wednesday, May 30, 2012, from 6:00 pm to 8:00 pm, Kōloa Courthouse at Neighborhood Center, Koloa, Kauai

A presentation of the proposed action will be presented. Written comments may be submitted at the meetings or by mail. Mailed comments should be postmarked no later than July 30, 2012.

Mail comments to:

R. M. Towill Corporation
Re: County of Kauai New Landfill EIS
2024 North King Street, Suite 200
Honolulu, Hawaii 96819

The County is committed to consider all comments and input from the public as the Final Environmental Assessment/Environmental Impact Statement Preparation Notice is developed.

Radio Public Service Announcement

The County of Kaua'i Department of Public Works, Solid Waste Division, will host four preconsultation meetings on the island of Kaua'i to obtain public input and identify issues to be addressed in the upcoming Environmental Impact Statement (EIS) for a New Municipal Solid Waste Landfill and Resource Recovery Park.

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- Wednesday, May 30, 2012, from 6:00 pm to 8:00 pm, Kōloa Courthouse at Neighborhood Center, Koloa, Kauai
-

Written comments may be submitted at the meetings or by mail.

Mailed comments should be postmarked no later than July 30, 2012, Hawaii Standard Time.

Notice of Public Meetings

Preconsultation Meetings for New Municipal Solid Waste Landfill and Resource Recovery Park Environmental Impact Statement

**Tuesday, May 22, 2012, from 6:00 pm to 8:00 pm
King Kaumuali'i Elementary, Hanama'ulu, Kauai**

**Wednesday, May 23, 2012, from 6:00 pm to 8:00 pm
Kekaha Neighborhood Center, Kekaha, Kauai**

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Kīlauea Elementary School, Kīlauea, Kauai**

**Wednesday, May 30, 2012, from 6:00 pm to 8:00 pm
Kōloa Courthouse at Neighborhood Center, Koloa**

The County of Kaua'i Department of Public Works, Solid Waste Division, will host four preconsultation meetings on the island of Kaua'i to obtain public input and identify issues to be addressed in the upcoming Environmental Impact Statement (EIS) for a New Municipal Solid Waste Landfill and Resource Recovery Park.

During the meetings, activities performed to date will be briefly summarized, the EIS process will be explained, and the public will be solicited to provide comments and identify specific environmental concerns for consideration in the EIS.

Call the County Solid Waste Division with questions at (808) 241-4837.

NOTE: Special accommodations and sign language interpreters and interpreters for non-English speaking persons are available upon request five (5) days prior to the meeting date. To request an accommodation please contact the County Solid Waste Division at 241-4837 or via email at afraley@kauai.gov.

**Notice of Public Preconsultation Meetings
Environmental Impact Statement (EIS) for a New Municipal Solid Waste Landfill
and Resource Recovery Park**

The County of Kaua'i Department of Public Works, Solid Waste Division, will host four preconsultation meetings on the island of Kaua'i to obtain public input and identify issues to be addressed in the upcoming Environmental Impact Statement (EIS) for a New Municipal Solid Waste Landfill and Resource Recovery Park.

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A presentation of the proposed action will be presented. Written comments may be submitted at the meetings or by mail. Mailed comments should be postmarked no later than July 30, 2012, Hawaii Standard Time.

Mail comments to:

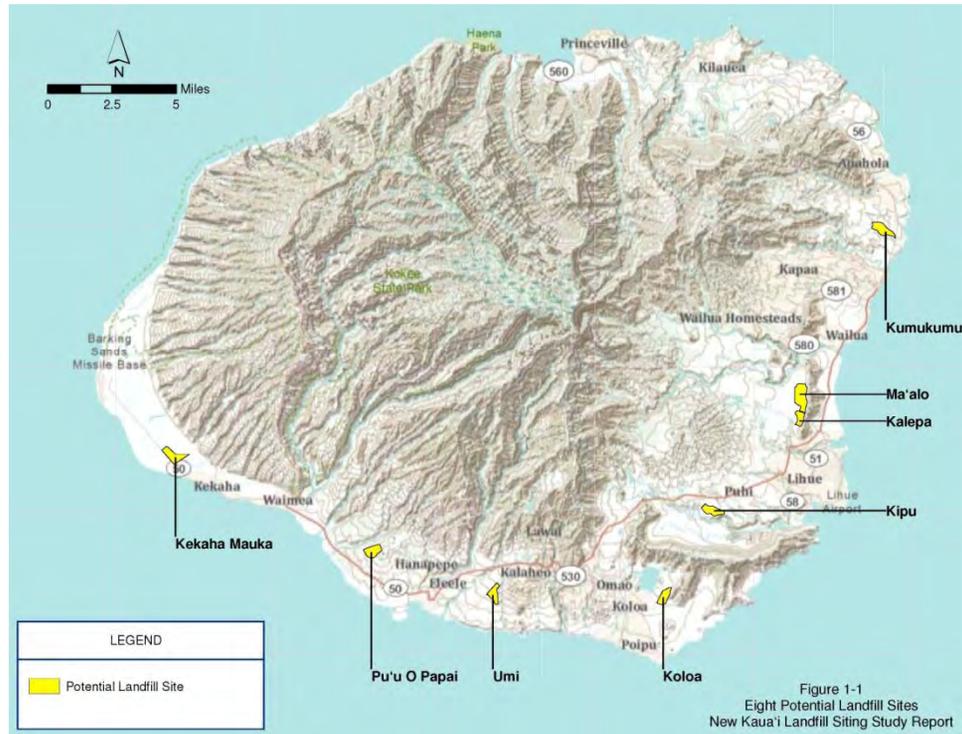
R. M. Towill Corporation
Re: County of Kauai New Landfill EIS
2024 North King Street, Suite 200
Honolulu, Hawaii 96819

