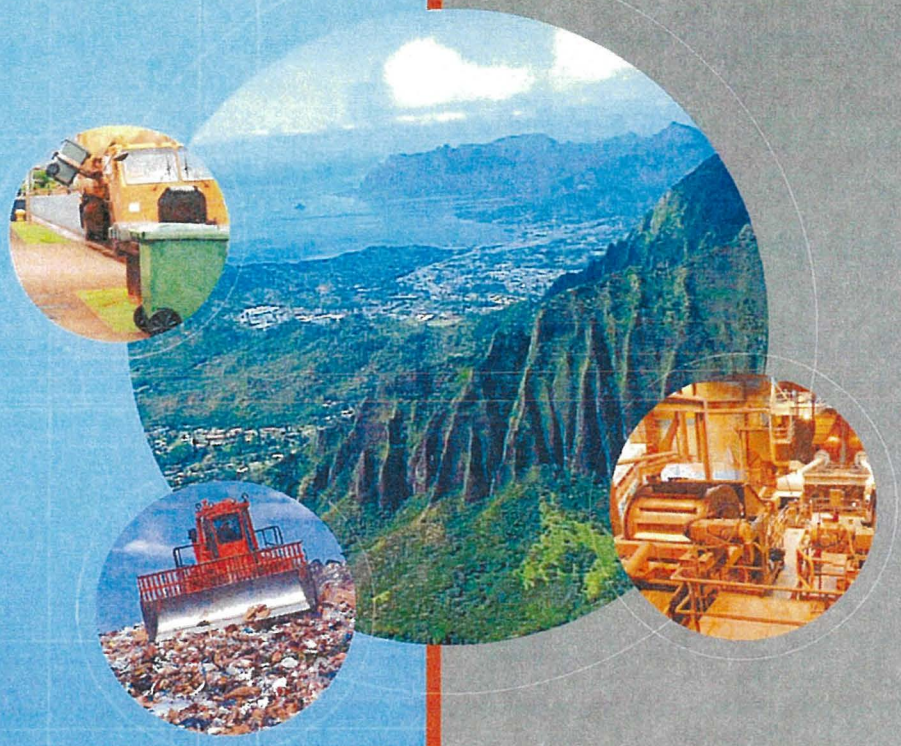


PREPARED FOR:
CITY & COUNTY OF
HONOLULU, HAWAII

# Integrated Solid Waste Management Plan Update

**October 2008**

R·W·BECK

**Mind Powered:** Insight with Impact.

**EXHIBIT K144**

# Section 11
# Facility Siting Strategy

## 11.1 Purpose

The purpose of the siting strategy is to provide a fair and objective process by which solid waste management facilities may be sited. This strategy seeks to address the concerns of all interested parties. The final decision on sites for solid waste facilities will rest with the Mayor and the City Council.

According to Section 342G-27 of the HRS, all City solid waste management plans shall contain a siting element for solid waste management facilities used for source reduction, recycling, bioconversion, and disposal facility capacity. Revisions will be made to the siting strategy to incorporate changes in law.

Provided below is a summary of the most recent solid waste facility siting activity undertaken by the City in 2003 to identify potential new landfill sites. Following this summary, the Plan describes the recommended process in detail that the City plans to use in the future for the siting of solid waste facilities.

The siting procedures that follow can be applied to any solid waste facility. However, as the location of the H-POWER expansion, in-vessel compost and transfer stations are already determined, this Section addresses the siting for additional landfill capacity. The recycling to energy and recycling to materials programs that are presently being pursued by the City, and the City's ability to direct waste to these facilities, will significantly reduce the amount of waste to landfill by 2013. Interim shipping of waste is also being considered, while these facilities are constructed. As noted previously, the remaining non-recyclable waste, residue from recycling operations including ash from H-POWER, and C&D materials may be disposed in separate landfills. The siting procedures proposed would provide new landfill capacity to year 2030 and beyond.

## 11.2 Landfill Siting Activities

In 2003, the City initiated a siting process associated with identifying potential new landfill sites. The State Land Use Commission issued a decision in May 2003 that the Landfill was limited to five additional years of active operations. As a result, the Mayor appointed a special advisory committee, Landfill Siting Committee (Committee), to address the siting of a new landfill. The Committee was composed of 15 members including, but not limited to, community representatives from various geographic areas of Oahu, the business community, and the DOH.

