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DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

Attorneys for Intervenors
KO OLINA COMMUNITY ASSOCIATION
and MAILE SHIMABUKURO

BEFORE THE PLANNING COMMISSION
OF THE CITY AND COUNTY OF HONOLULU
STATE OF HAWAII

In the Matter of the Application of

DEPARTMENT OF ENVIRONMENTAL
SERVICES, CITY AND COUNTY OF
HONOLULU

To delete Condition No. 14 of Special
Use Permit No. 2008/SUP-2 (also
referred to as Land Use Commission
Docket No. SP09-403) which states as
follows:

“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.”

FILE NO. 2008/SUP-2

INTERVENORS KO OLINA
COMMUNITY ASSOCIATION AND
MAILE SHIMABUKURO'S
WRITTEN DIRECT TESTIMONY
OF DWIGHT MILLER

DECLARATAION OF DWIGHT
MILLER

CERTIFICATE OF SERVICE

Contested Case: December 7, 2011

KOCA 15

**INTERVENORS KO OLINA COMMUNITY ASSOCIATION AND
MAILE SHIMABUKURO'S WRITTEN DIRECT TESTIMONY OF
DWIGHT MILLER**

Pursuant to the Stipulation to Amend Briefing Schedule as Provided in the Planning Commission of the City and County of Honolulu's Order Regarding Prehearing Conference dated November 29, 2011, Intervenors Ko Olina Community Association and Maile Shimabukuro submit written direct testimony through the attached declaration of Dwight Miller.

DATED: Honolulu, Hawai'i, December 13, 2011.

CADES SCHUTTE
A Limited Liability Law Partnership



CALVERT G. CHIPCHASE
CHRISTOPHER T. GOODIN

Attorneys for Intervenors
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Use Permit No. 2008/SUP-2 (also
referred to as Land Use Commission
Docket No. SP09-403) which states as
follows:

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

FILE NO. 2008/SUP-2

**DECLARATION OF DWIGHT
MILLER**

DECLARATION OF DWIGHT MILLER

I, Dwight Miller, hereby declare as follows:

1. I have been retained by the Ko Olina Community Association (“**KOCA**”) through their attorneys, Cades Schutte LLP, to render my opinion as an expert witness respect to the Honolulu Department of Environmental Services’ (“**ENV**”) Application to Modify Special Use Permit No. 2008/SUP-2 by deleting Condition 14 in the Hawai'i Land Use Commission's Order Adopting the Honolulu Planning Commission's Findings of Fact, Conclusions of Law, and Decision and Order with Modifications dated October 22, 2009.

BACKGROUND

2. I make this declaration as a professional engineer with over 20 years of solid waste planning and landfill design experience in Hawai'i and over 25 years of experience on the US mainland. My professional opinions are based upon this experience and continued professional development in the field. Exhibit K__ is a true and correct copy of my resume and a list of my prior work as an expert witness.

INTRODUCTION AND SUMMARY

3. I have been requested to provide opinions related to three areas:
- a. The current design and operation of the Waimanalo Gulch Sanitary Landfill (the "**Landfill**") and their impact on health and safety;
 - b. The process for siting a new landfill on the Island of Oahu and the effectiveness of the City and County of Honolulu's (the "**City**") current efforts through the current landfill site selection committee; and
 - c. The state of the practice for alternative methods for processing and/or disposing of solid waste and the City's diligence in pursuing such alternative methods.

4. Under my supervision and approval, my office has prepared a technical report on each of these subjects. True and correct copies of the reports are marked as Exhibits K146 (the "**Operations Report**"), K147 (the "**Siting Report**"), and K148 (the "**Alternatives Report**"). In this declaration, I provide an executive summary of the three reports.

5. Summarizing the Operations Report, I conclude that the Landfill's operations have been the subject of repeated regulatory violations and have consistently deviated from design and operational plans. Those violations and deviations have had grave consequences and have increased the risk of harm to public health and safety. I further conclude that the December 2010 and January 2011 spills show that stormwater control facilities and the layout of the landfill cells were not consistent with design and construction sequencing assumptions supporting the 2008 Final Environmental Impact Statement and, therefore, a supplemental environmental impact statement is required.