The County is committed to consider all comments and input from the public as the EIS is developed.

NOTE: Special accommodations and sign language interpreters and interpreters for non-English speaking persons are available upon request five (5) days prior to the meeting date. To request an accommodation please contact the County Solid Waste Division at 241-4837 or via email at afrale@kauai.gov.

Attachment B

PowerPoint presentation



New Kaua'i Landfill Environmental Impact Statement Community Meetings

Department of Public Works
County of Kaua'i

Agenda

- ▶ **Purpose of this meeting:**

To identify environmental and cultural issues that the public feels need to be addressed in the upcoming Environmental Impact Statement (EIS) for the new municipal landfill and resource recovery park (RRP).

- ▶ **Meeting Outline:**

- ▶ (1) Introduction and Background
- ▶ (2) Project Overview
- ▶ (3) Public Comments on Environmental and Cultural Issues and Concerns

Introduction and Background

- ▶ The existing Kekaha Landfill is the only operating facility of its kind on Kaua‘i, and is approaching its design capacity.
- ▶ The County is committed to promoting reduce, reuse, recycling, and other means to divert waste from the landfill.
- ▶ Even with waste recycling and other forms of waste recovery an engineered municipal solid waste (MSW) landfill will remain necessary to handle by-products associated with waste recycling and recovery, and for waste that cannot be further recycled, recovered, or reused.

Background

- ▶ County began the landfill siting process in 2000, culminating in two reports:
 - ▶ Kaua‘i Municipal Solid Waste Landfill Siting Study, 2001
 - ▶ New Kaua‘i Municipal Solid Waste Landfill, Kalepa Site Investigation, 2002
 - ▶ 8 potential landfill sites were identified and compared based on 19 environmental, technical, and social/cultural criteria
- ▶ County convened Mayor’s Advisory Committee on Landfill Site Selection in 2007
 - ▶ Advisory Committee developed and prioritized 26 community-based criteria and evaluated 7 of the identified landfill sites

EIS Overview

- ▶ The current project has three major tasks:
 1. Siting Study: Re-evaluate the 8 previous sites
 - Use previous methodologies, with improvements and enhancements
 - Choose a proposed landfill site
 2. Engineering Feasibility Study and Conceptual Design for:
 - A new Landfill
 - A Resource Recovery Park (RRP)
 3. State of Hawaii Environmental Impact Statement (EIS): to identify and address environmental impacts and effects
 - The goal of this meeting is to begin the EIS process by soliciting the public's input to identify the environmental and cultural impacts and effects that must be addressed.
 - **At this early stage we want to make sure we understand and document the community's concerns, which we will address in the EIS.**

