



1. Introduction

1.1 Objectives and Purpose

The County of Maui Integrated Solid Waste Management Plan (ISWMP) presents a comprehensive, long-term blueprint to solid waste management. The ostensible reason for developing this ISWMP is to comply with the Hawaii Integrated Solid Waste Management Act which calls for each county in the state to update the plan every five years.

The state's penultimate goal for requiring counties to develop ISWMPs is to provide a review of current operations, research alternative approaches, develop long-term scenarios, and provide capital and operational cost/revenue projections. Together, these provide both policy-makers and solid waste staff with a guide to assist them in managing future solid waste issues.

1.2 Summary of Project

Mayor Charmaine Tavares appointed members to an advisory panel, the Solid Waste Resource Advisory Committee (SWRAC). The County's Solid Waste Division (Division) assigned significant resources to SWRAC: the Division's staff supported the SWRAC's activities, provided a research tour of solid waste facilities in Oregon and California, and presentations by consultants and staff on various aspects of the industry practices and current County operations.

Division staff, the consultant, and SWRAC interacted with a representative from the State of Hawaii Department of Health's (DOH) Solid Waste Office. A DOH representative from the State took an active part in SWRAC meetings by making himself available to the presenters as well as the Division's staff and SWRAC.

To facilitate the SWRAC meetings, the Division provided the committee with professional mediators to facilitate the discussions and the development of consensus points SWRAC worked through. These consensus points became SWRAC's initial recommendations to the Division. Division staff and consultant worked these initial recommendations into five potential scenarios and presented them to SWRAC for comment. SWRAC reviewed these five scenarios over the course of two meetings and made recommendations to Division staff for possible changes.

The Division took SWRAC's advice into account and finalized the five scenarios the consultant was to analyze. Each scenario had operational details with their associated capital and operational costs extended out to 2030 and then to 2042.¹ These scenarios and their financial findings are discussed in detail in Chapter 13 but are briefly summarized here:

¹ Although a 20-year planning period is used for General Plans and for ISWMPs, the County requested projections be made to 2042 for all scenarios so they coincided with the projected life of the Central Maui Landfill.



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Scenario 1: Keeps operations as they are now with no changes. This is referred to as the Status Quo and is based on the full cost of capital and operations for fiscal year 2006;

Scenario 2: Uses the Status Quo numbers for FY2006 and applies capital and operations costs of programs that drive diversion up to 60 percent. These programs include, but are not limited to, household hazardous waste collection, a materials recovery facility (MRF), construction and demolition (C&D) MRF, curbside green waste and recycling collection, a new convenience/recycling center in the Hana Region, with landfill as the disposal point for the remaining 40 percent.

Scenario 3: Builds on Scenario 2 and adds a waste-to-energy (WTE) facility that can generate electricity for use and sale and still keep the diversion rate at 60 percent.

Scenario 4: Takes Scenario 3 and replaces the WTE facility with a gasification plant. It also places the landfills on Lanai and Molokai on "Standby with Permit." This term means that these landfills will maintain their solid waste permit but not regularly landfill any municipal solid waste (MSW). They would be on standby to handle disaster debris and other emergencies. The latter would be contained and shipped off island.

Scenario 5: Takes Scenario 4 and increases the diversion rate from 60 to 75 percent with the elimination of any alternative disposal facility, such as a WTE and gasification plant. A reuse facility is added to this scenario as are ordinances requiring diversion in the business sector of the community.

Each of these scenarios was costed using a financial model that developed comparable results. The results of these financial models were presented to Division staff and SWRAC. The latter advised the Division as to which scenario, or parts thereof, were right for the County to pursue. Next, the Division chose a scenario.

The consultant developed a draft Plan of the scenario chosen by the Division. This draft Plan, with its costs, timelines, and descriptions, was submitted to SWRAC for its recommendation before official submittal to the DOH. Also, public hearings were held where the Division staff and consultant presented the draft Plan and received comments from members of the public. SWRAC reconvened after the public comment period to advise the Division on how best to accommodate these comments. Another draft was developed and submitted to both the executive and the legislative branches of the County. DOH reviewed and commented on the Draft ISWMP and approved it on November 5, 2008.