6. Summarizing the Siting Report, I conclude that the ENV's current landfill site selection process is flawed in the areas of process, measurement, and weighting. The process fails to move from broad consideration of a greater number of sites to a narrowed range of sites in detail. The process also deviates from what was contemplated in the Updated 2008 Solid Waste Management Plan ("SWMP"), a true and correct copy of which is marked as Exhibit K144. The measurement flaws include an incomplete list of criteria, poor or illogical scoring, and the improper use of deciles. The weighting of criteria is flawed due to organizational problems that will skew the results.

7. Finally, summarizing the Alternatives Report, I conclude that the City's current use of alternative disposal technologies is inconsistent with the current state of practice with respect to its recycling efforts, biosolid management, and

medical waste management. Moreover, the City's evaluation of alternative disposal technologies is inconsistent with the current state of practice because it has failed to develop and apply realistic and effective cost criteria.

THE LANDFILL'S DESIGN AND OPERATIONS AND THEIR IMPACT ON HEALTH AND SAFETY

8. The Landfill's conceptual design plans and operations plans are set forth in the Engineering Report for Landfill Expansion (Geosyntec, 2008) (the "**engineering report**") and Final Environmental Impact Statement (R.W. Towill, 2008) (the "**FEIS**"). The actual operation practices of the Landfill's operator, Waste Management of Hawaii, Inc. ("**WMH**"), have consistently failed to meet the conceptual plans for design and operations and have repeatedly been the subject of regulatory violations and assessments.

Violations and Deviations

9. The operations at the Landfill have been found to be out of compliance with environmental regulations on multiple occasions:

a. January 31, 2006: The Hawai'i Department of Health issued an 18-count notice of violation finding that the City and WMH had violated environmental regulations. It assessed a fine of close to \$2.5 million. Exhibit K59.

b. April 5, 2006: The United States Environmental Protection Agency (the "**EPA**") issued a notice of violation finding that the City and Waste Management had violated the Clean Air Act. Exhibit K60.

c. May 13, 2010: The Hawai'i Department of Health issued a 3-count notice of violation finding that the City and WMH had violated Hawai'i law by improperly constructing a Landfill berm and failing to notify the Department of Health of these issues for about 2 and ½ years. The Department of Health assessed a penalty of \$424,000 for the violations. Exhibit K66.

d. November 29, 2011: The EPA found that the City and Waste Management had violated the Clean Water Act based on discharges in December 2010 and January 2011. Exhibit K123 at 3.

10. Waste Management has shown a consistent pattern of deviation from the design concepts and operations plans described in the engineering report and FEIS. These deviations appear to have increased the risk of public health hazards as follows:

a. Operations exceeded permitted grades. Exhibit K59. This violation likely affected slope stability in ways not considered in the engineering report.

b. Operations staff repeatedly failed to provide adequate daily cover in both the ash monofill and regular MSW cells; failed to place and cover dead animals within the MSW cell active areas; accepted landfilled tires that are classified as special waste; and stored unauthorized material on the ash monofill. Exhibit K59. These violations increased the risk to public health by increasing the opportunity for contact between pathogen vectors (birds, rats, other animals, insects, and stormwater) and the waste mass.

c. Leachate within the landfill was allowed to exceed the design maximum depth of 1 foot on the lining system (a 2-foot depth is allowed in the sumps). Exhibit K59. This violation could have conceivably accelerated the rate of leakage through any potential defect in the lining system for the sections of the landfill that have a geomembrane liner.

d. Operations staff failed to implement a landfill gas collection and control system, creating a potential for fugitive gas emissions throughout that period. Exhibit K60.

e. Recordkeeping at the Landfill has not met regulatory requirements regarding leachate and asbestos handling, reporting, and planning. Exhibit K59. These violations greatly increase the risk of accidental asbestos release if areas with asbestos must be excavated at a later date.

f. The order and extent of expansion cell construction was changed. Cell E-6 was constructed before Cell E-5, which differed from the order described in the engineering report.

