

DEPARTMENT OF ENVIRONMENTAL SERVICES  
**CITY AND COUNTY OF HONOLULU**  
REFUSE DIVISION  
1000 ULUOHIA STREET, SUITE 212, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 768-3401 • FAX: (808) 768-3434 • WEBSITE: <http://envhonolulu.org>

PETER B. CARLISLE  
MAYOR



TIMOTHY E. STEINBERGER, P.E.  
DIRECTOR

WILMA NAMUMNART, P.E.  
ACTING CHIEF

IN REPLY REFER TO:  
RE 11-006

**CITY AND COUNTY OF HONOLULU  
MAYOR'S LANDFILL SITE COMMITTEE MEETING NO. 2  
KAPOLEI HALE, CONFERENCE ROOM A  
1000 ULUOHIA STREET  
KAPOLEI, HAWAII 96707**

**THURSDAY, FEBRUARY 10, 2011  
9:00 A.M. - 4:00 P.M.**

**AGENDA**

- I. Meet at Kapolei Hale – Conference Room A**
- II. Public Comments**
- III. Review Meeting No. 1**
- IV. Site Visit to Solid Waste Management Facilities**
- V. Next Steps, Thank You, and Adjournment**

## **Materials for Committee Members**

Mayor's Community Advisory Committee on Landfill Site Selection  
Department of Environmental Services  
City & County of Honolulu

March 10, 2011

The following information is one of two envelopes you will receive in anticipation of our upcoming meeting on March 10, 2011, when the second envelope will be distributed. The following are contained in this transmittal:

1. Meeting No. 1 Group Memory – this is the record of our last meeting of February 10, 2011.
2. State Special Use Permit Order, 2009 – this is the approved SUP permit for the expansion of the Waimānalo Gulch Sanitary Landfill.
3. Resource Conservation and Recovery Act, Subtitle D Regulations – this is a summary of RCRA Subtitle D criteria for the siting of landfills.
4. Underground Injection Control and Groundwater Protection Zone Maps – this contains two maps outlining the locations of the UIC and GPZ maps for the island of O‘ahu.
5. State Response to Request for Availability of Waimānalo North Site – this is the response from the Department of Land and Natural Resources, January 31, 2011.

Also included in this package are copies of the information distributed during the February 10<sup>th</sup> field visit that not all members were able to attend. This includes information furnished by Schnitzer Steel Company, H-POWER, and the PVT Landfill.

1.

Mayor's Advisory Committee on Landfill Site Selection

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Meeting No. 1, Group Memory

January 20, 2011

**Meeting No. 1  
Group Memory**

Mayor's Advisory Committee on Landfill Site Selection  
City and County of Honolulu

January 20, 2011

Attendance:

Committee Members Present: Bruce Anderson, David Arakawa, Tom Arizumi, John Goody, Joe Lapilio, Tesha Malama, Richard Poirier, Chuck Prentiss, George West

Committee Members Absent: David Cooper, John DeSoto, Janice Marsters

Welcome and Opening Remarks: Doug Chin, Tim Steinberger

Department of Environmental Services (ENV) Staff: Steve Serikaku

Consultants: Brian Takeda, Gail Atwater, Mark White

Facilitator: Dee Dee Letts

The meeting began at 9:00 AM and opened with a welcome by Acting Mayor Doug Chin who thanked the Committee for agreeing to serve and noted that he and the Mayor looked forward to receiving their recommendations. Tim Steinberger, Director, ENV, also thanked the Committee and echoed the comments of Doug Chin.

The purpose and outcome for the Committee were next shared – the purpose is to share information and sites under consideration for the next solid waste landfill on O‘ahu, identify additional sites, if any, and to develop criteria from a community perspective to measure the identified sites against – the outcome is to forward to the Mayor a list of ranked sites based on the criteria.

The Committee agreed to guidelines and ground rules for their deliberations around this issue; they agreed to be courteous in their discussions, that it was OK to disagree as long as the disagreements were around issues and not personalities, that they would listen as an ally meaning that they would listen for agreements as well as disagreements, that they would state their concerns openly, and agree that every opinion is important to the discussion.

The Committee next invited comments from any member of the public in attendance. There were no comments.

Brian Takeda from R. M. Towill Corporation (RMTC) then provided an overview to the Committee regarding the City's present solid waste management system and scope of the process. He clarified that the committee is tasked with helping to identify the next landfill site on O‘ahu and that the Waimanalo Gulch Sanitary Landfill (WGSL) will not be considered in this process. Key points covered included the following:

- The basis for the formation of the Committee is Condition No. 4 of the Special Use Permit (SUP) for the operation of the WGSL dated October 2009 which required the ENV to begin the process of identifying O‘ahu's next landfill site by November 2010.

- The City is pursuing all feasible alternatives to landfilling. However, all present alternative processes result in the generation of waste by-products that cannot be further reused, recycled or otherwise combusted. For these forms of waste a solid waste landfill remains the most viable alternative for the City.
- The planned landfill will be designed to accept municipal solid waste, ash and residue, and construction and demolition debris waste.
- He explained the package of materials that was distributed to the Committee members.
- The schedule of 7 meetings was explained and it was noted that if more meetings are necessary, that they would be scheduled at the Committee's discretion.
- An overview of the City's refuse handling system including solid waste collection, transfer stations, H-POWER, landfills, recycling and bioconversion, source reduction and reuse, special waste management, and education.