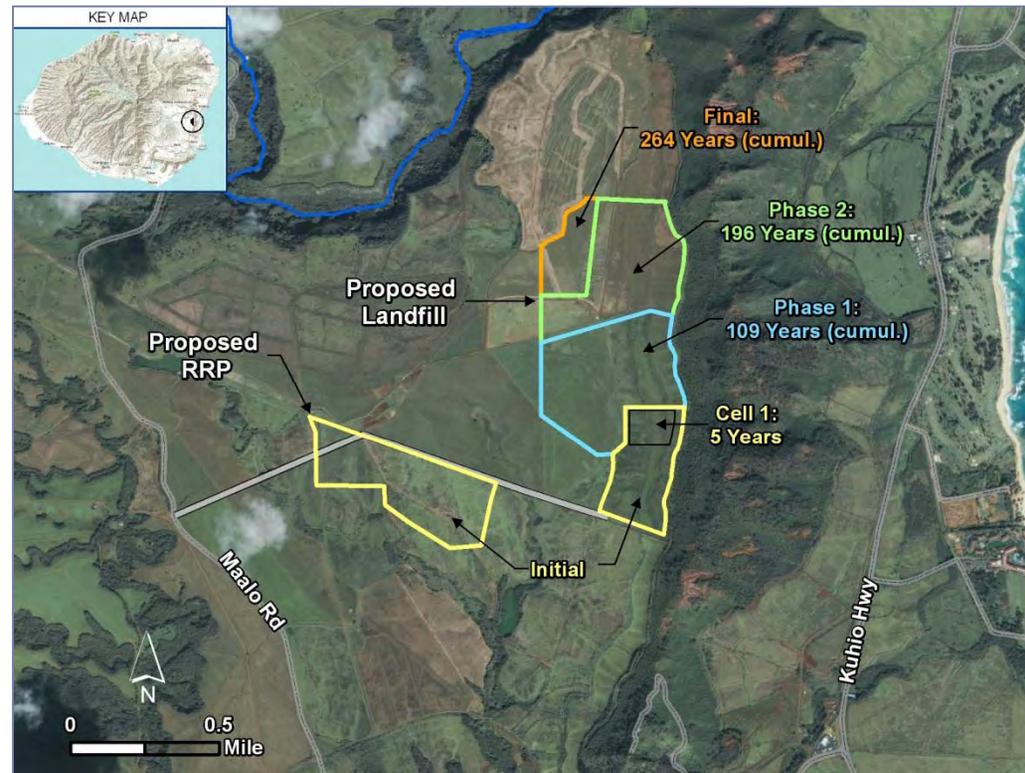
Landfill Siting Study

- ▶ Siting Study – Conducted to compare the 8 sites
 - ▶ State and other Landfill Criteria
 - ▶ Preliminary Engineering Evaluation
 - ▶ Planning-Level Cost Estimates
 - ▶ Community Criteria Evaluation (CCE), updates the MACLS Report
 - ▶ Sustainability & Resource Recovery Park (RRP)
 - ▶ Existing (Agricultural) Land Use
 - ▶ Landowner Willingness

- ▶ Siting Study will be posted to the County's New Landfill Website:
 - ▶ <http://www.kauai.gov/NewLandfillSite>

Landfill Siting Study

- ▶ Result of the Siting Study:
Ma'alo is the preferred alternative.
- ▶ Basis for this decision:
 - The only willing landowner.
 - Longest site life – estimated 264 years.
 - Overall least annual cost.
 - Ranks best on the CCE.
 - Central location = cost savings and positive sustainability effects.
 - Landowner willing to site adjacent RRP.
 - Anticipated relatively low nuisance factor due to local topography.



Preliminary schematic: subject to change.

Feasibility Study and Conceptual Design

- ▶ **Resource Recovery Park (RRP)**
 - ▶ As part of its commitment to reduce, re-use, and recycle, and to maximize diversion of waste from the landfill, the County has begun a feasibility study to:
 - Investigate appropriate recycling and re-use technologies
 - Provide cost estimates, technical feasibility analysis, and recommendations
 - ▶ Draft Feasibility Study will be made available for public review and public meetings will be held to solicit feedback.
 - Estimated date is August, 2012.
- ▶ **Landfill**
 - ▶ Provide conceptual design and cost estimates

EIS Process

- ▶ The County's EIS will be based on Hawai'i Revised Statutes, Chapter 343, the EIS Law.
- ▶ County of Kaua'i seeks public participation to help make this a better project.
 - ▶ The Draft and Final EIS will include a section documenting public comments received and the responses, to ensure all relevant issues are addressed.
 - ▶ County is committed to address community concerns.
- ▶ Public input into this process will be solicited with three sets of public meetings (total of 8 meetings), plus three public comment mail-in periods.