g. In addition, Cell E-6 was not constructed to the limits shown in the engineering report and FEIS, which appears to have directly contributed to the stormwater damage to the lining systems of Areas E-4 and E-6 during storm events in December 2010 and January 2011. This change in the limit of the Cell E-6 lining system contributed to the damage in two ways: (1) by creating a low point in the lining system and channeling stormwater toward the vulnerable low point at the

junction of Cells E-4 and E-6; and (2) by allowing areas above the western upper edge of the E-6 lining system to drain onto the lining system, which ultimately undermined the edges of the system and damaging the geomembrane and clay liner.

h. This change in the limits of Cell E-6 and the order of construction has created a significant impact on public health, and may require a supplemental EIS under Hawai'i Administrative Rules Section 11-200-26.

i. In December 2010 and January 2011, stormwater was allowed to flow onto and flood the active area of Cell E-6 during a series of storm events (DES, 2011a). The engineering report states that stormwater is to be controlled by constructing diversion ditches above the active cells to divert stormwater away from the landfill and below, as needed, to prevent erosion. A permanent stormwater diversion system was to be constructed to convey stormwater from above the site around the landfill with discharge being conveyed downhill of the site. The main drainage feature for the WGSL was to consist of the western perimeter drainage channel and the terminus sedimentation basin that borders the west side of the site (R.M. Towill, 2008).

j. According to the EPA Notice of Violation and DES letter dated February 2011, Exhibit K123, the permanent stormwater diversion system construction had not been completed and the temporary diversion ditches and inlets above the active cells were not maintained, or were not sized appropriately for the storm events.

k. For these reasons, stormwater damaged the E-6 Cell bottom lining system in two locations, requiring repairs that were documented in the AECOM liner damage assessment letter dated January 26, 2011, a true and correct copy of which is marked as Exhibit K28.

l. In addition, the stormwater was allowed to pond on the active area of the landfill, increasing leachate generation, wetting any dried sewage sludge pellets near the surface and generating odor from the wet sludge, and eroding and moving daily cover off the active area.

m. During the third rainfall event on January 12, 2011, stormwater carrying floatable waste, including medical waste, flowed over the edge of the sedimentation basin into the storm drainage outlet and out under Farrington Highway to the ocean.

11. WMH's consistent pattern of deviation from the design concepts and operations plans described in the engineering report and FEIS has increased the risk of public health hazards.

Landfill Airspace

12. WMH provided a figure dated April 2011 showing the landfill having a projected site life of 29.4 years from that date. A review of the calculations used to derive this projected site life indicates that there are several incorrect assumptions and omissions in the calculations.

Operations Failures to Follow Best Management Practices

13. The operations at the Landfill are inconsistent with best management practices in the following respects:

a. Medical waste should be contained by a process similar to that for asbestos and odorous waste (i.e., burying in a trench in the waste mass).

b. Asbestos should be confined to predetermined corridors within the waste mass so that only those areas of the landfill could contain asbestos.

c. Stormwater systems should be maintained and temporary systems constructed to prevent the inflow of stormwater onto the active fill areas. Additionally, the stormwater systems should be operational before waste is placed in these active fill areas.

d. The temporary stormwater collection and conveyance systems should be designed by a licensed engineer experienced in hydrologic modeling and water collection and conveyance design.

e. Leachate must be pumped from the leachate collection sumps as often as necessary to maintain the depth of leachate in the sumps at less than 2 feet and on the remainder of the liner system at less than 1 foot.

f. Cells should be constructed as shown in the engineering report and FEIS.

14. The ENV's failure to follow best management practices increases the safety risks to on-site workers, public health, and neighboring properties.

The Need for a Supplemental EIS

15. The flooding events of December 2010 and January 2011 raised questions as to the adequacy of the previous environmental review and design on which the review was based. The most relevant statement in the Final EIS (page 5-38) states:

5.6.5. Potential Impacts and Mitigation Measures

Flood Zone

Drainage controls to handle storm events have been implemented for the portions of the site used for landfilling. The drainage controls were designed to accept peak flows from a ~~100-year design storm~~ from a tributary area of 622 acres. Future control of storm and flood flows will be designed by the City and WMH to be consistent with the requirements for control of storm water runoff by the State and City & County of Honolulu. **With the mitigation measures proposed, the potential for adverse impacts associated with flooding are not anticipated.**

(Emphasis added.) Pages 8-21 of the Final EIS express similar logic, i.e., relying on design to dismiss potential impacts.