The Landfill Siting Committee was charged with the following tasks:

- Identify potential site locations;

- Develop siting criteria that includes local considerations;
- Apply the federal, state, and local criteria to develop a shortlist of sites; and
- Provide recommendations identifying sites for consideration for a new landfill.

The Committee used a systematic siting process consistent with best management practices used in the solid waste management industry. The City attempted to represent a cross-section of the community and its stakeholders through appointment of Committee members representing geographic areas where potential sites were being considered. Moreover, the City appointed members representing the business community and the state regulator of such facilities. The business community has a significant interest in ensuring that the operation of an environmentally prudent, reliable, and economically sound solid waste management system is maintained. Including a representative from the State Department of Health, at minimum, offers the opportunity for timely feedback and perspective as the site selection process is moving forward.

The process used by the Committee to identify a list of potential sites included applying a broad set of criteria. These criteria represented both exclusionary criteria and local considerations which is consistent with the need to ensure that the outcomes address regulatory issues and local preferences.

The Committee began with the 45 previously identified sites. Committee members were asked to add additional sites to this initial list for consideration. The sites were located throughout Oahu. The Committee applied the agreed upon criteria at two levels. First, the Committee applied a set of criteria representing federal EPA criteria, Honolulu Board of Water Supply criteria as it relates to the protection of potable water, and minimum landfill capacity criteria. Then, the Landfill Siting Committee applied local criteria specifically developed by the Committee. These criteria were grouped into the following categories:

- Community;
- Environmental and Land Use;
- Economic;
- Technical; and
- Other Considerations.

The Committee's local criteria were applied using a quantitative process that included both weighting the various criteria as it relates to relative importance and ranking the various sites as it relates to the criteria. The process was a double blind process where the community did not know the identity of the site as they applied criteria and the consultant did not know the committee's weighting of the various criteria as they applied them to the sites. This process resulted in four sites composing the shortlist of possible sites recommended to the Mayor and City Council. The process also identified Waimanalo Gulch, the existing site, as the best alternative for further development since when all criteria were applied, it ranked higher than the other four sites.

On December 1, 2004, Honolulu City Council adopted Resolution number 04-348,CD1, FD1, which selected the Waimanalo Gulch Landfill as the site for the City's landfill because of the following conditions:

- The site had over 15 years of remaining capacity;
- The City already owns the property and the infrastructure;
- Development of other sites would require significant capital investment;
- The City had a 15-year management contract for this site;
- This was the only site where the costs and revenues were already known; and
- The landfill operator was committed to implementing improvements to landfill operations.

On August 31, 2005, Bill 37 (2005), CD1 was introduced at the Committee on Public Works and Environment. In that form, the Bill would have limited the type of material that could be disposed at the Waimanalo Gulch Landfill after July, 2008. From that date onward, the only materials permitted to be disposed at the Landfill would include (1) processed solid waste; (2) any other material of a non-hazardous nature that cannot be converted into processed solid waste solely because such a conversion method does not exist; and (3) any non-hazardous material that must be disposed of to protect the health and safety of the public due to an emergency or disaster declared by the City Council. On February 13, 2006, the City Council passed Bill 37 (2005) CD2, which provided among other things that it was in the best interest of the City to no longer deposit waste at the Landfill and close the facility in accordance with an approved closure plan after May 1, 2008.

On February 28, 2006, the Mayor vetoed Bill 37, (2005) CD2 as it would significantly impair the City's ability to manage solid waste and referred the City Council back to Resolution 04-348, CD1, FD1 which was adopted in 2004. A copy of the Mayor's veto message and resolutions can be found in Appendix E.

As discussed in Section 8, the City presently has authorization to utilize the Landfill until November 1, 2009, and plans to work with the State Land Use Commission to obtain the land use approvals necessary to continue using Waimanalo Gulch beyond that point in time. The City intends to demonstrate to the LUC its integrated solid waste management program, which will significantly reduce the quantity of waste to landfill.

A more detailed discussion of the steps in siting any type of solid waste facility is provided below to serve as a blueprint for future solid waste facility siting processes. The 2003 process described above is alluded to when applicable.