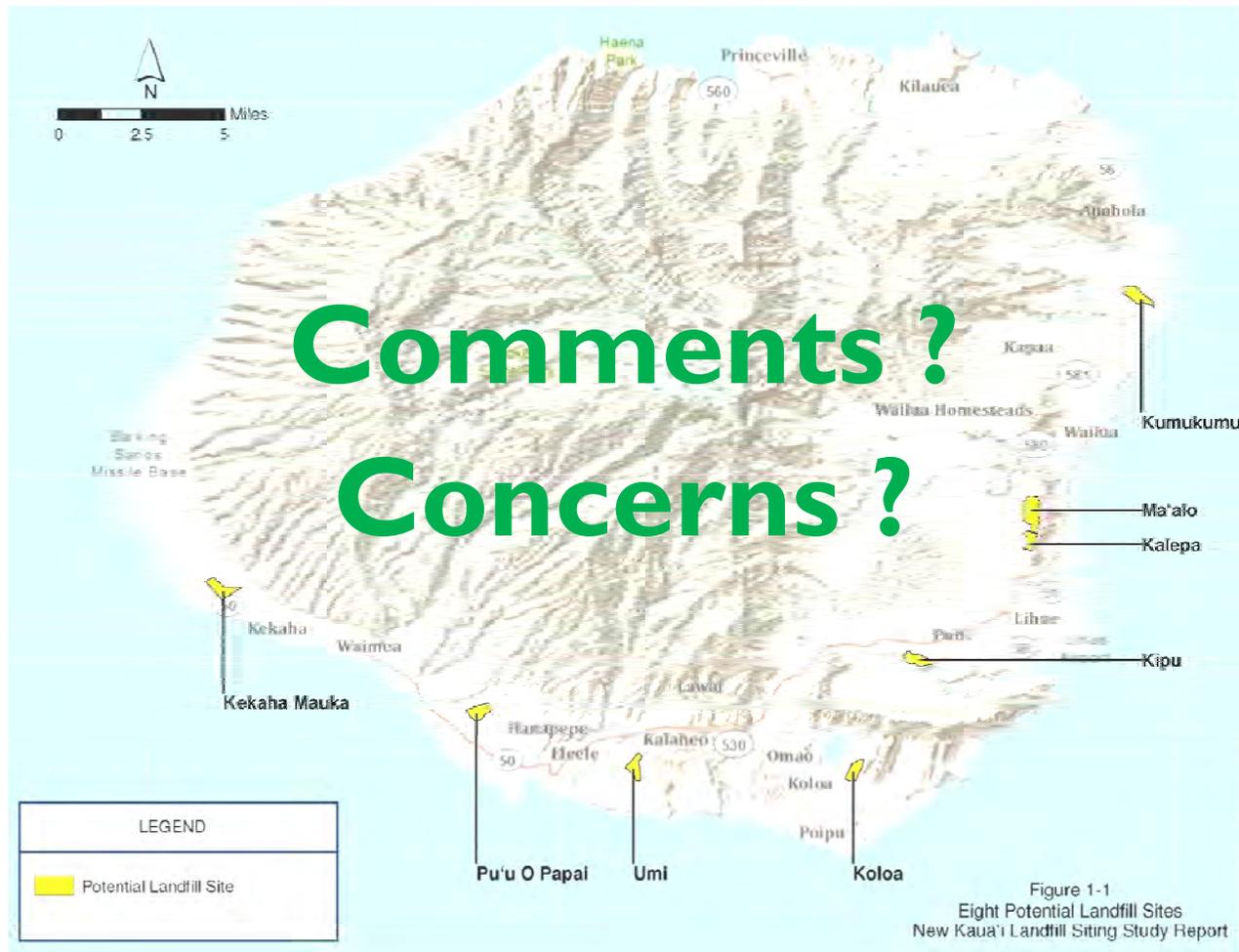
EIS Process – Public Meetings

- ▶ There will be three rounds of public meetings.
- ▶ Public comments will be documented, and responses will be included in an Appendix to the EIS.
- 1. These initial meetings are being conducted to solicit public input:
 - ▶ May 22, King Kaumuali‘i Elementary, Hanama‘ulu
 - ▶ May 23, Kekaha Neighborhood Center, Kekaha
 - ▶ May 29, Kīlauea Elementary School, Kīlauea
 - ▶ May 30, Kōloa Courthouse/Neighborhood Center, Koloa
- 2. Second round of public meetings (2 meetings) after publication of FEA/EISPN.
- 3. Third round of public meetings (2 meetings) after publication of the DEIS.

Summary of EIS Process

- ▶ The comprehensive EIS process will include publication of the following documents, with associated opportunities for public input:
 - ▶ **FEA/EIS PN** – EIS Preparation Notice, approx. August 2012
 - ▶ 30 Day Public Comment Period, including 2 public meetings
 - ▶ **DEIS** – Draft EIS, approx. May 2013
 - ▶ 45 Day Public Comment Period, including 2 public meetings
 - ▶ **FEIS** – Publication of Final EIS
 - ▶ FEIS expected approximately November 2013
- ▶ Documents and news will be posted to the New Landfill Website:
 - ▶ <http://www.kauai.gov/NewLandfillSite>

Relevant Public Comments on Environmental Issues and Concerns



Attachment C
Meeting Handout

New Kaua'i Landfill Environmental Impact Statement Community Meetings

Purpose:

These four initial public meetings are being conducted to:

1. **Solicit public input to help identify environmental and cultural issues to be considered and addressed in the upcoming EIS.**
2. Inform the public regarding ongoing activities and the upcoming EIS process.

Initial public meetings:

- Tues., May 22, 2012, 6:00-8:00 pm, King Kaumuali'i Elementary, Hanama'ulu
- Wed., May 23, 2012, 6:00-8:00 pm, Kekaha Neighborhood Center, Kekaha
- Tues., May 29, 2012, 6:00-8:00 pm, Kīlauea Elementary School, Kīlauea
- Wed., May 30, 2012, 6:00-8:00 pm, Kōloa Courthouse/Neighborhood Center, Koloa

EIS Process

The EIS process includes the following milestones and opportunities for public input:

1. **Initial Public Meetings**
2. **FEA/EIS PN** – approx. August 2012
 - 30 Day Public Comment Period, including 2 additional public meetings
3. **DEIS** – Draft EIS approx. May 2013
 - 45 Day Public Comment Period, including 2 additional public meetings
4. **FEIS** – Publication of Final Environmental Impact Statement
 - FEIS expected approximately November 2013