1.3 Planning Time Span

Project Initiated	February 2007
Operational Review	February through October 2007
Mayor Charmaine Tavares appointed the members to SWRAC	June 2007
Research Tour	July 7 – 14, 2007
SWRAC Meetings	June 2007 through March 2008
Public Hearings	July 21 - 25, 2008
DOH Approval	November 5, 2008
County Council Review	February 2009

1.4 Reading Directions for ISWMP

Many ISWMPs are filled with tables, timelines, action points, technical jargon, etc. Such ISWMPs seem foreign to citizens with little background in the field of waste management and may, unfortunately, not be read as a result. The Division felt strongly that this document should be available to all readers and that its language and construction be such that every person who should begin reading a chapter would be able to understand it, and that terms and concepts should be presented within a context so the reader can understand their meaning. To achieve this goal, many chapters have a history that explains, for instance, the kind of collection vehicles used for municipal solid waste collection (garbage) and white goods (household appliances). It also explains technologies and operational activities used in other locations that may be applicable to the County.

Chapters 2 and 3 provide an overview of the County's solid waste situation, its operations with some observations, and the remaining capacity of its active landfills. This provides the reader with an overall view of the situation as it stands, today. Chapters 4 and 5 detail the County's current collection programs for recycling, MSW, bulky waste, and white goods. Background on the tools and operations of the trade are provided at the beginning of each of these chapters so that the reader can be familiarized with the industry. Chapters 6 and 7 examine the source reduction and educational activities that the County could do to reduce waste and inform citizens of the County's programs. These two chapters provide examples from other communities. Chapters 8, 9, 10, 11, and 12 explain C&D waste management programs, composting and other organic operations, the management of metals, household hazardous waste collection programs, and alternative disposal options such as WTE and gasification. Chapter 13 focuses on funding options for the County's new ISWMP and on the financial analyses of the five scenarios. Finally, Chapter 14 takes the County's chosen plan and presents considerations for its implementation.

During certain portions of this document, the text references technical documents in the Appendices. A case in point is Chapter 3 which provides short and clear descriptions of the capacity for burying MSW in each active County landfill. Technical information is provided in an appendix that provides scaled maps for further review.



Those readers wanting to get into the technical details are invited, at the beginning of that specific chapter, to review the appropriate appendix.

1.5 Summary of Field Research

Consultant team members made site visits to all solid waste operations located on the Islands of Maui, Molokai and Lanai. These site visits reviewed the operations and equipment at all the collection base yards, recycling operations, and landfills. The contracts with vendors were reviewed, and many of the vendors were contacted and interviewed. Contractors related to C&D were contacted and interviewed regarding the situation as it pertains to this material. The owner of the private C&D debris facility was also contacted. Operators of private recycling enterprises who do not have a contract with the County were contacted as well.

Formal and informal community meetings were held so that residents could express their views on the topic of solid waste management. Interviews were conducted with state regulators and the Maui Harbor Master. Parties involved with barging material were contacted and interviewed as were solid waste professionals in the other counties in the State.

Much of this research is provided in both the presentations to SWRAC and notes on research activities in the appendices.

1.6 SWRAC

1.6.1 Committee Appointments

Mayor Charmaine Tavares appointed the following individuals to the SWRAC:

- Greg Apa was made a member of the committee as representative of the waste and recycling industry. Mr. Apa is manager of Maui Disposal which has contracts with the County.
- Mauricio Avita works for the Maui Land & Pineapple Company and has a Ph.D. in agriculture.
- Dr. Eve Clute has a Ph.D in Public Health from the University of Hawaii.
- Darlene Endrina was appointed to the SWRAC to represent the community on the Island of Lanai.
- Jack Freitas, Jr. was appointed to SWRAC as a representative for the recycling and scrap metals industry.
- Stuart Funke-d'Egnuff is the Executive Director of Tri-Isle Resource Conservation and Development.
- Rob Hoonan represented the tourism industry and is the Director of Facilities Management for the Grand Wailea.
- Debra Kelly, office manager for the Molokai–Lanai Soil and Water Conservation District, represented the Island of Molokai on the committee.
- Bill Medeiros is a County Councilman, resident in East Maui and Co-chair of the Council's Public Works and Facilities Committee. Councilman Medeiros took part



in a solid waste tour in Richmond, Virginia, while attending the National Counties Conference held there.