## 11.3 Siting Principles

Flexibility is critical to the siting process. While affording this latitude, the following principles will be the basis for applying the process moving forward in the future:



EXHIBIT K144

- The site evaluations will preclude areas west of Makakilo based upon an Administration policy that no new municipal landfills will be located on the Leeward Coast of Oahu;
- Site selection must be a process fully open to all in order to foster trust in the process;
- The potential impact upon property values and quality of life both for individuals and neighborhoods adjacent to a solid waste facility must be fully acknowledged;
- Open discussions are the preferred method to resolve issues;
- Prior to any decision, there must be full research and disclosure of all facts and proposals;
- The need for the proposed facility, its impacts, and the results of not siting the facility must be considered by all parties in the discussions;
- The City must plan, and act, in advance of need, i.e., avoid crisis management. This may include hiring a public outreach firm;
- It is essential that all parties have access to information and that a facilitator be used for dispute resolution when direct discussions are unsuccessful;
- The word "public" has many, often separate, meanings including governments, neighborhoods, and individuals, but all types of interests should be considered; and
- All final decisions shall rest with the Mayor and City Council.

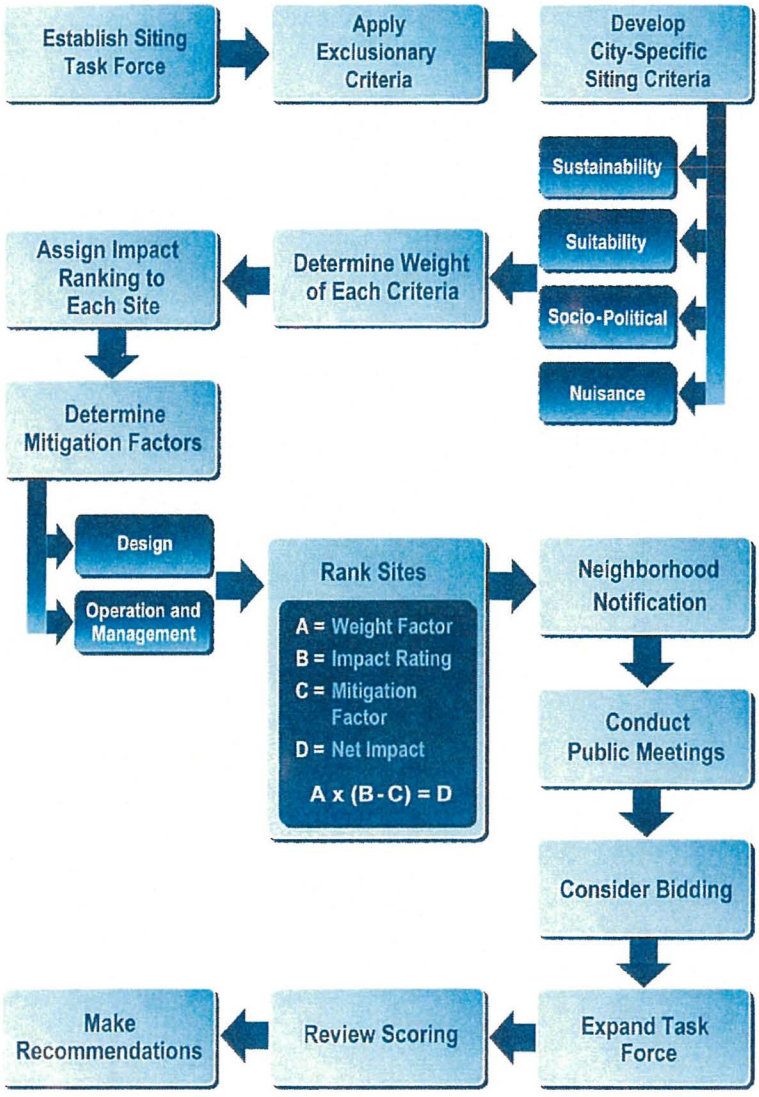
## 11.4 Site Selection Process

The proposed site selection process will be comprised of the four following stages:

- Establish a Siting Task Force;
- Identify "Excluded Sites" and Develop City -Specific Siting Criteria;
- Define Weighting Criteria and Rank Available Sites; and
- Select Preferred Sites.