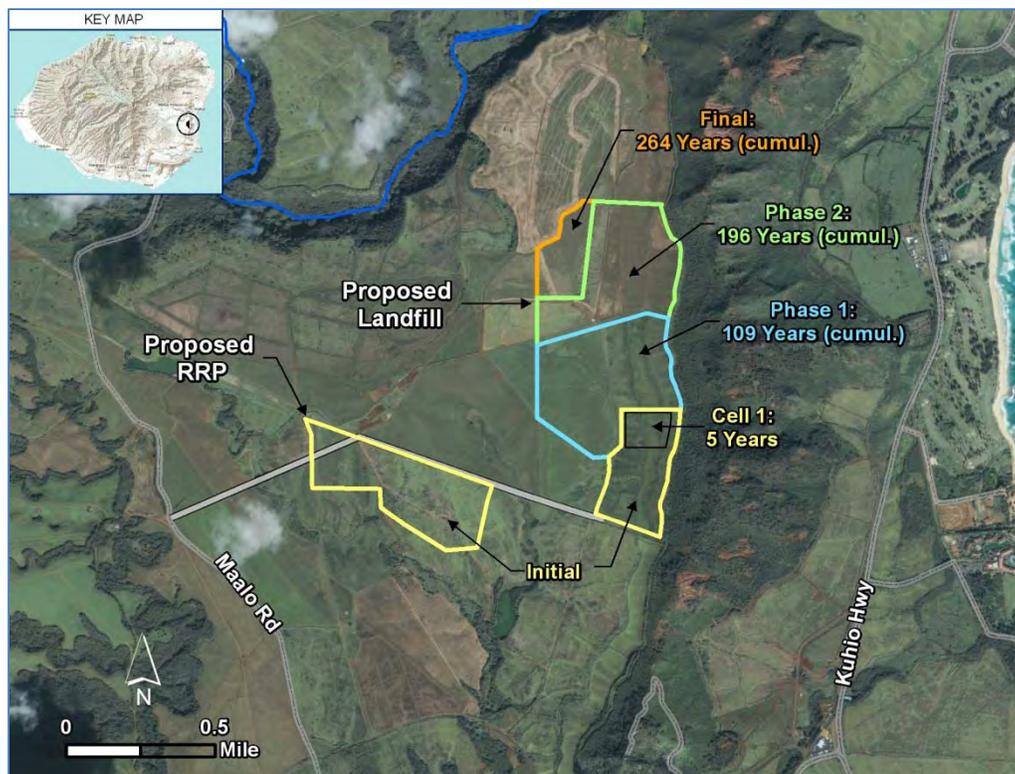
Documents and news will be posted to the County's New Landfill Website:

<http://www.kauai.gov/NewLandfillSite>

Ma'alo is the proposed landfill site.

- The only willing landowner.
- Longest site life – estimated 264 years.
- Overall least annual cost.
- Ranks highest on the Community Criteria Evaluation.
- Central location = cost savings and positive sustainability effects.
- Landowner willing to site adjacent RRP.
- Anticipated relatively low nuisance factor due to local topography.

The Final Siting Study Report will be available on the County's website.



Preliminary schematic: subject to change.

Appendix C
Public Comments, May–July 2012

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

Introduction

The following is the record of public comments received from a series of four community meetings held in May 2012 to initiate the start of consultation with the communities of Kaua'i for the preparation of a Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement (EIS) for a new municipal sanitary landfill and Resource Recovery Park (RRP). The written comments cited were received no later than the end of the requested comment period of July 30, 2012.

Note: Text in brackets “[]” are added to aid readability.

Meeting No. 1 – King Kaumuali'i Elementary School, Tuesday, May 22, 2012

- The full range of potential health impacts need to be addressed
- [There are] groundwater impacts
- [There is a] impact on property values
- Comment: I am disappointed that the road is in a separate EIS from the landfill they need to be discussed together
- Cultural impacts need to be carefully addressed
- Social and economic impacts
- Toxic fluids produced by the landfill need to be addressed
- The impacts of flooding on the site and any runoff issues that could occur, especially how to prevent toxic runoff in view of the wetness of the area and the potential for global warming to make it even wetter and increase the frequency and severity of storms
- Comment: I want to see these studies show that this landfill is in the smartest place on the island for it and I want the smartest people assuring me that there will not be any adverse impacts
- Who is liable for damage if the experts are wrong and things go wrong
- Comment: When I toured Kekaha I was surprised I expected it to be smelly - it was not smelly and they had a system to catch the leachate and it seemed to operate well
- If Ma'alo is the chosen site the studies need to look at the road issues and any positives the project might have for the community
- Question: Will there be public tours of the site? Can we get access to see for ourselves what the site is like?
- Concerned about the road and it's closeness to residences with the type of traffic it will have - those impacts need to be addressed
- The document [EIS] should show that it will not impact any neighborhood negatively