16. The events of December 2010 and January 2011 show the design, construction, and maintenance assumptions supporting the Final EIS were incorrect and hence the environmental analysis was flawed.

17. Hawai'i Administrative Rules § 11-200-27 states: "A supplemental statement shall be warranted when the scope of an action has been substantially increased, when the intensity of environmental impacts will be increased, when the mitigating measures originally planned are not to be implemented, or where new circumstances or evidence have brought to light different or likely increased environmental impacts not previously dealt with."

18. In this case, the mitigating measures originally planned were not adequate and environmental impacts have increased. Therefore, an SEIS is warranted.

LANDFILL SITING

19. My review of the site selection process shows serious flaws in three areas: process, measurement, and weighting. The site selection process is not following accepted practice in moving from broad consideration of a greater number of sites to a narrowed range of sites that are evaluated in greater detail. The process also deviates from what was described in the 2008 SWMP. Measurement flaws include an incomplete list of criteria and poor or illogical scoring, especially the use of deciles. The weighting of the criteria is flawed primarily due to the organization (more specifically, the lack of organization) of the criteria. Further, the committee assigns the weights without technical input, which may lend a sense of drama to the process but is hardly needed to produce credible, useful results.

20. Unless measurement and weighting flaws are corrected, the results of this selection process will be unreliable and essentially meaningless. The following summarizes my review of the siting process.

Site Selection History

21. A siting committee was convened in 2003 and considered 45 sites. Recommendations were made to the City Council to select a new landfill. Despite

this recommendation, the existing Landfill was selected by the City Council as the “new” landfill.

22. The current site selection committee started meeting in 2011 and is still active. The current site selection process has numerous weaknesses and, as presently configured, is unlikely to produce credible, useful results.

Deciles

23. A decile is a statistical measurement method of splitting up a set of ranked data into 10 equally large subsections. In the 2011 siting study, multiple siting criteria are measured using deciles (specifically criteria 1, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 19). The measurement appears to be an attempt to create a scale by which the potential sites can be compared to each other. The measurement technique works by establishing a range of values for all sites and dividing that range into 10 scoring categories.

24. Using site capacity as an example, if the lowest capacity is 15 years and the highest is 30 years, there is a range of 15 years and the “deciles” are 1.5-year increments. A site with 19 years capacity would be in the third decile and receive a score of 3, and a site with 26 years would be in the seventh decile and receive a score of 7.

25. This type of measurement is not found in site selection literature and in my experience is unprecedented. There are two fundamental flaws with this technique. First, this measurement makes no attempt to consider a potential effect

or condition and simply assumes an equal, linear relationship across whatever range of values is measured. Many of the criteria measured with deciles involve distances of a site to a type of feature (e.g., residential areas). This measurement technique ignores that effects such as noise vary with distance in a non-linear manner and is influenced by the potential presence of intervening topography or other factors.

26. Second, the scores returned by deciles can vary greatly depending on the outlying values or clustering. Consider the case where there is one site with a large value (an outlier) and other sites have more similar values. By dividing the entire range into 10 categories, many of the sites would have similar scores and potentially meaningful differences among them would be lost. Alternatively, in the situation where sites have similar values this method would return different scores where, in fact, there would be little or no meaningful difference among them.

27. It is much more straightforward and quite feasible to consider the potential for a specific effect or condition and score that directly. These types of criteria and measurements were described in the 2008 SWMP (see pages 11-7 to 11-9), but there is no explanation in the 2011 siting study why this approach was not followed during the current siting process.

28. For example, noise is included under 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.” This description lends itself to a useful set of scoring categories, such as: (a) no noticeable change in noise to the sensitive receptors; (b) noticeable but not intrusive; (c) intrusive; and finally (d) possible exceedance of allowable noise levels. This type of descriptive scoring is much more useful and more easily understood than a number based on an arbitrary range.