Figure 11-1 presents an overview of the process.

Figure




11-1: Siting Strategy Process

## 11.4.1 Stage 1 – Establish Siting Task Force

Stage 1 encompasses the formation of a Siting Task Force (Task Force) which will conduct the siting process. In addition to members of the Task Force being appointed, decisions regarding how and who will conduct any necessary mediation will be made, and the pertinent preliminary information that the Task Force will use to make its recommendations will be compiled. Care



EXHIBIT K144

should be exercised in developing the Task force to assure that it is well rounded and that no one special interest or community has more influence then another.

The City will provide the Task Force with support and assistance in making site recommendations for facilities through extensive public involvement. The Mayor will appoint the members of the Task Force. The Task Force will include, but not be limited to, representatives of the following:

- City agency representatives, such as the DPP and Office of Economic Development;
- Representatives from City communities;
- Environmental organizations;
- Honolulu cultural groups;
- Business community;
- Public;
- Waste industry representatives;
- Solid Waste Advisory Committee representatives; and,
- State Department of Health representative(s).

These individuals will comprise the core of the Siting Task Force. The City will provide staff assistance and consultants as required.

The 2003 siting process was relatively consistent with the approach described above.

## 11.4.2 Stage 2 – Identify "Excluded" Sites and Develop City-Specific Siting Criteria

### 11.4.2.1 General

During the implementation phase of the City's Solid Waste Management Plan, the City shall require the use of siting criteria for all new solid waste facilities. These criteria will assist in narrowing the number of possible general areas to potential sites for further consideration under Stage 3. The criteria are divided into exclusionary and City-specific categories.

### 11.4.2.2 Eliminate Excluded Sites

The exclusionary criteria (e.r.,HAR Section 11-58.1-13) are those that are mandated by the EPA and the DOH, as well the Honolulu Board of Water Supply (BWS) to protect potable water. City representatives will work with the DPP and use a Geographic Information System (GIS) to apply the exclusionary criteria to all areas of Oahu to eliminate these sites from further consideration. During the 2003 landfill siting process, only 16 sites were eligible for further consideration after exclusionary criteria were applied.



EXHIBIT K144

### 11.4.2.3 Develop City-Specific Criteria

The Task Force would then develop City-specific siting criteria for areas that are not excluded based on the EPA's,DOH's and BWS's siting requirements. The process of developing City-specific criteria will likely involve multiple meetings of the Task Force. These City-specific criteria will be applied separately for each site.

The City-specific criteria would be divided into four general categories: sustainability criteria; suitability criteria; socio-political criteria; and nuisance criteria. These criteria would be applied to all solid waste facilities. The specific criteria could include, but would not be limited, to the following:

#### Sustainability Criteria

- Endangered Species - Sites should minimize the affect on the habitat of known rare or endangered species.
- Screening - To the extent practical, natural screens such as trees and topography will be considered when selecting sites.
- Aquifer Location - Aquifers will be considered when locating facilities. The potential impacts on aquifer and public water supplies will be evaluated. In the 2003 siting process, the BWS provided direct input as it relates to protecting potable water sources.
- Air Quality – Sites should minimize adverse impacts on air quality. Such factors as buffer zone distances, natural air currents, prevailing winds, and facility design should be considered with relation to air quality especially for MSW conversion facilities, landfills and composting facilities.

#### Suitability Criteria

Suitability criteria encompass those aspects having to do with the location, size, shape, use, and accessibility of the site.

- Site Location - While still satisfying other criteria, the facility should be located as close as possible to the waste generation areas to minimize the transportation of waste. For areas with widely dispersed waste generation, a system of facilities may be more economical, using transfer stations to service a single solid waste management facility or siting more than one waste management facility. Environmental and/or public opinion factors may outweigh the economic savings of such a location and require a more remote site.
- Traffic - Sites should minimize congestion and adverse safety effects of facility traffic on the existing traffic flows in the vicinity of the site. Turning functions, site distance from areas of heavy traffic congestion, facility traffic volume, noise, and aesthetics are examples of factors to consider.
- Accessibility - The facility should be easily accessible from major roadways. The number and type of trucks and transfer vehicles that will be using the facility should be considered. Transporting waste through residential or commercial areas would be minimized. Good access from appropriate roads will minimize impact on residential streets, reduce impact on normal traffic flow, and lower transportation time and expense.