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

- Comment: There needs to be more outreach to non-English speakers at all levels of the community – persons with appropriate language skills should go door-to-door with handouts in the appropriate languages
- Question: How do we know that what we say tonight will change anything?
- Comment: You need to bring large topo[graphic] maps to the meetings so we can really see the site and the topography
- If we continue with the focus of reuse and recycling of waste, we may not need a landfill - this alternative should be considered in the EIS
- Question: Why such a large site? [commenter referring to the Ma'alo landfill site] Answer: Because small sites are more costly to develop
- Watersheds and ocean reefs are dying putting the landfill in a water catchment area is not a good idea not just for the nearshore waters and reefs, but for our fisheries – these issues need to be addressed
- Please include the list of all sites looked at in your documents for meetings
- Comment: Requirements such as stores taking back electronic waste should be strongly enforced to reduce the waste stream also more education on waste stream reduction for the public needs to be provided in the County
- Roads must be part of the process and include all access issues - should also look at the growth potential that the road would create for other public facilities and uses within the corridor
- Look at a smaller [landfill] footprint based on the push for recycling and reuse – how big do we really need this site to be?
- An incineration alternative should be looked at
- Impacts on agricultural crops, their water supply and farmer access need to be addressed
- More education on how to reduce the waste stream needs to be a priority
- Impacts on the Tanaka pond need to be addressed
- Impacts on the pump house by the prison also need to be addressed
- Proximity to drinking wells needs to be addressed
- Odor issues need to be addressed
- What are the plans for the methane gas - will you collect and sell – these need to be addressed
- All road routes need to be looked at
- Question: Why is the Resource Recovery Park (RRP) not on state land next to the landfill?
- Question: Is Ma'alo going to be the site and nothing we say will change that? Answer: It is the preferred site but that has changed in the past
- Comment: Future press releases should include the website
- Comment: Neighborhood groups in potential siting areas should be contacted
- Show the residences on your maps so we can see the distances – this is an issue that needs to be addressed in the EIS

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

- Question: What is the status on the RRP feasibility study? Answer: The draft should be out in August [2012]
- Studies should note the benefits of a landfill
- Cultural resource issues that were raised in the siting study meeting should be addressed
- Comment: This feels like last meetings and that we are just doing it over again
- Shouldn't the RRP be sited closer to an area where things can be shipped out since we do not process on this island – should address this in the EIS
- Documents should clearly discuss costs
- How does it work between the RRP and landfill as regards timing, and materials flow etc. – this needs to be addressed
- Need to make sure that the information used for these studies and landfill planning is based on current waste stream data reflecting the increase in recycling and reuse and our change in lifestyle
- Need to assume in design that we continue to do better in recycling and reuse and therefore our landfill needs decrease
- Need to discuss a MRF [Materials Recycling Facility] program
- Flora and fauna studies need to occur
- Impacts of the site on tourism and view plains
- Comment: Need to see all of these questions answered in a way that the answers are easily connected to the questions not buried in a document and hard to find or link to the questions
- Documents need to consider that this might not be the right site
- Consider accepting comments by e-mail
- Drinking water issues
- Comment: Best site in my opinion is to go back to Kekaha
- Who pays for the road needs to be addressed
- [There are] Dust issues

Meeting No. 2 – Kekaha Neighborhood Center, Wednesday, May 23, 2012

- The studies [undertaken for the EIS] should look at state of the art development for this site [Ma'alo]
- The document [EIS] needs to address what manner and style the county will use to address community concerns and these have to be addressed in a meaningful way
- The document [EIS] needs to show and assure that the landfill will be properly developed and lined
- Water table protection needs to be assured
- The document [EIS] needs to describe the way all potential contaminants will be dealt with

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

- The document [EIS] needs to describe the way all potential contaminants will be dealt with
- The documents [EIS and special studies] need to include a scenario for monitoring for the life of the site if indeed it is 264 years
- Need to address the length of time liners maintain their integrity if the life of the landfill is going to be this long
- What types of services and activities will be in the resource recovery park needs to be discussed
- Cover material issues need to be discussed such as if the cover material is transported to the site what contaminants might it have, i.e., is it going to be "dirty" dirt [contaminated soils] – if it is, how will it be cleaned up – if it has GMO [Genetically Modified Organism] contaminants what steps will be taken to make sure that dust does not fly off the trucks during transport and effect farmers along the transport route

A Clip Board¹ issue was raised by the community during the meeting involving a request for follow-up by the County of Kaua'i. The comment was: The County needs to come talk to the Kekaha community regarding how liability issues get handled after the Kekaha landfill closes.

Meeting No. 3 – Kīlauea Elementary School, Tuesday, May 29, 2012

- How will the methane be recovered – this needs to be discussed. Will it be considered a resource?
- Ways to minimize the methane production need to be discussed, it would be best if we could design a landfill with no or minimal methane production
- There should be discussion as to whether the site can accommodate an H-POWER [Honolulu Program of Waste Energy Recovery is a waste to energy incinerator] type facility
- If we achieve our goals of landfilling as little as possible the result might be a more toxic landfill. How do we deal with this
- There needs to be discussion how [and] what are the best ways to separate out the recyclables and recoverables to make sure that all are recovered and none end up in the landfill
- How do we deal with combustibles that cannot be recycled?
- Traffic flow needs to be discussed especially at the river intersect
- There needs to be discussion on whether all recycling facilities will be located at the RRP or will some be appropriately located in geographic areas outside of the RRP to be more convenient to communities such as green waste facilities
- Tipping fees aimed at promoting recycling should be addressed. The County should continue its action and support for zero waste

¹ An issue that does not pertain to the purpose of the meeting but requires follow-up.

