Advisory Committee Memory

Mayor's Advisory Committee on Landfill Site Selection
County of Kaua'i
Department of Public Works

Meeting 3
July 17, 2008
1:00 pm - 3:00 pm

Attendance:

Committee Members: Gary Pacheco, David Sproat, Ted Inouye, George Costa, Mike Curtis, Mary J. Buza-Sims, Jose Bulatao, Jr., Michael V. Layosa, Edward Kawamura, Keith Nitta, Kenny Ishii, Palmer Hafdahl, Glenn Frazier, Kathleen Hurd
Members Absent/Excused: Diana Simao
County DPW: Troy Tanigawa, Emily Ishida
Consultant: Brian Takeda
Facilitator: Dee Dee Letts

The meeting began with a review of the major criteria categories established by the Committee. The consultant walked the Committee through the criteria and the Committee made changes to the criteria ranking as they deemed appropriate. (See attached criteria with track changes to view the changes made.)

There were two criteria that the consultant was unable to develop ranking tools for that would allow the criteria to be differentiated from one site to another. If there is no way to rank the criteria such that it can provide a differentiation from site to site, then each site would receive the same score making the criteria non-useable. The Committee was also unable at this meeting to come up with appropriate language that would accomplish this goal. The committee felt that these criteria were still important and asked whether members could come up with language between this and the next meeting. The criteria to be worked on were "post closure uses" and "collocation potential." The language and discussion from the Landfill Site Evaluation Datasheets document is present below:

19. The site should have adequate space for landfill needs as well as adjacent lands that could provide an opportunity for collocation.

    Note: This should also be stated as a goal since the selection of a site for composting, recycling, or other refuse related activity may require siting requirements that may be different from those for the selection of a municipal sanitary landfill.

And,

7. Potential final use of the site when the landfill is closed

   Note: Uses after closure would be contingent on decision makers and the community at some point in the future. Future surrounding land uses would also affect what the landfill could be used for, but would not necessarily be known in the present time.

The Committee decided that the following criteria from prior discussion would be noted as goals for the County to take into consideration and would be documented in the Committee's Report to the Mayor. There was also agreement that if language could not be developed for the previous two criteria, i.e., post closure use and collocation, then these would also become goals to be forwarded to the County.

- Availability of alternative funding opportunities, i.e. attractiveness of the site for public/private partnerships

- Maximum use of byproducts, i.e., provide for refuse source separation, and the recovery of methane gas for the generation of energy

The Committee agreed that with their suggested changes the criteria are final except for the two outstanding criteria which would be taken up at the next meeting.

The next meeting would review all criteria and the Committee would provide their weights to the criteria without the knowledge of the Consultant or the County. The next meeting was set for October 28, 2008 same time and place. The county announced that they are working on a field trip date and would announce it at the next meeting.

Attachment to Advisory Committee Memory

Meeting 3

Mayor's Advisory Committee on Landfill Site Selection
County of Kaua'i
Department of Public Works

1. Population density near the site[1]

All other things being equal, a site located near areas with a low population density would have less potential for impacting humans.

Point Value	Measure
0	More than 50 persons per square mile living within one-half mile of the site
2	Between 25 and less than 50 persons per square mile living within one-half mile of the site
4	Less than 25 people per square mile living within one-half mile of the site

Data Source: US Census data from census tracts (200_). Data for the tract including the landfill site was used, unless the site was adjacent to another, more populous tract. Population density for each tract has been published by the State Data Center, see Appendix _ .

How the point value of the criterion was determined: The point value is based on the more populous tract including or adjacent to the landfill site.

Complications obtaining the data: None.

Complications calculating the point value: None

Census tracts in which the potential landfill site is located or abuts:

##.##	Population Density is ###.# persons per square mile
##.##	Population Density is ###.# persons per square mile

Greatest population density: ###.# persons per square mile

Point Value:

[1] Based on average of 94 persons per square mile in the County of Kauai. This measure is based on 50% or approximately 47 persons per square mile as the starting point. State of Hawai‘i Data Book, 2007.

2. *Distance to nearest residence, school, hospital or non-compatable business*

A better site will be further from a residence, hospital, school or business. The distance is calculated from the property line of the landfill to the residence, school, hospital, or business.