- Kuhea Paracuelles is the Mayor's Environmental Coordinator.
- Steve Perkins is the Program Director for the Maui Economic Development Board.
- Victor Reyes is the Commissioner of Energy for the County.
- Susie Thieman is the Executive Director of Business Development Corp, an affiliate of Maui Economic Opportunity, Inc.
- Terry Vencl is the Executive Director of the Maui Visitors Bureau, and who, in 2002, was a member of a Solid Waste Task Force that examined diversion options.
- Mike Victorino, a County Councilman, is a resident of the Wailuku-Waihee-Waikapu area and Co-chair of the Public Works and Facilities Committee. Councilman Victorino took part in the SWRAC research tour.
- Rick Woodford has been President and an active member of the Maui Recycling Group since it began in the 1980s.

1.6.2 SWRAC Meeting Dates and Times

The SWRAC met under the HRS Chapter 92 sunshine law and confined its discussions to its formal meetings. The topics and dates of the SWRAC meetings were:

Table 1-1 – SWRAC Meeting Schedule

Topic	Date of Meeting
Orientation	6/21/2007
Garbage & Recycling Collection	7/19/2007
Review of Tour / Organization	8/2/2007
C&D / Yard Waste	8/23/2007
Pay as you Throw	9/6/2007
Alternative Disposal/WTE/Landfill Capacity/ Organics to Energy/Facilities	9/20/2007
Review: Consensus Points/HHW/Zero Waste	10/4/2007
Household Hazardous Waste/ Education/ Financials/Consensus Points/Draft Scenarios	10/18/2007
County Finance Director/Consensus Points/ Draft Scenarios	11/15/2007
Scenarios Presentation	2/7/2008
Presentation on Draft ISWMP	3/6/2008
Scenario Recommendation	3/11/08



1.6.3 Facilitation and Summary Notes

To facilitate the SWRAC meetings, the Division provided the committee with professional mediators, MSM, to facilitate the discussions and the development of consensus points the SWRAC worked through. These consensus points became SWRAC's recommendations to the Division.

Two MSM trained staff attended each SWRAC meeting. One member facilitated the meeting while the other took notes. Within five days after the completion of the previous SWRAC meeting, MSM provided County staff with a draft which, after editing, was placed on the Division's web site specifically created for SWRAC documents. These notes were summaries of the presentations and discussion.

1.6.4 Tour

SWRAC members, Division staff, and the Managing Director for the County took part in a seven-day tour that began on Saturday, July 7, 2007. On the following Monday, the tour started with a visit to the Metro Portland (Oregon) Regional Authority. The Authority became operational in 1979 with a membership of 25 cities and three counties. It is responsible for comprehensive solid waste disposal planning for the area but not collection.

Two members of the Authority met the tour group and discussed the various aspects of the Authority with them. Scott Klag, one of the guides, discussed the Authority's role in the Governor of Oregon's recent signing into law of the Product Stewardship Bill (HB2626). Bryce Jacobson was the group's other tour guide who discussed the area's commitment to C&D diversion.

The tour group walked through a four-bay transfer facility that the Authority owns and contracts out the operation. To keep commercial and residential traffic separate for safety reasons, residents use one bay exclusively. The bay has a series of bunkers where items can be placed for diversion and reuse. The second bay is for MSW and is where commercial haulers unload. The third bay is for C&D and is shown in Photo 1-1. Commercial haulers unload C&D in this bay, a third shift of workers conducts a quick sort to segregate reusable and recyclable items from the rest of the material. In 2005, 14,654 tons were diverted. A final bay is dedicated for the 5,839 tons of food waste collected and shipped to a processor in Washington State.



Photo 1-1. Metro Portland's C&D Bay

Members of the tour then went through one of two household hazardous waste (HHW) facilities that are open 312 days annually, processing 2,048 tons.

The final stop in Portland was the Authority's latex paint processing facility. The facility takes the 243,000 gallons of potentially recyclable paint collected at the HHW operations and processes it into recyclable paint. The recyclable paint, "Metro Paint," currently has five percent of the regional latex paint market.