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

- The report [EIS] needs to address cultural impacts, groundwater, surface water, flood plains, visual resources, ambient noise issues and biological resources
- Maps showing the complete project and maps for all alternative sites need to be included
- Discussion on any inconsistencies between the proposed action and the existing [County] General Plan and Regional Plans needs to be addressed
- Discussion on both direct and indirect impacts as well as cumulative and growth inducing impacts needs to be in the document [EIS]
- Look at appropriate decentralization of resource recovery especially green waste
- MRF [Materials Recycling Facility] should be located close to the harbor
- Traffic impacts need to be addressed

Meeting No. 4 – Kōloa Courthouse/Neighborhood Center, Wednesday, May 30, 2012

- What does cell mean?, you need to define the term and talk about how cells will be developed and any potential impacts on the water table
- What will happen to the dirt that is dug out at the site?
- Does having a central location more inland for recycling, etc., mean that there will be less shipping cost to transport?
- What kinds of efficiencies would you get if the MRF [Materials Recycling Facility] were closer to the harbor? - need to look at number of trips, gas consumed, and carbon loading issues – what are differences in these issues if it were located at the harbor instead of inland? - need to look at efficiencies of all elements of a MRF with relation to centralizing, decentralizing and all other alternatives - need to take into account convenience of location areas for users in order to increase user-ship - look at places people frequent
- Don't agree that the land is owned by the State and Grove Farm, my family has a claim to the land so the document [EIS] needs to look at land ownership issues - DLNR [Department of Land and Natural Resources] needs to act on the claim I filed
- Need to look at impacts on important or potentially important agricultural lands
- Why are the RRP site and the landfill site separated and why is RRP not also on state land
- Rainfall impacts need to be looked at
- Road and traffic issues need to be looked at - will it use an existing road or a new one?
- What is the cost benefit of maximum diversion of waste from the landfill?
- Cost benefit of banning all wet and dry organic matter from the landfill needs to be looked at - what are cost differences and the differences in potential environmental impacts if we do one or both of these?
- Need to look at any inconsistencies between the proposal and the [County] General Plan or Regional Plans

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

- Direct and indirect environmental and cumulative impacts as well as growth inducing impacts need to be looked at
- All of the statements made in the handout for this evening's meeting need to be addressed and the methodology behind the statements needs to be explained
- Impacts on drinking water need to be looked at
- Mitigation and alternatives to the proposed project and location of MRF need to be looked at
- Ground water, surface water, floodplains, cultural and biological resources, noise and cumulative impacts need to be addressed
- Technical, economic and environmental aspects as well as a no-project alternative need to be discussed
- Discussion on diversion policies and their impacts need to be in the document
- A discussion of the Kalepa Agricultural Park including number of acres and any impact this project will have on it or its expansion - as well as the delivery of pressurized water to the farmers
- Again I do not agree on the ownership of the land and what we are discussing tonight is only the County's plan for the site – my family as owners would like to see a graveyard for Native Hawaiians on the site
- What type of road infrastructure will be involved? - what are the development pressures created by access proposals? – who pays for roads and who benefits from the road construction?
- Will there be [a] County use bypass [road] from Kuhi behind Līhu'e to the site?
- RRP needs to be in the EIS - is Grove Farm building it, donating the land - how many acres is the site [and] what will be in the RRP?
- Need to discuss lost use opportunities for the land the landfill is developed on
- Where is Kalepa Agricultural Park in relation to the site? - what impact does the landfill have on it and future expansion plans
- What impacts does the landfill development have on Hawaiian Home Lands?
- There needs to be a discussion of the connection to the Harbor for shipping collected materials out
- What are your assumptions on diversion rates over the years?
- Is county zero waste policy being considered in project?
- What is the estimated cost of road infrastructure?
- Is there a communication/education aspect at RRP to develop and efficiently manage the site and to maximize the use
- Siting study needs to include where things will be located, travel measures and cost including calculations from trip origin to destination and how many trips
- Decentralized consideration for these facilities is not just about convenience but also about carbon loading, fossil fuel use and traffic impacts and these need to be considered

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

- Roadway behind Hanamaulu should be discussed to take traffic off the main road
- Recreational aspect that could be developed and served through providing new access route(s) for the landfill need to be discussed such as public access to Kalepa Ridge and Wailua River
- Socio economic impacts need to be addressed
- How will alternatives be identified for each RRP element?, what are the criteria for siting each element that lead to optimum operation of the element? – the description must have sufficient detail to allow comparison between the alternative placement being discussed and the placement at the proposed RRP
- [What are the] Wildlife impacts
- List of types of buildings, hours of operation and cost impacts needs to be in the studies
- Education needs to be a component of the RRP
- Alternative sites need to be evaluated

Written Comments 1 (Pamela Burrell)

- Traffic will affect the residents close by-in the Hanamaulu area_the flow pattern
- Move towards zero waste management
- Kaua'i's Solid Waste Management Plan is quite good. I urge us to follow it quickly.