Point Value	Measure
1	The nearest facility is located less than 0.25 miles from the proposed landfill property line
2	The nearest facility is located between 0.25 and 0.50 miles from the proposed landfill property line
3	The nearest facility is located more than 0.50 miles from the proposed landfill property line

Data Source: Residences, schools, hospitals, and businesses were identified using HIS real property database and maps. The distances between the proposed landfill site boundaries and the apparent nearest residence, school, hospital or business was calculated using County of Kaua‘i Geographic Information Service (GIS) maps. See Appendix _ .

How the point value of the criterion was determined: Distances were measured from nearest point on the boundary of the subject parcel and an estimate of the nearest edge of the proposed landfill site.

Complications obtaining the data: None. To assure consistency in using multiple maps, sites between which distances were measured were identified by Tax Map Key (TMK) identifiers.

Complications calculating the point value: None

Distance from the property line to the nearest residence: Adjacent to existing landfill property. Approximately ____ linear feet.

Address of residences:
1. ##-### _____ Highway
2. Subdivision development across _____ Highway, approximately ### feet
3. ##-### Street Name (### feet)

Distance from the property line to the nearest schools: ### feet

Address of schools:
1. Līhu‘e Elementary School, ##-### _____ Highway (### feet)

2. _____ High School, ### Street Name (### feet)
3. _____ School, ##-### Street Name (### feet)

Distance from the property line to the nearest hospital: Approximately 1,500 ft.

Name and Address of hospital: e.g., Wilcox Memorial Hospital

Distance from the property line to the nearest business: Approximately 1,500 ft.

Name and Address of business: Business Name

Type of facility that is closest: Residence

Point Value:

Deleted: 1

3. Displacement of residences and/or businesses including agricultural businesses

Use of vacant land for landfilling is preferred. Also, the taking of land in whole or in part that is used by a business is to be avoided as it could adversely impact the viability of the business.

Point Value	Measure
1	A residence and/or business would be displaced
3	No displacement

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Deleted: Less than Five businesses would be displaced

Data Source: Hawaii Information Service (HIS) maps and database (incorporating County of Kaua‘i Real Property and Planning Dept. data), see Appendix __.

How the point value of the criterion was determined: Parcel information for parcels including the potential landfill site collected. Points recorded based on information on dwellings and other structures.

Complications obtaining the data: None. The database indicates __ structures present. None are residences.

Complications calculating the point value: None

Number of residences displaced: None

Ownership: TMK (4) #-#-#-000, Name of Owner

Number of businesses displaced: None

Total number displaced: None

Point Value:

Deleted: 3

4. Archaeological and/or historical significance

Sites that have archeological and/or historical significance, or are near areas of significance may be more costly to develop.

The "site" is the landfill property.

Archeological and historical significance is determined by the status of listing of the site by the State Historic Preservation Division, Department of Land and Natural Resources.

Point Value	Measure
1	Known area(s) of significant archeological and/or historical importance have been listed in areas within 0.25 miles of the site
2	Known area(s) of significant archeological and/or historical importance have been listed in areas between 0.25 and 0.5 miles of the site
3	Known area(s) of significant archeological and/or historical importance have been listed in areas greater than 0.5 miles of the site

Data Source: See Appendix ___ .

How the point value of the criterion was determined: No sites are known within the proposed landfill area. Several sites are known within a quarter mile, however, yielding an assigned point value of _2_.

Complications obtaining the data: The majority of the project area has been reviewed in a prior archaeological inventory survey by _____. The presently indicated boundary of study appears to include a former _____ which has not yet been inventoried.

Complications calculating the point value: Straight-forward with the caveat that a portion of the project area may not have been previously studied.

1. Areas of known archeological and/or historical significance have been listed as being located on the site property: Yes or No
2. Areas of known archeological and/or historical significance have been listed as being located on property within a quarter mile of the site: Yes or No
3. Closest areas of archeological and/or historical significance to site boundary: No sites are known within the project area.

Point Value:

Deleted: 2

5. Cost of site acquisition

This is the cost of acquiring the ownership of the site.

The “site” is the landfill property.

The "cost" is the annualized cost of site acquisition amortized over the life of the landfill.

Point Value	Measure
1	The site is in the group with the highest site cost
2	The site is in the group between the lowest and the highest site costs
3	The site is in the group with the lowest site cost

Data Source: Tax Map Key records.