After the presentation the Committee asked questions and began to develop preliminary issues for discussion. The following is a summary of the discussion and the issues raised:

Q: Are we talking about the identification of just one site or is there the potential to look at multiple sites depending on the waste stream?

A: The Committee can make comments on appropriate sites for waste streams however the Committee's task is to rank the sites from the best to the least satisfactory and not pick one; the further charge to the Committee at this point is to rank sites that can accommodate all waste streams including Municipal Solid Waste (MSW), ash and residue, and construction and demolition (C&D) debris, in part because of economies of scale and costs associated with multiple EISs and operators, etc.

Q: Can we have a copy of the LUC Conditions?

A: Yes we will provide

Q: Can we get information on waste stream composition by region and from the various transfer stations?

A: Yes and we will do our best to get it as well defined as possible

Q: Interested in drinking water retention and recharge areas.

A: We can get the Committee the current UIC or underground injection control line information.

Q: Are there other watershed restrictions?

A: Yes, but it will depend on the location of the site in question

Q: Can we have a presentation by DOH on environmental issues?

A: Yes, we can request this from DOH

Q: Can we get some parameters around the area that would be required for the site?

A: Yes we will get that

Q: Will we look at cultural sites that might be located in any of the sites we are looking at?

A: Existing information would be available and we will supply it to the Committee – any site ultimately chosen would be subject to the preparation of a Cultural Impact Assessment as part of the EIS process.

Q: Can we have a briefing by the LUC staff?

A: There was discussion around this and the group decided to look at the Decision and Order (D&O) first and then decide if a presentation would be helpful to the Committee in reference to the work they are being asked to do.

The Committee next discussed issues that they needed to address as part of their work:

- What is the timeframe to develop the new site
- What is the City's overall vision for waste stream disposal
- Precipitation patterns
- Existing cultural sites
- Current land use designations for sites under consideration and whether there are land use conflicts at any of the sites being considered
- Transportation costs
- Wind patterns
- RCRA Subtitle D requirements
- Information on the Waimanalo North and Bellows alternative sites, should the state and military say we can continue to look at those sites
- Problem of landfills that were closed in the past so we can be aware of these in our deliberations
- Availability of cover material and other engineering requirements at sites
- Different requirements for sites by type of waste disposed
- A lot of what we have mentioned is technical criteria; we need to make sure that we fulfill our charge of developing criteria from the community's perspective
- The site needs to accommodate C&D waste also

The committee next discussed the dates for future meetings understanding that the dates are tentatively set and may be adjusted:

February 10: 9 AM to +/-5 PM – There will be a tour of solid waste handling facilities–  
Committee members will meet at Kapolei Hale at 9:00 AM – we will furnish additional information to the Committee as the details are finalized.

March 10: 9 AM to 12 PM

March 31: 9 AM to 12 PM

May 12: 9 AM to 12 PM – (Note: This date is corrected from an earlier date)

June 23: 9 AM to 12 PM

July 21: 9 AM to 12 PM

All meetings will be in the Mayor's Conference Room unless the Committee is otherwise notified. Materials necessary for each meeting will be available no later than 7 days prior to the meeting.

The Committee requested that as the process progresses they would like an additional field trip to the top sites and also requested: (1) that maps be furnished when appropriate for discussion; and (2) that the appropriate Development Plans also be provided for the final sites.

2.

Mayor's Advisory Committee on Landfill Site Selection

State Special Use Permit Order

October 2009



Takeout: / MW

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AND C OF HONOLULU



'09 OCT 23 P1:42

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In The Matter Of The Application Of The	)	DOCKET NO. SP09-403
	)	
DEPARTMENT OF ENVIRONMENTAL	)	ORDER ADOPTING THE CITY
SERVICES, CITY AND COUNTY OF	)	AND COUNTY OF HONOLULU
HONOLULU	)	PLANNING COMMISSION'S
	)	FINDINGS OF FACT,
For A New Special Use Permit To	)	CONCLUSIONS OF LAW, AND
Supersede Existing Special Use Permit To	)	DECISION AND ORDER WITH
Allow A 92.5-Acre Expansion And Time	)	MODIFICATIONS
Extension For Waimānalo Gulch Sanitary	)	
Landfill, Waimānalo Gulch, O`ahu,	)	
Hawai`i, Tax Map Key: 9-2-03: 72 And 73	)	
_____	)	

ORDER ADOPTING THE CITY AND COUNTY OF HONOLULU  
PLANNING COMMISSION'S FINDINGS OF FACT,  
CONCLUSIONS OF LAW, AND DECISION AND ORDER WITH  
MODIFICATIONS

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

October 22 2009 by



Executive Officer

Orlando Davidson, Executive Officer



BEFORE THE LAND USE COMMISSION  
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ORDER ADOPTING THE CITY AND COUNTY OF HONOLULU  
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CERTIFICATE OF SERVICE

I hereby certify that a copy of the Order Adopting the City and County of Honolulu Planning Commission's Finding of Fact, Conclusions of Law and Decision and Order was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by regular or certified mail as noted:

DEL.           Abbey Seth Mayer, Director  
                  Office of Planning  
                  P. O. Box 2359  
                  Honolulu, Hawaii 96804-2359

Bryan Yee, Esq.  
Deputy Attorney General  
Hale Auhau, Third Floor  
425 Queen Street  
Honolulu, Hawaii 96813

REGULAR MAIL David Tanoue, Director  
Department of Planning and Permitting  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