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Photo 1-2. Tour group at Covanta Brooks Waste-to-Energy Facility

On Tuesday, July 9, the tour went outside of Portland to Marion County in Oregon which has a 57 percent diversion rate. The tour took members through the Covanta Brooks WTE facility that began operation in 1987 (Photo 1-2). The facility takes in 550 tons a day of MSW and produces 13.1 megawatts of energy that is sold to Portland General Electric.

The byproduct of WTE is ash, and the facility produces 138 tons of ash per day. The Tour left the power facility and went to the ash monofill. This is a dedicated landfill cell where ash is taken and buried. The SWRAC talked to the Marion County's solid waste personnel about the ash site and walked up closed cells of ash, see Photo 1-3.

The byproduct of WTE is ash, and the facility produces 138 tons of ash per day. The Tour left the power facility and went to the ash monofill. This is a

That night, the tour flew to San Francisco, California and the following morning, the group left to meet with officials at the San Francisco Department of Environment.



Photo 1-3. Tour group climbs a closed ash cell

Officials of the Department discussed the City's efforts to promote green building practices, recycling, HHW collection, product stewardship, banning plastic bags, and commercial recycling. Robert Haily, the recycling director, met with the group

and discussed San Francisco's role in motivating change and aspiring to Zero Waste. Mr. Haily had also been a recycling coordinator for the City and County of Honolulu and discussed his insights into the practical problems counties in Hawaii face with implementing recycling programs.



Photo 1-4. San Francisco's Fantastic 3 program

The Fantastic 3 program is the name of San Francisco's curbside recycling program that services 325,000 homes. Photo 1-4 illustrates the three carts: blue for recyclable items, green for compostable material, and black for trash. The program is for businesses as well as residents and has an 85 percent set-out rate for the recycling cart and 40 percent for the compostable cart.

The tour group took a tour of the City's 200,000-square-foot MRF that its contractor, NORCAL, owns and operates. The contractor bales its recovered material and sells them for between \$100 and \$225 per ton. The price fluxes with the market.



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The tour next went to the facility where self-haulers and commercial haulers take their MSW, C&D waste, and HHW material. Self-haulers are separated from the commercial haulers and go through a bay where items that can be recycled are separated (Photo 1-5).

Commercial trucks with C&D material are directed to the C&D reclamation operation. The material is emptied onto the tip floor, a rubber tire loader pushes the material up onto a conveyer belt and elevates it to the

picking line where workers separate the material and place it into the bays below them. This is shown in Photos 1-6 and 1-7.



Photo 1-5. San Francisco's self-haul drop-off for recyclables



Photo 1-6. Drop-off area for C&D to the left



Photo 1-7. Elevated picking stations with bays underneath for separated material

The MSW transfer station (Photo 1-8) is located adjacent to the C&D reclamation facility. The garbage trucks back up and dump their material into the pit where a dozer compacts the MSW and pushes it into open-top trailers. The material is then shipped to a contracted landfill located outside of the jurisdiction.



Photo 1-8. San Francisco's MSW Transfer Station

Photo 1-9 illustrates. The material is conveyed to a picking station where contaminants are removed. The compostable material is then ground by an 800-horsepower grinder, screened to size, and placed in rows. Approximately 70 percent of the material is food waste while the remainder is green waste. The materials had originally been placed into a giant bag called an Ag Bag but, a few months before the tour group had arrived, the City transitioned to a Gore-Tex

The following day, the tour group traveled to Vacaville, approximately 45 miles north of San Francisco. The compostable material, including food waste, from the City's Fantastic 3 program is composted at the Hay Road facility. The material is transported in a tractor trailer and is emptied using a tipper, as



Photo 1-9. San Francisco's food waste unloaded to be composted



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product where the rows of material are covered with the waterproof and breathable material.

The tip fee for the waste coming into the facility was \$26.80 at the time of the tour. The compost material sold for \$15 per cubic yard.

The University of California in Davis was the next stop to view the experimental anaerobic digestion technology system, "Biogas Energy Project." There was no operating commercial facility at the time of the tour, however, a contract with a jurisdiction in southern California for a 120-ton-a-day facility is being negotiated.

The operating pilot facility which the tour members saw processes eight tons a day of solid and liquid food, green, and animal waste. The Davis pilot plant is shown in Photo 1-10. The bi-digestion process uses microorganisms to convert organic material into a biogas. This can be further processed into value-added products such as electricity and biofuel.