How the point value of the criterion was determined: The cost of the sites will be listed in order from highest to lowest cost. The list is divided into thirds, with the highest cost in the first third, the lowest cost in the third group, and the others in the second group.

Complications obtaining the data: The use of tax map key records is intended to provide a relative ranking between the sites and should not be construed to represent the anticipated actual cost of site acquisition.

Complications calculating the point value: None.

Cost of Site Acquisition:

1. Owner of property: _____
2. Privately owned: Yes/No
3. Cost of site or site valuation: _____

Life of Landfill: Approximately 30 years

Point Value:

Deleted: _2_

6. Ceded or Hawaiian Homestead Land

Land that is ceded or homestead land is considered less desirable for use based on potential for liability issues associated with the potential imposition of costs or loss of use.

The “site” is the landfill property.

Point Value	Measure
0	The site is ceded or homestead land
2	The site is considered ceded or homestead land
4	The site is not ceded or homestead land

Deleted: considered

Deleted: requires further investigation to determine if it is

Deleted: considered

Data Source: Tax Map Key records.

How the point value of the criterion was determined: The sites were evaluated to determine the initial ceded or homestead status of the site as provided in the tax map records of the State of Hawai‘i.

Complications obtaining the data: Tax map key records are initially used to determine the status of the land. Further investigation may be required to properly assess the status of the property to determine if it is ceded or homestead land.

Complications calculating the point value: Further assessment of the site is required to determine the ownership and title history of the property. This assessment is outside of the scope of this present investigation.

Point Value: __

7. Site distance from major highway

This is the distance of the site from a major highway serving as the major means of transporting refuse to the landfill site.

The “site” is the landfill property.

The definition for a major highway will be as defined by the State DOT.

The distance of the sites from the major highway will be listed in order from highest to lowest. The list is divided into three ranks.

Point Value	Measure
1	The site is in the group with the greatest distance from a major highway
2	The site is in the group between the least and the highest distances from a major highway
3	The site is in the group with the least distance from a major highway

Data Source: Google earth maps for identification of sites and major highways. Estimation of distances shall be as provided by the map distance measuring function.

How the point value of the criterion was determined: Comparing the distances in miles for each of the sites to a major highway.

Complications obtaining the data: None, however, the data indicates there is little variation among site distances to a major highway. Therefore, all sites are assigned a point value of ___.

Complications calculating the point value: See above.

Point Value: __

*8. Schools or hospitals along access road**

This criterion measures the number of schools and/or hospitals located on the access road to the proposed landfill site.

The “site” is the landfill property.

The “access road” is one that may be considered a county or state street or road but does not have a county, state or federal numerical designation.

Point Value	Measure
1	Access road passes more than one school or more than one hospital
2	Access road passes one school or one hospital
3	Access road does not pass any schools or hospitals

Data Source: HIS database plus preschool database. See Appendix _ .

How the point value of the criterion was determined: Identification of parcels using real property data, information about private schools, and preschool list.

Complications obtaining the data: Available preschool list was not comprehensive.

Complications calculating the point value: None

An access road is one that may be considered a county or state street or road and provides direct access to the site. The proposed landfill site is the property boundary.

1. Number of schools depending on, but not actually on the access road: 0
2. Number of hospitals depending on, but not actually on, the access road: 0
3. Total number of schools and hospitals: 0

Point Value: ___

* Access Road is defined as a roadway between a Highway or a Major Collector Street/Road that directly accesses the landfill site.

*9. Residential units or developments along access road**

This criterion measures the number of residences or residential units located on the access road to the proposed landfill site.

The "site" is the landfill property.

The "access road" is one that may be considered a county or state street or road but does not have a county, state or federal numerical designation.

Point Value	Measure
1	Access road passes more than five residences
2	Access road passes more than one residence
3	Access road does not pass any residences or residential developments

Deleted: Access road passes more than one residence or residential development

Deleted: Access road passes more than five residences

Data Source: HIS database plus tax map records. See Appendix _ .

How the point value of the criterion was determined: Identification of parcels using real property data.

Complications obtaining the data: _____

Complications calculating the point value: _____

Point Value: ___

* Access Road is defined as a roadway between a Highway or a Major Collector Street/Road that directly accesses the landfill site.