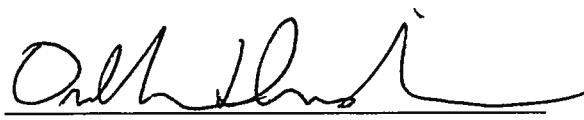
REGULAR MAIL Carrie Okinaga, Esq.  
Corporation Counsel  
City & County of Honolulu  
530 South King Street  
Honolulu, Hawaii 96813

CERT. Gary Takeuchi, Esq.  
Jesse Souki, Esq.  
Deputy Corporation Counsel  
City and County of Honolulu  
530 South King Street, Room 110  
Honolulu, HI 96813

CERT. Department of Environmental Services  
City & County of Honolulu  
1000 Uluohia Street, 3<sup>rd</sup> Floor  
Kapolei, Hawaii 96707

CERT. COLLEEN HANABUSA, Esq.  
220 So. King St. , Suite 1230  
Honolulu, Hawaii 96813

Dated: October 22, 2009 , Honolulu , Hawaii.



Orlando Davidson, Executive Officer



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ORDER ADOPTING THE CITY AND COUNTY OF HONOLULU  
PLANNING COMMISSION'S FINDINGS OF FACT,  
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MODIFICATIONS

On July 31, 2009, the City and County of Honolulu Planning Commission ("Planning Commission") met at the City Council Committee Meeting Room, Second Floor, in Honolulu, Hawai'i, to consider a new special use permit application ("Application") filed by the Department of Environmental Services, City and County of Honolulu ("Applicant"), to supersede the existing special use permit to allow a 92.5-acre expansion and time extension for the

existing Waimānalo Gulch Sanitary Landfill (“WGSL”) located at Waimānalo Gulch, O`ahu, Hawai`i, Tax Map Key: 9-2-03: 72 and 73 (“Property”).

After due deliberation and consideration of the record in this matter, the Planning Commission recommended approval of the Application (County Special Use Permit File No. 2008/SUP-2), subject to ten conditions, and further recommended approval of the withdrawal of County Special Use Permit File No. 86/SUP-5 upon 2008/SUP-2 taking effect, and that all conditions previously placed on the Property under County Special Use Permit File No. 86/SUP-5 shall be null and void.

On August 11, 2009, the Land Use Commission (“LUC”) received the decision and a portion of the record of the Planning Commission’s proceedings on the Application.

On August 20, 2009, the LUC received the remaining portion of the record.

On September 10, 2009, the Ko Olina Community Association, Colleen Hanabusa, and Maile Shimabukuro (“Intervenors”) filed a Motion To Intervene.<sup>1</sup>

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<sup>1</sup> At the September 24, 2009 meeting the LUC recognized Ms. Hanabusa, Ms. Shimabukuro and the Ko Olina Community Association as intervenors in the LUC’s proceeding based upon their intervenor status before the Planning Commission and therefore denied the Motion to Intervene as moot.

On September 17, 2009, the Applicant filed a Memorandum In Opposition To Intervenor Ko Olina Community Association, Colleen Hanabusa, And Maile Shimabukuro's Motion To Intervene.

On September 21, 2009, Intervenor filed a Motion To Deny Petition.

On September 23, 2009, the Applicant filed a Memorandum In Opposition To Intervenor Ko Olina Community Association, Colleen Hanabusa And Maile Shimabukuro's Motion To Deny Petition.

On September 24, 2009, the LUC conducted a meeting on the Application in the Kaua'i Meeting Room, Sheraton Waikiki Hotel, in Honolulu, Hawai'i. Gary Y. Takeuchi, Esq., and Jesse K. Souki, Esq., appeared on behalf of the Applicant. Colleen Hanabusa, Esq.; Ken Williams; and Maile Shimabukuro were present on behalf of the Intervenor. Bryan C. Yee, Esq., and Abbey Mayer were also present on behalf of the State Office of Planning, and Don Kitaoka, Esq., and Robert Bannister were present on behalf of the Department of Planning and Permitting.<sup>2</sup> At the meeting, both the Applicant and Intervenor provided

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<sup>2</sup> Pursuant to section 92-3, HRS, the LUC heard public testimony from Fred Dodge; William Aila, Jr.; City Council Chair Todd Apo; Mel Kahele; Abbey Mayer; and Robert Bannister. The LUC also received written testimony from Ka'eo Gouveia; Nobuko Maria Mori; Ali Mahmoodi; Laura Kay Rand; Mario Beekes; Lorita Nordlum; Paulette Dibibar; Clara Batongbacal; Elizabeth Dunne; Kalena Hew Len; Kamaki Kanahale; Ralph F. Harris; James C. Banigan III; Greg Nichols; Howard Perry, Jr.; and Michael Nelson. At the meeting, the LUC denied Intervenor's Motion To Deny Petition.

oral argument in support of their respective positions on the Application.

Following discussion, a motion was made and seconded to grant the Application subject to (1) the withdrawal of County Special Use Permit File No. 86/SUP-5 and LUC Docket No. SP87-362, provided that the existing conditions therein shall be incorporated to the extent they are consistent with and applicable to this decision and are not duplicative of any additional conditions imposed hereafter; (2) the conditions as recommended by the Planning Commission in County Special Use Permit File No. 2008/SUP-2 (LUC Docket No. SP09-403) and modified as appropriate; and (3) the following additional conditions: municipal solid waste shall be allowed at the WGS� up to July 31, 2012, provided that only ash and residue from H-POWER shall be allowed at the WGS� after July 31, 2012; the Honolulu City Council through the City Administration shall report to the public every three months on their efforts regarding the continued use of the WGS�, including any funding arrangements that are being considered by the City Council and the City Administration; and the City Council and the City Administration shall have a public hearing every three months to report on the status of their efforts to either reduce or continue the use of the WGS�. By a vote of 5 ayes, 3 nays, and 1 absent, the motion carried.