Photo 1-10. UC Davis Biogas Energy Project

The next day, the group visited the Monterey Regional Waste District, the last stop. The District has won many awards, including two from the Solid Waste Association of North America (SWANA): 1998 Best Integrated Waste Management Facility and the National Outstanding Public Agency Award in 2000.

The District handles disposal and diversion for its region. It constructed a MRF in a 95,000-square-foot building at a cost of \$9.6 million. It receives 132,262 tons a year and diverts 61 percent from landfiling. The material delivered to the MRF includes everything but household trash. The material is dropped off, a quick check by the District's employees is made for reusable material and, if found, it is pulled out. The rest is pushed onto a conveyer that transports the material to elevated picking stations and sorted by workers as shown in Photo 1-11.



Photo 1-11. Monterey MRF picking line



Photo 1-12. Engine generators using methane gas to produce electricity

Green waste is dropped off along the side of the building. It is pushed onto a conveyer and transferred up to a grinder where it is shredded. The District processes 41,000 tons of green waste.

In 1983, the District's landfill was one of the first to put in an active methane gas collection system into its landfill. At the time of the tour, it had 120 acres with 45 wells collecting 610 million cubic feet of gas per year. Four engine generators (Photo 1-12) utilize the methane-rich landfill gas to produce 4.4 megawatts of power for use on site



and to sell to the local utility company, enough to power 4,000 homes. The sale of this power generates \$1.5 million in gross revenue to the District a year.



Photo 1-13. Tour members in the Last Chance Mercantile

The District's HHW facility receives 62,248 gallons of material from 9,128 customers a year. It is able to reuse 21,955 gallons of the material. Also, the District recycles 42 tons of car batteries per year.

Adjacent to the HHW facility is the Last Chance Mercantile, shown in Photo 1-13. This facility receives the reusable material

from the HHW facility and the MRF and sells it at low prices. It diverts 822 tons annually for a revenue stream of \$457,055 from sales.

The District's offices provide an example of green building principles. Its offices are constructed using materials made mostly out of recycled material. Photo 1-14 shows a recycled glass tile floor.



Photo 1-14. Tile floor made from recycled glass in the District's offices

1.6.5 SWRAC Goals

After the tour and presentations, SWRAC developed, through discussion, a series of consensus recommendations to the County's Division. These were outlined in a memorandum to aid the discussion and documented in the SWRAC Minutes. The SWRAC recommendations are as follows:²

1. Establish overall objectives for solid waste management.
2. Develop new ordinances and/or statutory authorities for recycling requirements.
3. Plan and implement a hazardous waste materials collection program and facility, including, at a minimum, annual collections from the Hana region, Molokai and Lanai.
4. Develop systems for intra-county and inter-island transportation of solid waste materials.
5. Provide universal curbside collection for all residences served by streets and roads meeting County standards. This would include:
 - Refuse collected once per week in a cart;
 - Single-stream marketable recyclables collected once every other week in a cart;

² The SWRAC did not prioritize the recommendations, and the order of presentation does not imply ranking.



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- Yard and large green waste collected in cans, paper bags, or bundled, called in by route drivers if within volume and size restrictions and collected every other week;
 - Bulky collection on a call-in (appointment) basis within ordinance limits; and
 - White goods collection, expanded to include all metals, on a call-in basis.
6. Construct a new, fully enclosed MRF to process the County-collected materials, both curbside and recycling center materials, on the Island of Maui. Single-stream collection will demand a MRF that can process the material. There is no such facility in Maui County. Also, the MRF site should be centrally located, such as Central Maui Landfill or Puunene, and implementation planning for the MRF should start immediately.

The SWRAC recommended a procurement process incorporating a design, build and operate structure resulting in a long-term service agreement.