10. Consistency of the designation of the site for a landfill with the Kaua‘i General Plan

The County General Plan is a policy document that serves as a guide to help plan and improve the physical environment and quality of life for the people of Kauai, and to address the overall development of the island. The General Plan (GP) identifies the existing Kekaha Landfill Phase II as a public facility. Other landfill locations are not identified.

Deleted: *land use designation*

Deleted: The GP Land Use Maps indicate the following land use categories: Urban Center; Resort; Residential Community; Agriculture; Open; Park; Transportation; and Military. The categories were assigned to a ranking of desirability for a landfill as follows:

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Point Value	Measure
0	Land uses not consistent with General Plan
2	Land uses where a landfill may require a General Plan (Map) Amendment
4	Land uses where a landfill is consistent with the General Plan

Deleted: suitable for landfilling

Deleted: would not require a GP (Map) Amendment

Data Source: County of Kaua‘i General Plan.

How the point value of the criterion was determined: Location of proposed landfill sites compared to General Plan Land Use Maps.

Complications obtaining the data: None

Complications calculating the point value: None

Point Value: ___

11. Consistency of the site with the existing County land use zoning designation

The regulations for land development and the construction of buildings and other structures are defined in the County's Comprehensive Zoning Ordinance (CZO). The regulations and standards prescribed by the CZO promote development that is compatible with the Island's scenic beauty and environment and attempts to preclude inadequate, harmful or disruptive conditions that may prove detrimental to the social and economic well-being of the residents of Kauai.

The major County Zoning Districts include: Residential (R), Resort (RR), Commercial (C), Industrial (I), Agriculture (A), Open (O), Special Treatment (ST), and Constraint (S). The categories were assigned to a ranking of desirability for a landfill as follows:

Measure	CZO (Zoning) Designation	Point Value
The siting of a landfill is clearly inconsistent with the underlying zoning classification	Residential (R), Resort (RR), Special Treatment (ST)	0
The siting of a landfill would require a Change of Zone and/or other land use entitlement	Commercial (C), Agriculture (A), Open (O), Constraint (S)	2
The siting of a landfill would not require a Change of Zone	Industrial (I)	4

Point Value	Measure
0	The siting of a landfill is clearly inconsistent with the underlying zoning classification
2	The siting of a landfill would require a Change of Zone and/or other land use entitlement
4	The siting of a landfill would not require a Change of Zone

Data Source: County of Kaua‘i Comprehensive Zoning Ordinance

How the point value of the criterion was determined: Location of proposed landfill sites compared to the Comprehensive Zoning Ordinance (zoning maps).

Complications obtaining the data: None

Complications calculating the point value: None

Point Value: ___

12. Consistency of the site with the existing State Land Use District designation

The State Land Use Law (Chapter 205, Hawai‘i Revised Statutes(HRS)) provides for the classification of all land in the State of Hawaii into one of four Districts: Urban, Rural, Agricultural, and Conservation. The categories were assigned to a ranking of desirability for a landfill as follows:

Measure	State Land Use Designation	Point Value
The siting of a landfill would require a Land Use District Boundary Amendment or State Special Use permit	Agricultural, Rural, Conservation (a limited portion of the site is within this district)	2
The siting of a landfill is consistent with the State Land Use District Classification	Urban	4

Point Value	Measure
0	The siting of a landfill is clearly inconsistent with the underlying land use district classification
2	The siting of a landfill would require a State Land Use District Boundary Amendment or State Special Use permit
4	The siting of a landfill is consistent with the State Land Use District Classification

Data Source: Chapter 205, HRS

How the point value of the criterion was determined: Location of proposed landfill sites compared to Hawai‘i GIS maps identifying the State Land Use Districts.

Complications obtaining the data: None

Complications calculating the point value: None

Point Value: ___

13. Location of site relative to the Underground Injection Control (UIC) Line

This criterion measures whether a site is located over the Underground Injection Control (UIC) Line administered by the State DOH for purposes of protecting groundwater resources.

The property line is used as the boundary for comparing the site to the UIC Line.

Point Value	Measure
1	The site is located inside of the UIC Line
2	The site is located coincident with the UIC Line with the line passing through the property boundary of the site
3	The site is located outside of the UIC Line

Deleted: mauka

Deleted: makai

Data Source: Review of State of Hawai‘i, DOH UIC Maps and consultation with the County of Kaua‘i, Department of Water Supply

How the point value of the criterion was determined: Based on location of site outside the UIC zone in combination with DWS hydrologist confirmation for value and use of site for future water development.