The LUC, upon consideration of the Planning Commission's

Findings Of Fact, Conclusions Of Law, And Decision And Order, the oral

arguments of the parties and the record and files herein, and good cause existing and upon motion duly passed by the LUC,

HEREBY ORDERS that the LUC shall adopt the Planning Commission's Findings Of Fact, Conclusions Of Law, And Decision And Order as its own Findings Of Fact, Conclusions Of Law, And Decision And Order, subject to the following conditions:

1. The Applicant shall obtain all necessary approvals from the State Department of Health, Department of Transportation, Commission on Water Resource Management, and Board of Water Supply for all onsite and offsite improvements involving access, storm drainage, leachate control, water, well construction, and wastewater disposal.

2. In accordance with Chapter 11-60.1 "Air Pollution Control," Hawai'i Administrative Rules, the Applicant shall be responsible for ensuring that effective dust control measures during all phases of development, construction, and operation of the landfill expansion are provided to minimize or prevent any visible dust emission from impacting surrounding areas. The Applicant shall develop a dust control management plan that identifies and addresses all activities that have a potential to generate fugitive dust.

3. That the City and County of Honolulu shall indemnify and hold harmless the State of Hawai'i and all of its agencies and/or employees for



any lawsuit or legal action relating to any groundwater contamination and noise and odor pollution relative to the operation of the landfill.

4. On or before November 1, 2010, the Applicant shall begin to identify and develop one or more new landfill sites that shall either replace or supplement the WGSL. The Applicant's effort to identify and develop such sites shall be performed with reasonable diligence, and the Honolulu City Council is encouraged to work cooperatively with the Applicant's effort to select a new landfill site on Oahu. Upon the selection of a new landfill site or sites on Oahu, the Applicant shall provide written notice to the Planning Commission. After receipt of such written notice, the Planning Commission shall hold a public hearing to reevaluate 2008/SUP-2 (SP09-403) and shall determine whether modification or revocation of 2008/SUP-2 (SP09-403) is appropriate at that time. The Planning Commission shall make a recommendation to the Land Use Commission.

5. The Applicant shall continue its efforts to use alternative technologies to provide a comprehensive waste stream management program that includes H-POWER, plasma arc, plasma gasification and recycling technologies, as appropriate. The Applicant shall also continue its efforts to seek beneficial reuse of stabilized, dewatered sewage sludge.

6. The Applicant shall provide, without any prior notice, annual reports to the Planning Commission and the Land Use Commission regarding the status of identifying and developing new landfill sites on Oahu, the WGSL's operations, and Applicant's compliance with the conditions imposed herein. The annual reports also shall address the Applicant's efforts to use alternative technologies, as appropriate, and to seek beneficial re-use of stabilized, dewatered sewage sludge. The annual reports shall be submitted to the Planning Commission and Land Use Commission on June 1 of each year subsequent to the date of this Decision and Order.

7. Closure Sequence "A" for the existing landfill cells at WGSL as shown on Exhibit "A12" must be completed, and final cover applied, by December 31, 2012.

8. WGSL shall be operational only between the hours of 7:00 a.m. and 4:30 p.m. daily, except that ash and residue may be accepted at the Property 24 hours a day.

9. The Applicant shall coordinate construction of the landfill cells in the expansion area and operation of WGSL with Hawaiian Electric Company, with respect to required separation of landfill grade at all times and any accessory uses from overhead electrical power lines.

10. The operations of the WGS� under 2008/SUP-2 (SP09-403) shall be in compliance with the requirements of Section 21-5.680 of the Revised Ordinances of the City and County of Honolulu 1990, to the extent applicable, and any and all applicable rules and regulations of the State Department of Health.

11. The Planning Commission may at any time impose additional conditions when it becomes apparent that a modification is necessary and appropriate.

12. Enforcement of the conditions to the Planning Commission's approval of 2008/SUP-2 (SP09-403) shall be pursuant to the Rules of the Planning Commission, including the issuance of an order to show cause why 2008/SUP-2 (SP09-403) should not be revoked if the Planning Commission has reason to believe that there has been a failure to perform the conditions imposed herein by this Decision and Order.

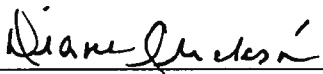
13. The Applicant shall notify the Planning Commission and Land Use Commission of termination of the use of the Property as a landfill for appropriate action or disposition of 2008/SUP-2 (SP09-403).

14. Municipal solid waste shall be allowed at the WGS� up to July 31, 2012, provided that only ash and residue from H-POWER shall be allowed at the WGS� after July 31, 2012.

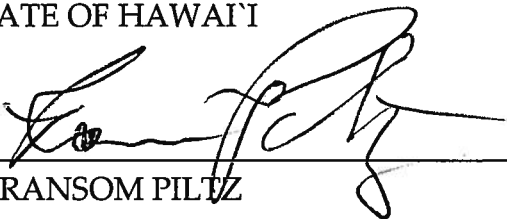
15. The Honolulu City Council through the City Administration shall report to the public every three months on the efforts of the City Council and the City Administration in regard to the continued use of the WGSL, including any funding arrangements that are being considered by the City Council and the City Administration.