- Site, Size, and Shape - The 2003 siting process included a minimum landfill capacity criterion of at least ten years of facility life. This minimum requirement would be encompassed by this criterion. Ideally, sites should also be large enough for the facility buildings and structures, construction areas and open space buffer areas. There should be sufficient space to accommodate such elements as optimum vehicle movement, parking areas, queuing space, and private vehicle/truck separation.
- Land Availability - Sites should be readily available for acquisition at a reasonable cost. Preferably site acquisition will not require condemnation of properties.
- Single Ownership - Sites should be comprised of a single piece of property in order to limit the number of parties involved.
- Existing Land Use - Sites would be located a reasonable distance away from residential, community, and commercial development. However, the site should be conveniently located.
- Existing Zoning – Site use would be compatible with existing zoning.
- Access to Utilities - Sites should have ready access to required utilities. These would include electricity for purchase and sale of power (as appropriate), potable water, process water, wastewater disposal, and telephone. Utilities should have adequate capacity to supply the facility with its design requirements.
- Access to Markets - Convenient access to the markets for materials recovered at a facility may be an important factor, depending upon the type of facility and the materials. Market determination is usually based on the market value of the material and the transportation cost to markets.
- Topography - Sites should have topographic characteristics which are compatible with the type of facility being sited.
- Soils - Soils of the site should be adequate to support structures, roads and highways without adverse impacts or excessive costs. Some soils types and properties may make development of a site difficult due to excessive costs or difficulty in providing adequate structural support. Moreover, the soils may not be suitable for siting of a landfill.

### Socio-Political Criteria

- Community Burden – Communities with operating MSW landfills should be excluded from consideration for development of greenfield (i.e. new) MSW landfills to minimize undue community burden.
- Impact on Surrounding Areas - Sites should cause minimal environmental or economic impacts (including impact on property values) on surrounding areas. Public opinion could be a major factor in the relative importance this criterion.
- Environmental Justice – No sites should place an excessive environmental burden on a particular race, color, national origin, or income group.



EXHIBIT K144

#### Nuisance Criteria

- Noise - Sites should have a minimum adverse impact on noise levels in surrounding residential or other noise-sensitive areas. Noise levels may result from traffic to and from the facility, construction and operation of the facility. Attempts should be made to maintain reasonable ambient levels.
- Dust - Depending upon facility type, if dust is a factor to be considered, topography and prevailing winds should be considered.
- Odor - Where odor may be a problem, potential sites should be situated so as not to exacerbate the problem due to common temperature inversions, topography or prevailing winds.

## 11.4.3 Stage 3 - Define Ranking Parameters and Rank Potential Sites

### 11.4.3.1 General

Potential sites will be ranked relative to one another to assist the Task Force in developing its recommendations to the City Council. The process will compare the suitability of sites for a particular type of facility.

Since the City's criteria will likely be broad based in nature as applied to all solid waste facilities, a quantitative scoring system would be used. This system will allow the Task Force to develop a ranking on a site specific basis. The process includes weighting the various criteria. This permits some factors to be given greater influence than others. This was the approach taken in the 2003 landfill siting process.

After determining the weighting factor for each of the criteria, an impact rating will be assigned. The impact ratings are site specific and provide a relative measure of how the various criteria will be affected for each site.

Mitigation factors are those aspects, which lessen the impact rating. These mitigation factors may come about as a result of guidelines for operational procedure for each type of facility. These mitigation factors are divided into three general categories: operations and management, design, and compensation. These mitigation factors could include, but are not limited to, the following:

#### Operations and Management

- Traffic Routing;
- Traffic Safety Devices;
- Traffic Safety Enforcement;
- Street Cleaning (if applicable);
- Nuisance (e.g. odor control, dust, litter control);

- Wheel Washing (if applicable);
- Right for Local Inspection; and
- Commitment to Ongoing Communications with Neighbors.

**Design**

- Landscaping/Berming;
- Final Land Use Plan;
- Local Ordinance Compatibility;
- Fencing; and
- Development of Non-fill Areas (if applicable).