Weighting

29. Weighting is an unavoidable part of a decision-making process, such as landfill site selection or screening. Weighting is an explicit recognition that factors in the decision process vary in their importance. Indeed, not weighting factors implies they are all equally important, which is a common weakness in many selection processes.

30. In this case, the advisory committee is given complete authority over weighting the criteria. While the committee develops weights behind closed doors, the consultant scores the various sites. Only when the committee is satisfied with the consultant’s work (the consultant cannot question the committee’s weighting) without knowing the results by site are the criteria scores and weights combined (see Meeting No. 5 Group Memory, Exhibit K33 at 4).

31. This elaborate procedure, the same as used in 2003, may lend a sense of drama to the process but is hardly needed to produce credible, useful results. On the contrary, openly discussing which effects or conditions are most important and

which are desirable but not as critical can be a very important educational opportunity for an advisory committee and give direction to the technical experts on local community values. The literature on site selection shows the benefits of openly discussing and explaining criteria weights (O'Hare, 1983).

32. Further, the weighting exercise can be expanded and used to build consensus by developing multiple sets of weights, each based on different perspectives. For example, three sets of weights for all criteria could be developed, emphasizing in turn environmental protection, community protection, and operating efficiency and cost. These sets of weights should be developed collaboratively and openly.

33. Participants in this type of weighting exercise tend to be more willing to accept some weights they would otherwise reject because they know one of the sets of weights will be based on their values. The results will show different rankings of the sites; most likely, there will be a group of sites that rates well and a group that rates poorly under any of the weighting scenarios. In any case, the results will help promote further discussion on the merits of the sites and siting criteria.

Organization of Criteria and Implicit Weighting

34. In the current study, the selection criteria are not specifically organized, although they appear roughly grouped in a topical manner. This points to a basic weakness in the overall process and a common error in these types of studies—implicit weighting.

35. Implicit weighting occurs when the features being evaluated are correlated so that some conditions are counted multiple times, effectively receiving greater weight, while other conditions remain counted only once and their weight is effectively reduced. This method skews the results and obscures what is actually being measured.

36. For example, consider criterion 16 (location relative to wetlands and Natural Area Reserve System (“NARS”) land) and criterion 17 (location relative to listed threatened and endangered species). Both are certainly important considerations, and they are also likely to be related, i.e., it is more likely to find listed species in wetlands and NARS lands. In the mathematical logic of the siting study, however, they are separate. The net effect is to double count what is essentially one factor—potential effects on important habitat and species. The 2011 siting criteria have several similar cases of correlated criteria creating implicit weights, notably with regard to visitor services or facilities.

37. Implicit weights can be avoided by organizing the criteria into clusters or in a hierarchical structure (Hobbs, 1985). This approach is described in the 2008 SWMP but was not followed in 2011.

38. The 2008 SWMP describes four categories—sustainability, suitability, socio-political, and nuisance—with specific criteria within each category but no other detail on measurement or weighting. A useful practice for siting studies is to combine the criteria, scores, and weights within a category, similar to a subtotal,

which can be more usefully compared among the sites than just a single overall result. If desired, sub-categories can be developed.

39. Criteria and the resulting scores are most useful where they indicate the actual features of a site and represent a form of measurement; deciles create what is essentially an arbitrary scale. When the arbitrary scores are then multiplied by weights established without a technical rationale and finally added together, the results are largely meaningless, even for just creating a rank ordering of the sites.

40. Unfortunately, human nature will lead to reading much more into the results and concluding, for example, that a site with a final score of 60 is 50 percent better than a site with a score of 40. Considering the 2011 scoring and weighting process, this is of course grossly inaccurate and wholly misleading.

Mitigation and Minimization

41. The facility siting strategy described in the 2008 SWMP includes a step to avoid or reduce potential impacts (see Figure 11-1 and pages 11-9 to 11-10). The approach described in the SWMP provides clarity by explicitly separating the initial, or gross, effect and what the net effect would be following reasonable mitigation. There is no explanation why this approach was not applied in the current siting study.