16. The City Council and the City Administration shall have a public hearing every three months to report on the status of their efforts to either reduce or continue the use of the WGSL.

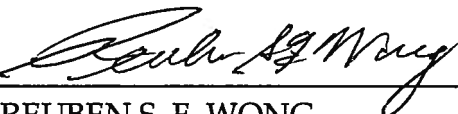
APPROVED AS TO FORM

  
\_\_\_\_\_  
Deputy Attorney General

LAND USE COMMISSION  
STATE OF HAWAII

By   
\_\_\_\_\_  
RANSOM PILTZ  
Chairperson and Commissioner

By           (Excused)            
VLADIMIR PAUL DEVENS  
Vice-Chairperson and Commissioner

By   
\_\_\_\_\_  
REUBEN S. F. WONG  
Vice-Chairperson and Commissioner

By           (Nay)            
KYLE CHOCK  
Commissioner

By Thomas Contrades  
THOMAS CONTRADES  
Commissioner

By (Nay) \_\_\_\_\_  
LISA M. JUDGE  
Commissioner

By Duane Kanuha  
DUANE KANUHA  
Commissioner

By (Nay) \_\_\_\_\_  
NORMAND LEZY  
Commissioner

Filed and effective on:

October 22, 2009  
\_\_\_\_\_

By Nicholas W. Teves, Jr.  
NICHOLAS W. TEVES, JR.  
Commissioner

Certified by:

Orlando Davidsion  
ORLANDO DAVIDSION  
Executive Officer

3. Mayor's Advisory Committee on Landfill Site Selection  
Summary of Resource Conservation and Recovery Act, Subtitle D Regulations

**Summary of  
Resource Conservation and Recovery Act  
Subtitle D, 40 CFR Part 258, Landfills**

February 8, 2011

1. Introduction

Volume 40 of the Code of Federal Regulations (CFR), Part 258, governs the development, operation and closure of landfills. This Federal regulation is administered by the EPA, and delegated to the State of Hawaii, Department of Health (DOH). The State's implementation of 40 CFR 258 is through the DOH Solid Waste Permit Program, in particular, through Hawaii Revised Statutes (HRS), Chapter 342, Integrated Solid Waste Management Plan. The State DOH, Solid Waste Permit Program, which incorporates the Federal Municipal Solid Waste Landfill (MSWLF) Criteria, identifies six criteria related to the location of existing and new municipal solid waste landfills. The criteria and a brief summary is provided below:

2. Overview

Operators and owners must comply with each of the criteria and maintain records in the facility operating record demonstrating that each of the criteria have been met. These criteria include the following:

Restriction No. 1: Airport Restriction - Owners/operators must demonstrate that the landfill does not constitute a bird hazard if the facility is located within 10,000 feet of the end of any airport runway used by turbojet aircraft, or within 5,000 of any airport runway used only by piston driven aircraft.

If the owner/operator proposes construction of a landfill or expansion of an existing landfill within 5 miles of any airport, the airport and the Federal Aviation Administration (FAA) must be notified.

Restriction No.2: Floodplains - Landfills located within a 100 year floodplain cannot restrict stormflows within the floodplain, reduce the temporary water storage capacity of the floodplain, or allow the washout of solid waste.

Restriction No. 3: Wetlands - Owners/operators of a new or existing landfill may not build or expand into wetlands. An exception to this rule may be permitted by EPA-approved permitting programs to construct or expand a landfill only if the following can be demonstrated:

- No other siting alternative is available;
- Construction and operation of the landfill will not violate applicable State regulations governing water quality or discharges of toxic or hazardous effluent; jeopardize threatened or endangered species, or critical wildlife habitat; or, violate protection of a marine sanctuary;
- The landfill will not contribute to the significant deterioration of the wetland;
- Steps are taken to achieve no net loss of wetlands by avoiding potential for impacts where possible, sufficiently minimizing unavoidable impacts; or, making proper

compensation for example, through the restoration of damaged wetlands or the creation of manmade wetlands;

Restriction No. 4: Fault Areas - New landfills or landfill expansions are generally prohibited within 200 feet of fault areas that have shifted since the last Ice Age. However, the director of an authorized EPA permitting program may permit an alternative setback distance of less than 200 feet if the owner or operator can demonstrate that the landfill will maintain structural integrity in the event of a fault displacement.

Restriction No. 5: Seismic Impact Zones - Landfills located in a seismic impact zone must demonstrate that the facility including, but not limited to, its liners, leachate collection system, surface water control system, et. al., has been designed to resist the effects of ground motion due to earthquakes.

Restriction No. 6: Unstable Areas - All owners/operators must demonstrate that the structure of their units will not be compromised during geologically destabilizing events including:

- Debris flows resulting from heavy rainfall or storm conditions;
- Fast formation of sinkholes caused by excessive groundwater withdrawal;
- Rockfalls which are initiated by explosives or sonic booms; and,
- The sudden liquefaction of soil after prolonged periods of repeated wetting and drying.