7. Reduce landfilling at Hana landfill to a minimum and maintain the permit by limited landfilling, mainly inert materials. This would provide the County with a facility on the east end of Maui, when needed. The waste received each day (four tons) will be transferred back to Central Maui Landfill using two rear-load trucks.
8. Utilize the Hana facility as a staging ground for any storm management operations. This may include stockpiling, processing, and loading debris at the site.
9. Pursue landfill gas utilization. As SWRAC members saw in Monterey, collecting methane gas generated from trash already buried can create energy, revenue, and diminish emissions. If a WTE facility is recommended, it is still recommended to have an active gas collection system to extract the methane resources from the trash already buried. This resource will last decades into the future.
10. Evaluate the feasibility of commercial technology alternative resource management.³ This recommendation is specifically for the advancement of a Maui County-specific feasibility study utilizing established data and best practices.
11. Expand Olowalu Convenience Center. This new center would include:
- Convenience center for residential refuse and recycling drop-offs as currently operated;

³ A unanimous vote in favor of this with the intent being that the County releases an RFP for this study and that the alternative technologies be reviewed by using the research that Los Angeles County has recently amassed so that Maui is not paying to "reinvent the wheel." The County and its consultant would digest this new research and then do a feasibility study that is specific to Maui.



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- Base yard for County Refuse Collection Section operations serving west Maui;
- Transfer station for MSW, green waste and recyclable materials collected by the County Refuse Collection Section and private collectors.

(The committee foresaw a need to include the infrastructure needed for ingress and egress of the facility.)

12. Evaluate the feasibility of extending the life of the C&D landfill. The committee proposed the evaluation to encourage the County to initiate a strategy to provide for significant C&D diversion, since C&D amounts to approximately 19% of Maui's waste stream.
13. Immediately form a C&D Task Force of all interested stakeholders to provide a forum to discuss: C&D waste generation, on-site waste handling practices and issues, materials markets issues and opportunities, C&D transportation/transfer site issues, state/local regulatory issues and County disposal issues.
14. Review local ordinance changes associated with C&D waste generation and management options that could increase diversion. Consider using Santa Monica, San Jose, and San Francisco, California, and other models for the draft ordinances. These ordinances would apply to the building permit process and mandatory recycling typically conducted through the use of a local C&D processing/recycling center prior to any material being disposed. (Note: this assumes that such a processing/recycling center would be developed). SWRAC included other models so as not to limit the scope of the search of possible ordinances of which Maui could learn from and implement.
15. Contract with the private sector to receive, store and process abandoned autos and discarded appliances rather than the County initiating its own operations on the Island of Maui. The County, however, may be a member in the development of such operations on the Islands of Molokai and Lanai and the Hana region.

(The intent was to promote private-sector operations unless the private sector created a void of such operations on the islands of Molokai and Lanai and the Hana region.)

16. Pursue revenue streams to cover the cost of doing business such as:
 - a. System revenue bonding for major capital investments such as land purchase, MRF, WTE, HHW, collection trucks and carts, etc.
 - b. Plan and implement Solid Waste System Benefit Fee and collect via property tax bills
 - c. For all properties: covers debt, administration, and funding for non-revenue program requirements
 - i. Plus, for those receiving County collection services and using landfills, an additional fee, including possible "Pay As You Throw" fees



- ii. Utilize full service contracting for major infrastructure improvements requiring sale of products working toward an Enterprise Fund or Solid Waste Authority in the future.

17. Continue SWRAC involvement with annual review and comment on Plan implementation.

1.7 Governmental Regulations and Policies

1.7.1 Federal

The federal government regulates solid waste in the United States under Title 40 of the Code of Federal Regulations Subchapter 1 (40 CFR 239 to 2999). On October 9, 1993, new federal regulations went into effect for the control of MSW landfills. These regulations are in 40 CFR 258 (also known as Resource Conservation Recovery Act [RCRA] Subtitle D), Criteria for Municipal Solid Waste Landfills.

Under authority of RCRA, the United States Environmental Protection Agency (USEPA) administers Title 40 regulations and enforces solid waste regulations and policies through its Office of Solid Waste (OSW).

Figure 1-1 shows USEPA's hierarchy of integrated solid waste management which is illustrated in the form of a pyramid of ranked approaches. Source Reduction is at the highest (A) level of the pyramid with landfilling at the bottom. Recycling comprises the middle blocks (B & C) followed by combustion with energy recovery (D) above combustion without energy recovery and landfilling (E).