Range of Sites

42. The 2011 siting study largely adopts the same sites evaluated in 2003. Little effort was made to reconsider the potential universe of sites. In January 2011,

the state of Hawai'i and the U.S. Marine Corps were asked if sites on their land could be considered (the state declined; the Marine Corps response was not included in the committee minutes) and committee members were asked to suggest appropriate sites. The letters to the state and Marine Corps stated "an island-wide site inventory" was undertaken, but no explanation is provided as to how this search was conducted.

43. Establishing the set of sites being considered is a crucial step. Too narrow a search precludes potential sites from ever being evaluated, and too broad a search can make the effort ponderous and inefficient.

Site Evaluation Process

44. To date, the current siting study does not appear to follow generally accepted processes for public facility siting. As noted above, it also does not appear to fully follow the process described in the 2008 SWMP. As the current process progresses, it appears to be straying from the process described when the Landfill Site Advisory Committee's work began in 2011. The November 8, 2011 group memory, Exhibit K152, includes additional GIS analysis looking for sites mauka of the UIC and No Pass line; instead, the selection process should have identified potential sites much earlier. Other discussions during this meeting indicate they were revisiting criteria on groundwater protection and site size (see page 3).

45. The GIS analysis presented at the November 8 committee meeting has other flaws. For land ownership, the analysis requires a minimum of 100 acres

under single ownership. This is an unnecessarily difficult condition to meet. Adequate size is important and looking for sites with a manageable number of owners is reasonable as a practical matter, but the conditions treated here as minimum requirements are not warranted. Other subjects in the November GIS analysis, such as critical habitat and agricultural lands are similarly treated as pass/fail without asking if there would be an effect, and if so, could be avoided or mitigated. Overall it is puzzling why a coarse-scale exclusionary screening exercise would be introduced at this point in the siting study. These are important subjects that should be thoughtfully addressed throughout the siting process and not brought back as the study is supposed to be reaching its conclusion.

46. The process usually followed for siting public facilities can be visualized as a funnel, beginning with broad consideration of a large number of sites with generally available information, then narrowing the number of sites and increasing the level of detail being studied. This process efficiently excludes less suited sites early in the process and then focuses greater and greater effort on the best prospects (Saaty, 2008; Kiker et al., 2005; Chang et al., 2007). In most cases, the last and most detailed level of study is the environmental impact statement (EIS).

47. The 2008 SWMP loosely describes this type of process (see Figure 11-1), with design and mitigation applied to a narrowed range of sites, followed by neighborhood notification and meetings, and then further review of scoring before the sites are recommended for evaluation in an EIS. The work to date is logically

flawed and incomplete; hence, it does not provide a sufficient basis to narrow the range of sites, let alone justify selection of a single site.

Specific Criteria

48. I reviewed all of the siting criteria developed in 2011 and their relationship to siting criteria included in the 2008 SWMP and generally found those in the SWMP to be more inclusive and logically organized. My firm has prepared a detailed summary comparison of the criteria. I highlight three criteria here:

a. Criterion 3, location relative to residential concentrations: This criterion is poorly described with no explanation of the types of effects that are of concern, only that more distance is better. Simple straight-line distance measurements ignore how topography can either shield or expose an area. Consider two sites, both with residential areas $\frac{1}{2}$ mile away. If at one site the residences are on the far side of a ridge, they would be substantially shielded from the landfill. If the other site was across a valley, the noise of landfill operations could be amplified by the topography. As defined, this criterion would assign both cases equal scores.

b. Criterion 11, location relative to H-Power: Although the rationale explains the H-Power contract has cost adjustments for distances greater than 12-miles, the measurement ignores this provision. Further, there is no consideration that the WGS� might continue to accept H-Power ash while municipal solid waste is received at another site.

c. Criterion 17, location relative to listed threatened and endangered species: This criterion could likely double-count areas also considered by Criterion 16 (location relative to wetlands and NARS lands), because it is more likely threatened and endangered species would be found in NARS sites. There is nothing inherently wrong with considering these areas to be very important, but their important values should be described clearly, measured effectively, and weighted appropriately. This corresponds with the 2008 SWMP criterion “Endangered species.” The SWMP criterion is better explained as avoiding effects.