## 2. Operation

Owners/operators must comply with requirements for the management of municipal solid waste landfills. A range of procedures must be adhered to and include:

- Receipt of Regulated Hazardous Waste - A program to detect and prevent the disposal of regulated quantities of hazardous wastes and PCB (polychlorinated biphenyl) wastes. The program must provide appropriate protocol and procedures for random inspections, record keeping, personnel training to recognize hazardous and PCB waste, and notification of appropriate authorities if such waste is discovered at the landfill.
- Cover Material - The owner/operator must cover disposed solid waste with a minimum of 6 inches of earthen material at the end of each work day to control vectors, fires, odors, blowing litter, and scavenging. The State DOH may permit the owner or operator to use an alternative cover material or depth, and/or grant a temporary waiver of the cover material if local climate conditions make this requirement impractical.
- Vectors - The owner/operator is responsible for controlling vector populations which include any rodents, flies, mosquitoes, or other animals or insects capable of transmitting disease to humans. Application of cover at the end of each work day will generally control vectors.
- Explosive Gases - The owner/operator must set up a program to check for methane gas emissions at least every three months. If the regulatory limits are exceeded, the owner/operator must immediately notify the State DOH and take immediate steps to protect human health and the environment. The owner/operator must also develop



and implement a remediation plan within 60 days. The State DOH may modify this interval as appropriate and as consistent with the protection of public health.

- Air Quality - Open burning of waste is not permitted by the State DOH.  
ACCESS - The owner/operator must control public access to prevent illegal dumping, unauthorized vehicular traffic, and public exposure.
- Storm Water Runoff and Run On - The owner/operator must build and maintain a control system designed to prevent storm waters from running on to the active part of the landfill. The run-on control system must also be designed to the 25-year storm flow. The run-off system must similarly be designed to handle storm flows from a 24-hour, 25-year storm event. Run-off waters must be managed in accordance to requirements of the Federal Clean Water Act and Hawaii Administrative Rules (HAR), Chapter 11-54, Water Quality Standards.
- Surface Water Protection - All landfills must be operated in such as way that pollutants that violate the Federal Clean Water Act are not inadvertently or intentionally released into waters of the U.S. Appropriate storm water and drainage control measures should be designed to protect surface waters and avoid violations.

### 3. Design

Criteria for the design of landfills are only applicable to new units and lateral expansions. Existing landfills will not be required to retrofit liner systems. Two options are provided for landfill design criteria:

Option 1 - States such as Hawaii, with EPA- Approved National Pollutant Discharge Elimination System (NPDES) permit programs, may authorize the construction of landfills. The Director of the State DOH must ensure that Maximum Contaminant Levels (MCLs, as defined by EPA), will not be exceeded in the uppermost aquifer at a relevant point of compliance. This point is determined by the State DOH, but must be no further than 150 meters from the landfill unit boundary and on land owned by the landfill owner.

Approved authorizing State agencies, such the DOH, must also consider other factors such as the hydrogeological characteristics of the facility and surrounding land, the local climate, and the amount and nature of the leachate.

Option 2 - This option involves use of a design developed by EPA that consists of a composite liner and leachate collection system. In general, landfills in jurisdictions without EPA approved programs must use this design. The composite liner system combines an upper liner of a synthetic flexible membrane and a lower layer of soil at least 2 feet thick with a hydraulic conductivity of no greater than  $1 \times 10^{-7}$  centimeters/second. The leachate collection system must be designed to keep the depth of the leachate over the liner to less than 30 centimeters.

### 4. Groundwater Monitoring and Corrective Action

Groundwater monitoring is used to demonstrate that the performance of the landfill liner and leachate collection system is operating correctly and poses no potential for negative impacts to groundwater resources. As with all federally mandated requirements, the State DOH may adopt requirements that are more stringent than the Federal criteria. The promulgated criteria for State of Hawaii water quality standards is in HAR, Chapter 11-

54, Water Quality Standards. In general, the State water quality standards are consistent with Federal requirements.

Ground water quality monitoring systems must be undertaken for all municipal solid waste landfills. Owner/operators are required to install monitoring wells in appropriate locations to assess water quality: (1) beneath the landfill before any migrating water has passed the landfill boundary. This is to assess pre-existing or ambient conditions; and, (2) at a relevant point of compliance downgradient from the surface of the landfill. Installation and monitoring of monitoring wells shall be in accordance with a qualified water quality monitoring program approved by the State DOH.

Analysis of water quality samples should include specific constituents as required by DOH and EPA. Monitoring frequency may vary depending on requirements. In the event of significant spikes or anomalies involving specific water quality parameters, owners/operators should first assess whether the potential contamination is due to sources other than the landfill, sampling error, or naturally occurring conditions which have caused the deviant readings. If ground water analysis indicates there is significant contamination that is due to activities at the landfill, and does not include external activities beyond the landfill, errors in monitoring protocol, or naturally occurring conditions, then corrective action or remediation will be required. The level of treatment to which groundwater resources must undergo will be established by the State DOH.

During the remediation or clean up phase ground water quality monitoring must continue at a frequency to be determined by DOH. Public notification is required and a public meeting must be held to advise the public of the groundwater contamination and the proposed corrective action. During implementation of the remediation or clean up phase, water quality monitoring will be used to measure the effectiveness of treatment. In general, once it has been demonstrated by water quality monitoring that clean up efforts are effective, the clean up standard must continue to be met for a specified period of time as determined by DOH or EPA. According to Federal standards, this period must last for approximately three consecutive years.

## 5. Closure and Post Closure Care

All owners/operators are required to follow specific standards when closing a landfill. This includes preparation of a closure monitoring and maintenance plan which becomes part of the landfill operating record.