Written Comments 2 (Patrick Gegen, Zero Waste Kaua'i)

County Policy Issues

- With a diversion goal of 70% in 10 years established in the recently passed Zero Waste Resolution, what are the design assumptions for annual disposal and ultimate capacity? If we can move aggressively to achieve a 50% or 60% diversion rate by the time the landfill is completed, Will we really require all that space? It seems it may be more appropriate to locate those elements of the Resource Recovery Park, which are appropriate, on the actual landfill site as it is State land. This would simplify integration of operations, reduce capital and operating costs and give the County more control over the operations of the various diversion options.
- Why isn't the entire site on state land?
- The EIS should include a discussion of diversion policies and the County's commitment to achieving the goals of the Zero Waste Resolution at the new landfill as part of the landfill design and construction, and operations.

Need for future policies

- The EIS should also address "external" County policies and programs necessary to maximize diversion and reduce the environmental impacts of the landfill. Programs such as: Pay As You Throw; Banning all wet organics; Commercial and Construction recycling mandates; and Bans on the sale specific materials such as styrofoam containers and disposable plastic water bottles should be an essential part of the approval of any disposal site.

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

- An evaluation should be made of the costs and benefits of maximizing diversion, while minimizing environmental and nuisance Impacts by establishing a policy of banning (maximizing the diversion of) all wet organic material, thereby minimizing methane generation and leachate toxicity. (see www.cool2012.com) with the goal of creating an Inert Residue Fill.
- The EIS should address providing funding and staff resources to achieve our diversion goals at a level comparable to what is to be spent on creating a new disposal facility. A tipping fee surcharge on all disposal should be established to generate funds for an aggressive outreach and education campaign.
- There have been concerns voiced regarding the toxicity of certain wastes. Especially what is left after the easily recyclable material is diverted. Reducing the impacts of potentially toxic leachate could be managed in a number of ways: First, Including a Hazardous Waste collection system for small commercial generators as part of the CHARM; Second, working with other communities and organizations nationwide to reduce the toxicity of many everyday products, and Finally, Implementing Extended Producer Responsibility legislation that would require the manufacturers to develop programs to take back their products. All these issues need to be discussed as alternatives to simply continuing to bury this material.

Resource System vs. Resource Park

- The EIS should address the alternative of developing an integrated Resource Recovery System (ie siting complementary facilities at various locations other than the Resource Recovery Park where appropriate) rather than locating all the diversion activities at a Resource Recovery Park (a single location adjacent to the landfill).
- The EIS should address the traffic impacts on Maalo Rd, especially at the intersection with Kuhio Hwy. In addition, there should be a discussion of the mix of residential and small commercial vehicles with the larger commercial haulers and County trucks. As an alternative: It seems more efficient, safer, and more logical to locate elements of the RRP such as the MRF, the Center for Hard to Recycle Material, and residential and small commercial waste and greenwaste drop sites in a more convenient location with better access to the harbor.

Concerns about runoff into neighboring farm land, the water table and the Wailua River.

- Is the liner system adequate – how many years?
- From what has happened on Oahu....A plastic-lined hole would create toxic fluids that will run off in heavy rains and wind. Global warming will only increase precipitation on the wettest place on earth.
- Are their plans for capturing methane for making energy?

Written Comments 3 (David Monasevitch for Kapaia Foundation)

- The Board of Directors of the Kapaia Foundation are unanimously opposed to the Ma'alo Landfill location mauka of Kalepa Ridge.

Written Comments 4 (David Monasevitch)

Summary of Public Comments Received
New Kauai Landfill and Resource Recovery Park
Public Comments May-July 2012

- I am adamantly opposed to the New Kaua'i Landfill proposed site called Ma'alo located behind Kalepa Ridge (mauka).
- It is too close to viable fresh water.
- It is on arable land – farmable land.
- It steals crown lands from the Hawaiian people
- It sets up a scam to pay Grove Farm.
- The down stream toxicity cannot be prevented or fixed once there's spill over.
- I propose using the land from Hanama'ulu Bay as the current Transfer station to the Kapule Hwy. Or the land N of Hanamaulu Bay along that Ridge.

Written Comments 5 (Nina Monasevitch)

- It is totally unacceptable to even consider putting a landfill anywhere near fresh water – as the propose Ma'alo site is.
- The Ma'alo site is Ag. land and should be used and or available as Ag. land.
- This proposed site will have a very negative impact on the Hanamaulu neighborhood.
- Have you consulted with Native Hawaiians about this site?
- I think a much better site for landfill is in the Puhi/Kīpū area – just south and inland from the Humane Society. This is away from neighborhoods & freshwater source.

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