Complications obtaining the data: None

Complications calculating the point value:

The site is considered the property boundary.

1. Site located mauka of the UIC Line: Yes/No
2. Site located coincident with the UIC Line with a portion of the site makai of the line: Yes/No
3. Site located makai of the UIC Line: Yes/No

Point Value: ___

14. Proximity to surface water

This criterion measures the location of the site relative to surface water resources located near the site. Sites that are closest to surface water sources, i.e., shoreline, coastal, or inland streams, whichever is closer, would be less desirable.

The property line is used as the boundary for locating the distance of the site from surface water resources.

Point Value	Measure
1	The site is located 0.25 miles or less from surface water resources
2	The site is located between 0.25 and 0.50 miles from a surface water resource
3	The site is located more than 0.50 miles from surface water resources

Data Source: State of Hawai‘i GIS maps for the identification of surface (inland or coastal) water resources and TMK map layers for the identification of the planned landfill property boundaries.

How the point value of the criterion was determined: The distance from the footprint boundary to the nearest surface water resource was determined using the distance calculation feature in the GIS program, ArchGIS, version 9.2. The closest distance was used.

Complications obtaining the data: None

Complications calculating the point value:

1. Name of Water Body: _____.
2. Distance from the site to the nearest surface water resource: _____ .

Point Value: ___

15. Flora and fauna habitat

If the site is habitat for rare, threatened, or endangered flora and fauna on or near it, it is less desirable.

The "site" is the property boundary of the landfill.

Point Value	Measure
0	Flora and fauna habitat located less than 0.25 miles from the site with rare, threatened or endangered species indicated
2	Flora and fauna habitat exist between 0.25 and 0.50 miles from the site
4	Flora and fauna habitat exist at distances greater than 0.50 miles from the site

Deleted: 1

Deleted: 3

Data Source: U.S. Fish & Wildlife Service Critical Habitat Maps for Kauai, including threatened and endangered plants and elepaio (bird). See Appendix ___.

How the point value of the criterion was determined: Using critical habitat maps and measuring distance from the habitat to the boundary of the landfill site.

Complications obtaining the data: None

Complications calculating the point value:

The site is considered the property boundary.

1. Flora and fauna habitat has been designated on the site: Yes/No
2. Flora and fauna habitat is located within one mile of the site boundary: Yes/No
   a. Name of flora and fauna habitat: _____
   b. Distance from site boundary to flora and fauna habitat: _____
   c. Name of flora and fauna habitat: _____
   d. Distance from site boundary to flora and fauna habitat: _____
   e. Name of flora and fauna habitat: _____
   f. Distance from site boundary to flora and fauna habitat: _____
3. Closest flora and fauna habitat to site boundary: _____
   a. Distance from site boundary to flora and fauna habitat: _____

Point Value: ___

16. Annual precipitation

The less rainfall a site has, the less liquid produced that has to be managed, making that location a better site.

The “site” is the landfill property.

This criterion uses isohyets from the Atlas of Hawaii, 1998.

Point Value	Measure
1	Greater than 60 inches annual precipitation
2	20 to 60 inches annual precipitation
3	Less than 20 inches annual precipitation

Data Source: Atlas of Hawaii, 2nd & 3rd Editions, University of Hawaii Press, 1983 & 1998.

How the point value of the criterion was determined: Comparison of the midpoint of the landfill site with the location of the nearest isohyet(s).

Complications obtaining the data: Interpolation between isohyets is sometimes required when the site does not fall exactly on a particular isohyet.

Complications calculating the point value: None

Location of site relative to isohyet: _____

Point Value: ___

17. Prevailing Wind direction relative to populated areas

A site located so the trade winds blow away from populated areas would be superior to one where winds blow toward populated areas.

The “site” is the landfill property.

Populated areas are defined as locations with a collection of housing units comprising a subdivision; a delineated housing development; a group of homes located along a street or road; or a visitor serving facility, e.g. hotels.

Point Value	Measure
1	The prevailing wind blows from the site toward populated areas
2	Not applicable
3	The prevailing wind does not blow from the site toward populated areas

Data Source: Atlas of Hawaii, 2nd & 3rd Editions, University of Hawaii Press, 1983 & 1998.