The final landfill cover must be designed and constructed to have a permeability less than or equal to the bottom liner system or natural subsoils, or a permeability no greater than  $1 \times 10^{-5}$  cm/second, whichever is lower. The final cover must also be constructed of an infiltration layer composed of a minimum of 18 inches of earthen material to minimize the flow of water into the closed landfill. The cover must also contain an erosion layer to prevent the disintegration of the cover. The erosion layer must be a minimum of 6 inches of earthen material capable of sustaining plant growth.

The above standards may be modified by the owner/operator and approved by DOH, if there is an equivalent reduction in infiltration and protection from erosion.

Finally, the owner/operator is responsible for a period of 30 years for maintaining the integrity of the final cover, monitoring groundwater and methane gas, and continuing leachate management and control.

6. Financial Assurance

The owner/operator must demonstrate financial capability of payment for closure, post closure care, and corrective action for releases of leachate, methane or other landfill contaminants. This requirement may be demonstrated with the following financial instruments:

Trust Fund with a pay-in period;  
Surety Bond;  
Letter of Credit;  
Insurance;  
Guarantee;  
Assumption of responsibility by the State; and  
A combination of the above instruments.

Other financial mechanisms may be employed, but must be approved by the EPA and/or State DOH.

4. Mayor's Advisory Committee on Landfill Site Selection  
Underground Injection Control and Groundwater Protection Zone Maps

Underground Injection Control (UIC) and  
Groundwater Protection Zone (GPZ)  
Island of O'ahu

February 10, 2011

Groundwater recharge areas for O'ahu have been previously identified by the Honolulu Board of Water Supply (BWS). Prior to 1987 these areas were identified as the Groundwater Protection Zone (GPZ), which indicates locations outside of a boundary that may be acceptable for sanitary landfill development. **Figure 1.**

Since 1987, the Department of Health (DOH) has administered the No Pass Program. The No Pass Zone is similar to the GPZ and identifies a boundary outside of which sanitary landfills and waste disposal systems are generally not developed. The boundary line is known as the UIC line.

Rules for the DOH's UIC program are promulgated in Hawai'i Administrative Rules (HAR), Chapter 11-23. The purpose of the program is to protect the State's potable groundwater resources from pollution by subsurface wastewater disposal. The program regulations are accompanied by UIC maps which demarcate the UIC Line. Lands that are makai of this line are not restricted from subsurface wastewater disposal by underground injection. **Figure 2.**

On January 10, 2003 the Honolulu City Council introduced Resolution 03-09 to apply the use of the UIC line to protect Oahu's groundwater by precluding the siting of landfills mauka of the line. The resolution has since been adopted. **See Attachment.**



Figure 1  
 BWS Groundwater Protection Zones  
 Department of Environmental Services



R.M. TOWILL CORPORATION March 2008

Source: Final Environmental Impact Statement  
 Expansion of Waimanalo Gulch Sanitary Landfill, 2008