49. There are several criteria in the 2008 SWMP that are not adequately addressed by the 2011 criteria. These include:

a. Aquifer location: From meeting minutes, it appears sites with potential aquifer impacts are excluded from the screening process. The Landfill Site Advisory Committee appears to be diverging from the siting process set forth in the SWMP. Stage 2 of that process consisted of applying exclusionary criteria to eliminate sites from further consideration, then developing City-specific siting criteria for areas that are not excluded based on EPA, Department of Health, and Board of Water Supply siting requirements. Notwithstanding City Ordinance 03-09, the Board of Water Supply has the authority to allow a landfill to be permitted within the No Pass Zone. Past correspondence has indicated the Board of Water Supply might be open to this possibility and application of engineering controls could technically make these types of sites environmentally feasible. The

Committee is currently considering potential sites that are mauka of the No Pass Zone. However, in addition to potable water sources, the Committee is using other criteria to exclude potential sites, such as the ones introduced in the November 8, 2011 meeting.

b. Environmental justice: The characteristics of affected populations are not addressed by the 2011 criteria. The 2008 SWMP states, “No sites should place an excessive environmental burden on a particular race, color, national origin, or income group.” This is an important consideration and is recognized at the federal level by Executive Order 12898 and normally addressed during environmental review. Historically, landfills located in minority communities have been a major impetus for recognizing the disproportionate burden and risk these communities faced. In Hawaii, environmental justice is recognized and protected by Act 294 (Kahihikolo 2008). No explanation is provided for omitting this important consideration from the siting process.

ALTERNATIVE METHODS FOR PROCESING AND/OR DISPOSING OF SOLID WASTE

50. Based upon my review of the City’s planning and practices regarding methods of reducing solid waste generation and subsequent disposal of solid waste at the Landfill, the City and County of Honolulu’s current consideration and use of alternative disposal technologies is inconsistent with the current state of practice both nationally and in representatively similar locals on the mainland west coast. These practices generally fall into three areas: (1) enhancing waste reduction and

recycling programs; (2) managing special wastes, particularly sewage sludge and biomedical waste; and (3) evaluating and implementing new waste conversion technologies.

Enhancing Waste Reduction and Recycling Programs

51. The City's recycling efforts are inconsistent with the current standard practices in four ways:

a. The City was slow to establish a residential curbside recycling program. Whereas some cities have had curbside recycling programs since 1970, the City started its program in 2007.

b. The 2011 Curbside Recycling Program Evaluation and Strategic Planning Phase I report (DES 2011b) contains recommendations for increasing recovery rates for mixed recyclables, maintaining current recovery rates for green waste, and developing strategies to increase capture rates while reducing contamination. However, unlike comparable locations such as King County, Washington, the City does not appear to have established formal goals to guide waste reuse and recycling programs.

c. The City does not currently operate a food waste collection program. While the City's 2011 Curbside Recycling Program Evaluation and Strategic Planning Phase I report contains a recommendation to develop an operational plan for collecting food waste, the City has fallen behind the current

state of practice by failing to develop and operationalize a food waste collection program earlier.

d. The City has failed to make timely progress towards beneficially using ash from the H-POWER facility. Much work has been done through research and application to show that the fly ash (generated from air pollution control systems) and bottom ash have viable uses as a concrete additive and soil amendment (fly ash) and for engineered fill and backfill (bottom ash). Also, the City apparently has not made adequate headway with the state to provide a more systematic approval process for ash reuse projects.

Biosolid Management

52. The City's current sewage sludge and biosolids management efforts are inconsistent with the current state of practice in three ways:

a. The City was slow to establish and grow its biosolids management program. The City failed to develop a biosolids management program until 2006, at which time the City had capacity to process up to 10,000 dry tons of biosolids annually. In contrast, other cities have been recycling biosolids since the 1970s. Furthermore, the City has not developed a biosolids management program consistent with best practices for continuous improvement in the areas of environmental performance and regulatory compliance.

b. The City has inadequately evaluated and developed market demand for biosolids.