How the point value of the criterion was determined: Comparison of wind direction data, site maps, and GIS maps delineating population centers on the Island of Kaua‘i.

Complications obtaining the data: No site specific data available.

Complications calculating the point value: No site specific data available on the incidence over time of prevailing winds (trade or Kona winds).

Location of populated areas immediately downwind of trade or Kona generated winds:

Name of site 1
Name of site 2

Point Value: ___

18. Haul distance from major municipal solid waste generation areas

This is the distance from the closest refuse transfer station serving as the starting point for trips to the identified alternative landfill site.

The “site” is the landfill property.

The locations of the transfer stations is from the County of Kaua‘i, Department of Public Works.

The distances will be listed in order from highest to lowest. The list is divided into three ranks.

Point Value	Measure
1	The site is in the group with the greatest distance from a refuse transfer station
2	The site is in the group between the least and the highest distances from a refuse transfer station
3	The site is in the group with the least distance from a refuse transfer station

Data Source: State of Hawai‘i GIS database maps for identification of potential landfill sites and refuse transfer stations (by street address). Estimation of distances provided by the map distance measuring function.

How the point value of the criterion was determined: Comparing the distances in miles for each of the sites to the closest refuse transfer station.

Complications obtaining the data: _____

Complications calculating the point value: _____

Point Value: __

19. Adequacy of site drainage

The ability of the landfill to drain surface water naturally from on and off-site tributary areas reduces engineering and design associated costs. Sites with soils conducive to good drainage are preferred (based on installation of a landfill liner system that meets or exceeds federal and state standards).

Point Value	Measure
1	Fine grained soils or clays
2	Sand and/or gravel, some fine grained soils identified
3	Coarse grained soils

Data Source: The ability of a landfill to drain water is a function of the surface soils. Soil information was obtained from the Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (Soil Conservation Service, U.S. Department of Agriculture, 1972).

How the point value of the criterion was determined: The particle size of the prevalent soil types determined the point value. Coarser grained soils (sands and gravels) provide good drainage and receive a score of 3. Finer grained materials (e.g. silts and clays) restrict the movement of water and receive a score of 1. A combination of fine and coarse grained materials (allows some drainage but at a slower rate) receives a score of 2.

The soil association for the general area is the _____ land association. A soil association is an area of like soils. The _____ land association comprises the majority of the site and consists of _____ land.

The site is covered by the _____ association. This association consists of _____ textured subsoil or underlying material; located on coastal plains.

The site is comprised of many soil types, mainly _____: e.g.,

Rock land (rRK)
The rock land occurs on the majority of the project site. In rock lands, exposed rock covers 25 – 90 percent of the surface and contains very shallow soils.

Stony steep land (RSY)
Stony steep land occurs at the northeastern portion of the site and consists of a mass of boulders and stones, deposited by water and gravity, on the side slopes of drainageways. The slopes range from 40-70 percent. Stones and boulders cover 50-90 percent of the surface. There is a small amount of soil among the stones that provides a foothold for plants. Rock outcrops occur in many places.

Lualualei extremely stony clay, 3-35 percent slopes (LPE)
This soil occurs at the southwestern portion of the site and is typical on talus slopes on Oahu. In most places, the soil is moderately sloping to steep. This soil is similar to Lualualei clay (Lua), except there are many stones on the surface and in the profile. Runoff is medium to rapid, and the erosion hazard is moderate to severe. Soil is typically used for pasture.

Complications obtaining the data: _____

Complications calculating the point value: _____

Point Value: __

20. Cost of development

The cost of development includes scale facilities, maintenance shops, cell preparation, drainage, bringing utilities to the site, excavation of the initial operating area, access road purchase and improvements (if needed), and other infrastructure related costs.

The “site” is the landfill property.

The “cost” is the annualized cost of site development amortized over the life of the landfill at approximately 30 years.

The cost of the sites will be listed in order from highest to lowest. The list is divided into thirds, with the highest cost sites in the first third, the lowest cost sites in the third group, and the others in the second group.

Point Value	Measure
1	The site is in the group with the highest development cost
2	The site is in the group between the lowest and the highest costs of development
3	The site is in the group with the lowest development cost

Data Source: Estimated unit costs.

How the point value of the criterion was determined: Unit costs multiplied by the estimated access road length or other factor to obtain the total cost for the item.