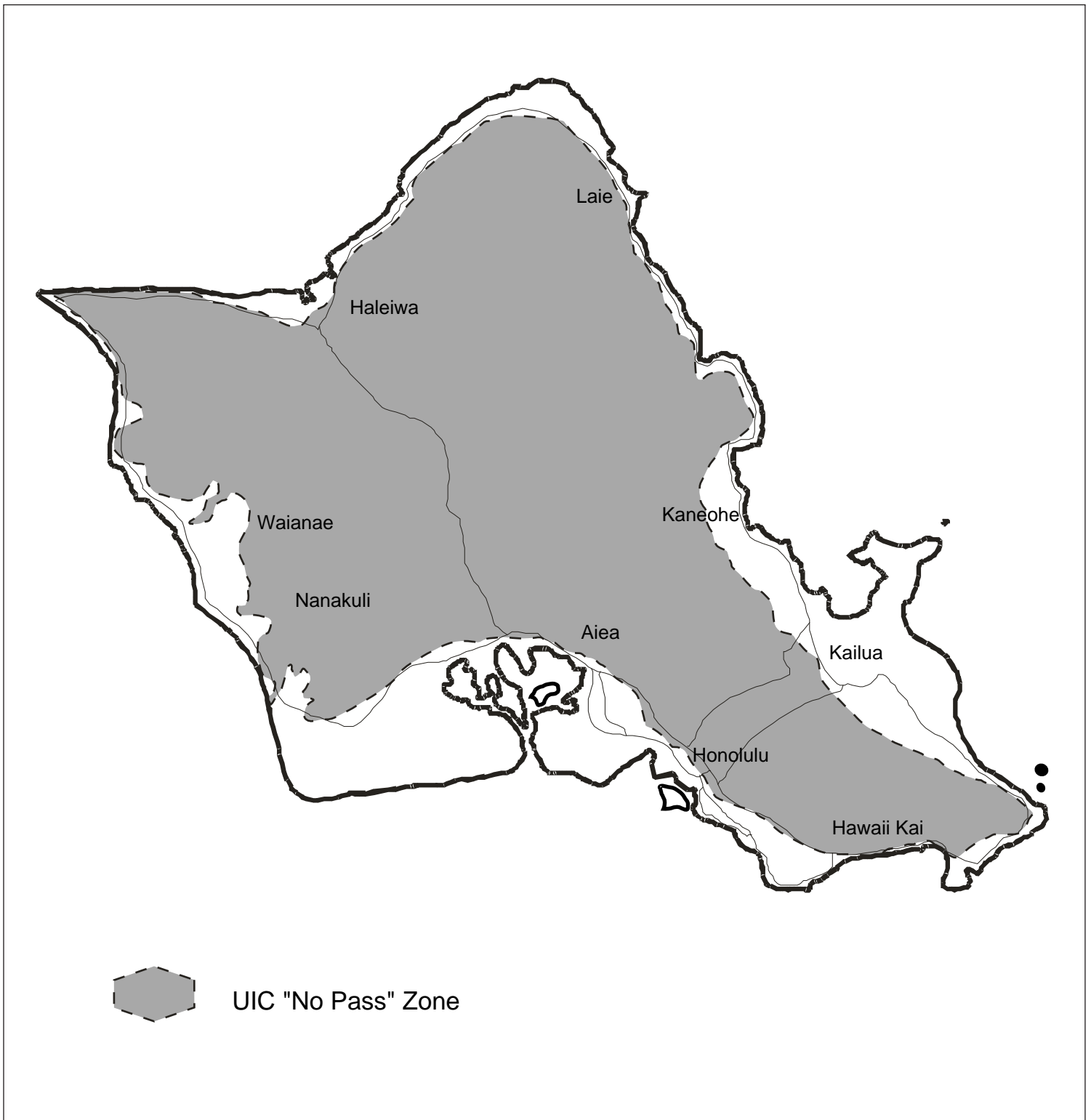


Figure 2  
 Underground Injection Control (UIC) Line  
 Department of Environmental Services



R.M. TOWILL CORPORATION

May 2008

Source: Final Environmental Impact Statement  
 Expansion of Waimanalo Gulch Sanitary Landfill, 2008



You are here:

## Honolulu City Council Policy Resolutions

(Link to original [Word Processing Version](#))

**03-09**

ESTABLISHING A CITY POLICY THAT MUNICIPAL SOLID WASTE LANDFILLS SHOULD NOT BE LOCATED OVER THE CITY'S UNDERGROUND DRINKING WATER SOURCES.

WHEREAS, both the groundwater protection zone, established by the City's Board of Water Supply, and the underground injection control line ("UIC"), established by the State Department of Health, are intended to protect the City's precious underground drinking water from contamination; and

WHEREAS, the State Department of Health has expressed its preference for the City's "non-degradation approach" of protecting drinking water sources by siting landfills seaward of the UIC line; and

WHEREAS, the City's Board of Water Supply also opposes the placement of a municipal solid waste ("MSW") landfill over the City's drinking water sources; and

WHEREAS, there is no current landfill technology that can guarantee that hazardous or other harmful substances from a MSW landfill placed over the city's aquifer will not, over the long-term, enter the city's drinking water sources and pose a risk to the public health and welfare of Honolulu's citizens; and

WHEREAS, in Hawaii, a number of toxic waste contaminated sites are former landfills; and

WHEREAS, prevention of contamination of the City's drinking water, through the placement of MSW landfills outside the groundwater protection zone and the UIC, is preferable to the remediation of contaminated drinking water; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that it hereby



establishes as a policy of the City that municipal solid waste landfills should not be located anywhere above the Department of Health's Underground Injection Control line, within the Board of Water Supply's groundwater protection zone, or over any of the City's drinking water sources; and

---

BE IT FINALLY RESOLVED that the Clerk is requested to send copies of this resolution to the Director of Environmental Services, the Director of Planning and Permitting, the State Director of Health, the Board of Water Supply and the Mayor.

INTRODUCED BY:

Mike Gabbard

DATE OF INTRODUCTION:

January 10, 2003  
Honolulu, Hawaii

Councilmembers

(OCS/040803/ct)

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[Policy Resolutions](#)

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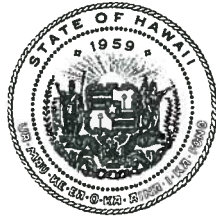
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5.

Mayor's Advisory Committee on Landfill Site Selection  
State Response to Request for Availability of Waimānalo North Site  
January 31, 2011

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

January 31, 2011

WILLIAM J. AILA, JR.  
INTERIM CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY H. KAULUKUKUI  
FIRST DEPUTY

WILLIAM M. TAM  
INTERIM DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Ref: 97od-308

Mr. Timothy Steinberger, P.E.  
Director  
Department of Environmental Services  
City and County of Honolulu  
1000 Uluohia Street, Suite 308  
Kapolei, Hawaii 96707


Dear Mr. Steinberger:

Subject: Future Landfill for Oahu, TMK (1) 4-1-008:013

Thank you for your letter dated January 7, 2011 requesting our input regarding proposed use of the subject State land as a future landfill for Oahu.

The Department considers the subject parcel, zoned primarily conservation district, as an important addition to the Waimanalo Forest Reserve because of its watershed, aesthetic and recreational values. Following a public hearing regarding this matter, the Land Board approved and recommended to the Governor the set-aside of the subject land to our Department's Division of Forestry and Wildlife for Addition to Waimanalo Forest Reserve. My staff is currently processing this request including preparation of survey maps and an executive order for review and approval by the Department of the Attorney General, and subsequently the Governor. Therefore, we do not support the idea of placing the future landfill at the subject location.

Sincerely,

  
William J. Aila, Jr.  
Interim Chairperson

cc: DOFAW, DLNR

11 FEB -3 09:31

DEPARTMENT OF  
ENVIRONMENTAL SVCS