Medical Waste Management

53. The City does not require medical waste to be incinerated prior to being landfilled, and as a result, does not follow standard practices to reduce the volume of medical waste being landfilled at WGS. Additionally, the City has failed to adequately evaluate alternative technologies to convert biomedical waste into fuels. Finally, the City has failed to adequately represent the costs of existing procedures to sterilize biomedical wastes in their evaluation of the economic feasibility of alternative disposal technologies.

Alternative Disposal Technologies

54. The City's evaluation of alternative disposal technologies is inconsistent with the current state of practice, because it failed to develop and apply realistic and effective cost criteria. Specifically, the City has stated that the "net cost of the technology must be no greater than the fee paid for disposal." The inadequacies of this criterion and the methods used to calculate the costs of the existing MSW management system are as follows:

a. The City failed to adequately represent the costs of existing procedures to sterilize biomedical wastes in their evaluation of the economic feasibility of alternative disposal technologies. According to the FEIS, the most promising alternative disposal technology is plasma gasification. Further, plasma gasification has demonstrated utility at converting biomedical waste streams into usable energy. However, the economic feasibility assessment did not include in its

cost comparison the expense of special handling (staff, training, facilities, etc.) required to sterilize medical wastes. Sterilization of biomedical waste typically is performed using an autoclave, an instrument that subjects biomedical wastes to high pressure saturated steam at 121°C for around 15–20 minutes. Failing to include the costs of autoclaving in an evaluation of economically feasible alternatives unfairly skews the analysis towards maintaining the status quo. For these reasons, the \$28/ton of additional cost associated with the plasma gasification technology is not reliable.


b. The City failed adequately to represent the likelihood and cost of future storm events in their evaluation of alternative disposal technologies. The January 12-13, 2011 storm event and subsequent release of contaminated stormwater and MSW from the WGSL illustrate the importance of ensuring that wastes accepted at the landfill be properly stored. Further, it is widely accepted that accidental releases of MSW negatively impact tourism and recreation, which are significant sources of revenue in the City's economy. Natural Resource Damage Assessment (NRDA), or the measurement of the performance of "ecosystem services," is an accepted framework for evaluating the costs of hazardous substance release, and quantifying the risks to the environment and human health. The City should apply an ecosystem services-based framework to the January 2011 storm event and release. This would factor in the likelihood of future storm events and releases, and the City could thereby incorporate the value of ecosystem services into

their evaluations of alternative disposal technologies. This process would provide a comprehensive accounting of the costs of the current system. Failing to take into consideration the likelihood and impacts of future storm events and releases produces an artificially low estimate of the real cost of continued landfilling at the WGSL.

c. The FEIS specifies multiple methods of waste diversion that were to be completed by the end of 2011. These included increasing the waste to energy (WTE) capacity of the H-POWER facility from 600,000 tons per year to 900,000 tons per year; improving composting programs, including sewage sludge co-composting by 2011; transporting MSW to the mainland United States; and recycling residual waste and ash into construction products by 2011. None of these actions will be completed on time. The H-POWER facility will not be functioning at the increased capacity until mid-2012. Only a fraction of City sewage sludge is being processed into fertilizer or other useful product. The City's attempt to transport MSW to the mainland United States was not successful. And no recycling of ash has been implemented to date.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

DATED: Bellevue, Washington, December 13, 2011.


DWIGHT MILLER, PE (HI PE #7217)

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BEFORE THE PLANNING COMMISSION
OF THE CITY AND COUNTY OF HONOLULU
STATE OF HAWAII

In the Matter of the Application of

DEPARTMENT OF ENVIRONMENTAL
SERVICES, CITY AND COUNTY OF
HONOLULU

To delete Condition No. 14 of Special
Use Permit No. 2008/SUP-2 (also
referred to as Land Use Commission
Docket No. SP09-403) which states as
follows:

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

FILE NO. 2008/SUP-2

CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

The undersigned certifies that on this day a copy of the foregoing document was
duly served on the following persons:

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