Complications obtaining the data: Many unknown local conditions that make the estimating subject to large changes when detailed on-site engineering is performed.

Complications calculating the point value: _____

Assumptions used in the cost estimating:

1. Roadways are 25 feet wide and designed to carry heavy trucks.
2. Preliminary costs for drainage include concrete work, excavation and grading.
3. Building costs do not include site preparation.
4. The estimates for utilities are based on experience with prior projects in open areas with no major difficulties with terrain or environmental concerns.
5. The length of utility line is equal to the length of on-site and off-site roads.

Life of the Landfill: 30 years

Cost of site development per year of life: $XXXXXXX

Group which includes the cost of development of this site: Bottom third

Basis for estimated costs in 2008 dollars:

No.	Item	Unit Cost	Units	Unit	Cost
1	Office Building	$75	3,000	sf	$225,000
2	Maintenance Building	$60	15,000	sf	$900,000
3	Scale	$250,000	1	ea	$250,000
4	On Site Road	$100		lf	
5	Off-site road	$100		lf	
6	Utilities	$300		lf	
7	Drainage improvements cost	$1,000		lf	$0
8	Total development cost				$1,375,000
9	Cost per year of life				$45,833

Rough Estimate of Development Cost, Summary of All Sites in 2008 dollars:

	Years Life	Total Dev Cost	Annual Cost	Group	Point Value
Kekaha Mauka	30	XXX	XXX	XXXX Cost	X
Pu'u O Papai	30	XXX	XXX	XXXX Cost	X
Umi	30	XXX	XXX	XXXX Cost	X
Kōloa	30				
Kīpū	30				
Maalo	30				
Kumukumu	30				
Kalepa	30				

Point Value: _-_

21. Cost of operations

The cost of operations includes the cost of equipment, operations, personnel, leachate and gas management, the availability and suitability of daily cover, cost of liner material, and other services needed to properly operate and maintain a landfill.

The “site” is the landfill property. The “cost” is the annual cost of site operations divided by the life of the landfill in years.

The cost of the sites is listed from highest to lowest cost. The list is divided into thirds, with the highest cost sites in the first third, the lowest cost sites in the third group, and the others in the second group.

Point Value	Measure
1	The site is in the group with the highest operations cost
2	The site is in the group between the least and the highest operations cost
3	The site is in the group with the least operations cost

Data Source: Estimated area of the landfill and comparative operations cost for the Kekaha Landfill (the only operational municipal solid waste disposal site on the island) to derive a unit cost per square foot.

How the point value of the criterion was determined: The cost of operations included the cost of the liner for the entire site. The liner cost was divided by the years of site life.

Total Cost of Operations	XXXX
Annual Cost of Operations	XXXXX
Group which includes the cost for this site	XXXXX
Point Value	X

Complications obtaining the data: _____

Complications calculating the point value: _____

Point Value: _.5

22. Availability of utilities (water)

Utility data for water, wastewater, power, and telephone service are not readily available for all sites under this evaluation. However, the provision of water supply is essential to the operation of a landfill. It is used for dust control, irrigation, fire fighting, and related purposes necessary in order to operate a landfill. For this reason an evaluation based on estimated water availability is provided.

Water availability is based on the evaluation of each site with the County of Kaua'i Department of Water Supply. The distance from the terminus of the water supply line to the site is measured to determine the length of connection (construction effort) required to provide water. The list produced for each site is ranked from highest to lowest effort and is divided into thirds. Sites that have the greatest requirement, in terms of new construction, are placed in the first third. The lowest effort sites are in the third group, and the other sites are in the second group. If a new water supply source must be developed the site is placed in the first third.

Point Value	Measure
1	The site is in the group with the highest construction cost
2	The site is in the group between the least and the highest construction cost
3	The site is in the group with the least construction cost

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Data Source: Information on both transmission and source data are from the County of Kaua'i, Department of Water Supply (DWS). Basic water supply requirements are extrapolated from the existing Kekaha Landfill.

How the point value of the criterion was determined: The availability of water supply was first determined for the site from the DWS. The end of the transmission line was measured to the property boundary of the "site." Installation of water line based on the measured distance was tabulated and compared. Sites that require the development of source water and transmission lines are assigned to the highest construction effort group.