1.7.2 State of Hawaii

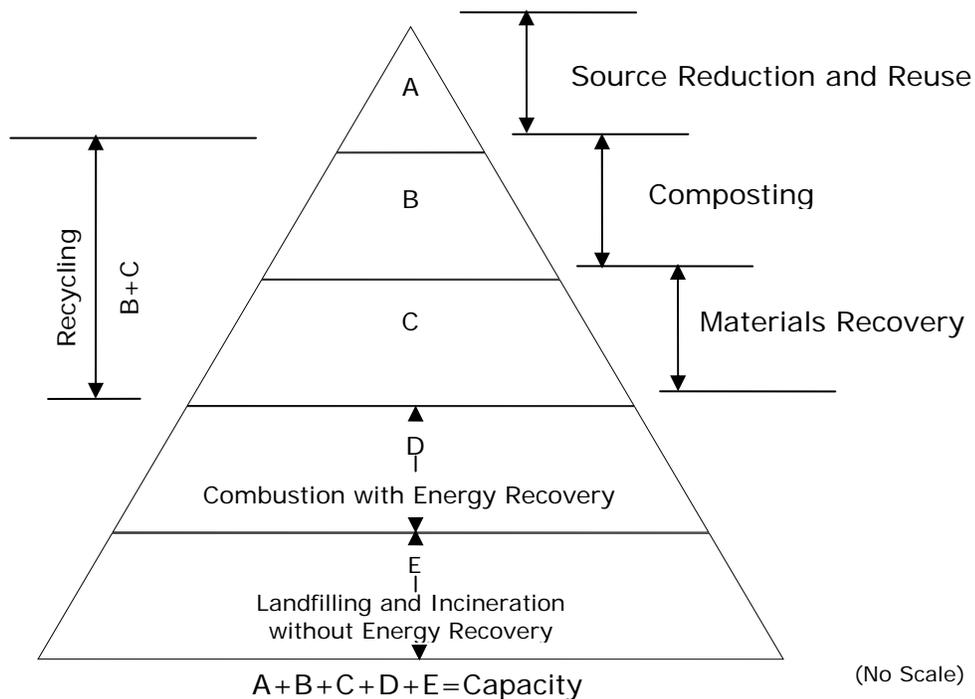
The State of Hawaii Department of Health (DOH) houses the Environmental Management Division, which includes the Solid and Hazardous Waste Branch. This Office was established by the Integrated Solid Waste Management Act, Hawaii Revised Statutes (HRS) 342G (attached as Appendix A). The Solid and Hazardous Waste Branch is responsible for implementing solid waste management policies and regulations on the State level. Hawaii Administrative Rules, Title 11, Chapter 58.1 (HAR 11-58.1) regulates landfills, composting facilities, recycling operations, and salvage yards. HAR 11-58.1 incorporates the provisions of the federal regulations relating to solid waste programs and, thereby, delegated the responsibility for permitting and regulating solid waste disposal facilities to DOH.

The Solid and Hazardous Waste Branch is charged with the oversight of the integrated solid waste management planning as required by HRS 342G. HRS 342G requires that each county shall consider the following solid waste management practices and processing methods in their order of priority: 1) source reduction 2) recycling and bioconversion and 3) landfilling and incineration.

The goals of HRS 342G include the reduction of the solid waste stream prior to disposal by 25 percent by January 1, 1995 and 50 percent by January 2000. The State of Hawaii's 2000 Plan for Integrated Solid Waste Management acknowledged that the 50 percent goal had not been reached but was still practical to attain.



Figure 1-1 – Solid Waste Management Hierarchy⁴



In 2002, the Twenty-first Legislature of the State of Hawaii passed House Bill 1256 that imposes requirements and fees for beverage containers to discourage littering and promote recycling. This is an operating program and is referred to as "HI-5." Beverage containers are redeemable for a refund of a five-cent deposit.

1.7.3 County of Maui

The Division is responsible for overseeing all solid waste management activities within the County. The Division is under the aegis of the new Department of Environmental Management which began operations as of July 1, 2007.

In 1989, the Division developed the County Comprehensive Solid Waste Management Plan. This plan promoted waste reduction, recycling, composting and administrative and enforcement measures.

In response to the State's 1991 ISWMP for the State, the County developed an ISWMP that was approved in 1994. (This plan and its specific recommendations will be referred to throughout this document.)

⁴ A reproduction of a figure printed in H. Lanier Hickman, Jr., Solid Waste Collection & Transfer, American Academy of Environmental Engineers Staff, pg. 4