**Compensation**

- Host Community Fees;
- Development of Public Buildings or Infrastructure; and
- Complementary Services (i.e. no charge to use the facility).

### 11.4.3.2 Scoring and Ranking

For each criteria the Weight Factor (A), will be multiplied by the difference between the Impact Rating (B) and the Mitigation Factor (C) to determine the Net Impact (D). The formula is as follows:

$$A \times (B - C) = D$$

The Net Impact scores will be totaled to provide an overall impact. This process will be duplicated for each potential site.

The Task Force will consider the overall impact and then recommend preferred sites. These sites will be recommended to the Mayor and City Council for consideration.

City staff or their representatives should meet with neighbors and community representatives associated with the recommended sites for consideration. The City will provide written detail on the specifics of the proposed facility including purpose, design, construction, capacity, operational procedures, and performance guarantees.

The application of the criteria in the 2003 process was similar to Stage 3 described above. The key difference was that ranking of the sites did not include the use of mitigation factors.

## 11.4.4 Stage 4 - Selecting Specific Sites

To narrow the list of potential sites to the most appropriate shortlist of site(s), the City will complete the following tasks:

1. Neighborhood Notification: The City will transfer information and explanation of site selection process to those where potential sites for future solid waste management facilities exist.
2. Public Meetings: Public meetings will be conducted to explain the exclusionary criteria and City-specific siting criteria. Residents and property owners within a reasonable distance of the site(s) will be notified, invited, and encouraged to attend Task Force meetings.
3. Weighting and Scoring: The Task Force will select weighting values for the City-specific criteria. The weighting values are facility specific with the value for identical criteria remaining the same for each site.
4. Review of Scoring: The Task Force will review scoring, based upon additional information provided through the public meetings and the expanded Task Force.
5. Recommendations: The Task Force will recommend preferable sites to the Mayor and City Council based on the application of the criteria and iterative process.

## 11.5 Process Resolution

A facilitator will be brought into the siting process to assure all sides that their views and inputs will be fairly considered. The facilitator would act as a link for opposing interests, fostering communications, and encouraging cooperation. The facilitator should clarify issues and concerns, offer constructive suggestions, possible compromises, and potential solutions.

A facilitator will be used when the parties need help in facilitating communications when:

- Excessive personal time on the part of Task Force members would be demanded;
- The direction of a negotiated outcome is contrary to current City policy;
- The parties need help in establishing communication;
- Special group process skills are needed;
- Sensitive information is involved;
- Fresh ideas/potential solutions are needed;
- Negotiations are threatened by disagreements within groups; and
- The process is stalled.

At the beginning of the process, a facilitator would be selected by the City with the approval of the Task Force. This would help assure that the siting process is evenly and fairly addressed.

The preferred way to avoid an impasse is to have a facilitator address issues before conflict arises. This should open lines of communication with interested parties and coordinate the communication process among representatives of the various interest groups.

## 11.6 Action Item Summary

In 2011, the City will begin this siting strategy process to identify a new landfill, beyond the remaining capacity provided at the Waimanalo Gulch Landfill. The siting of a new MSW landfill will avoid areas situated west of Makakilo, as stated in Subsection 11.3. As detailed in Section 11 of this Plan, the City anticipates that it will reconvene a Task Force in 2011.[1] The Task Force will be assigned the responsibility of adopting the process outlined in Section 11 to identify a site for a new Subtitle D MSW landfill by 2012. In 2013, the City Council will review the Task Force's findings and take action regarding the Task Force's recommendation.

As noted previously, the recycling to energy and recycling to materials programs that are presently being pursued by the City and the City's ability to direct waste to these facilities, will significantly reduce the amount of waste to landfill by 2013. Interim shipping of waste is also being considered, while these facilities are constructed. The remaining non-recyclable waste, residue from recycling operations including ash from H-POWER, and C&D materials may be disposed in separate landfills. The siting procedures proposed would provide new landfill capacity to year 2030 and beyond.

[1] In 2003, the Mayor appointed a special advisory committee, the Mayor's Advisory Committee on Landfill Site Selection, to address the siting of a new landfill.



EXHIBIT K144