Complications obtaining the data: _____

Complications calculating the point value: _____

Point Value: _

Comparison of sites:

Alternative Site	Distance From Transmission Line	New Source Required?	Rank
Kekaha Mauka	XXX	XXX	X
Puʻu O Papai	XXX	XXX	X
Umi	XXX	XXX	X
Kōloa			X
Kīpū			X
Maalo			
Kumukumu			
Kalepa			

23. Access to fire protection

This access to service is measured by the estimated time identified by the County of Kaua‘i Fire Department in responding to a fire at the landfill site.

The “site” is the landfill property.

Point Value	Measure
1	Time for responding is greater than 6 minutes
2	Response time is between 3 and 6 minutes
3	Time for responding is less than 3 minutes

Data Source: County of Kaua‘i Fire Department personnel, _____ Fire Station No. _____ .

How the point value of the criterion was determined: Interview with Fire Department personnel, Date.

Complications obtaining the data: None. Fire stations had to be identified for each site and contacted individually.

Complications calculating the point value: None.

Point Value: __

24. Availability of existing access roadway from major highway or collector street/road

Access to the site is based on one of three conditions: (1) no existing access road or trail; (2) limited site access provided but not for the entire length required to access the site; and (3) access road available but requires improvements.

The “site” is the landfill property.

Point Value	Measure
1	No access road available, construction required
2	Limited site access, the entire access does not meet county standards, construction required
3	Existing access roadway that meets county standards is available to the site from a major highway, minimal construction improvements required

Deleted: but not for the entire length required to gain access to the site

Data Source: State of Hawai‘i GIS maps, Google Earth database, and County of Kaua‘i map information.

How the point value of the criterion was determined: Based on availability of site trails or roads as identified on existing mapping sources.

Complications obtaining the data: _____

Complications calculating the point value: None.

Point Value: _-_

25. Proximity to parks and recreational facilities

A site located near a park or recreational facility would be less desirable as these uses are typically located in areas that are valued for their more pristine environment. The “site” is the footprint of the landfill.

Point Value	Measure
1	The site is located 0.25 miles or less from a park or recreational area
2	The site is located between 0.25 and 0.50 miles from a park of recreational area
3	The site is located more than 0.5 miles from a park or recreational area

Data Source: State of Hawai‘i GIS maps, Google Earth database, and County of Kaua‘i map information. A parks layer is created by selecting the parcels which have TMKs matching the TMKs maintained in the County's parks database. Beach access parcels are added to this layer. For parcels where a School and Park exist, a line has been added to denote the boundary of the park. Other edits are made to correctly reflect the park boundaries as they appear in the County records.

How the point value of the criterion was determined: The distance from the footprint boundary to the nearest park or recreational facility was determined using the distance calculation feature in the GIS mapping program, ArchGIS. The closest distance was used.

Complications obtaining the data: _____

Complications calculating the point value: None.

Distance from the site to the nearest park: _____

Name of park: _____

Distance from the site to the nearest recreational facility: _____

Name of recreational facility: _____

Closest distance: _____

Type of facility that is closest: _____

Point Value: _-_

26. Landfill Capacity or Site Life

A longer site life is advantageous to future planning requirements and minimizes the need to site additional facilities.

Site life means the number of years the site could accept waste at the current rate of landfill disposal. The number of years is based on disposal of _____ cubic yards of material per year (in–place volume). This volume reflects the amount of waste (as compacted), the industry standard allowance for cover, and a 20 percent allowance for growth in the waste disposed over the life of the landfill. It uses the tonnage of waste disposed of at the Kekaha Landfill in fiscal year 2006/2007 as the base.

Point Value	Measure
1	The has a life expectancy of less than 25 years
3	The site has a life expectancy of 25 years or more

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Data Source: Kaua'i Municipal Solid Waste Landfill Siting Study, 2001, and New Kaua'i Municipal Solid Waste Landfill, Kalepa Site Evaluation, 2002, both reports by Earth Tech, Inc. State of Hawai'i GIS maps were used as necessary to obtain additional data.

How the point value of the criterion was determined: The life of the landfill was recalculated to reflect current landfilling practice. The area was recalculated to be consistent with the parcel boundaries. The volume was calculated assuming a 100-foot buffer around the site boundary, 10 acres for infrastructure facilities, no excavation, and filling to the surrounding natural grade.

Complications obtaining the data: _____

Complications calculating the point value: None.

Point Value: _-_