

Consultants' Synopsis: Zero Waste Implementation Plan for the County of Hawai'i

Prepared under contract for:

County of Hawai'i
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Report Outline/Highlights

- Overview of existing resource management programs in County of Hawai'i
- Scope of work
- Summary of recommendations, including five-year timeline and budget
- Resource generation assessment and current value of discards
- Job creation/revenue potential of recommended resource management programs
- Overview of stakeholder feedback
- Recommended implementation plans by material/management method (including overview of existing management methods, specific stakeholder feedback related policy, direct programs, training and education, infrastructure, equipment and technology, funding and incentives, and estimated budget and five-year timeline):
 - Organics
 - Reuse/Repair
 - Recycling
 - Special Discards
 - Education, Outreach and Public Awareness
 - Extended Producer Responsibility
- Appendices containing:
 - Sample Organics Out of the Landfill Resolution
 - Case studies on diversion through food bank programs and decentralized composting options
 - Sample Resource management ordinance (County of San Diego) and Draft Resource Management Ordinance for County of Hawai'i
 - Sample C&D Ordinance
 - Sample Household Battery and Florescent Tube Ordinance
 - Sample Sharps Ordinance
 - Comparison Chart of State Electronic Recycling Laws
 - Draft Model Electronics Product Stewardship Legislation
 - Strategies for Promoting Architectural Salvage and Deconstruction Practices

Overview

Resource management in the County of Hawai'i is in transition, with both positive momentum from plans to implement programs that benefit residents, the environment and economy, and a multitude of challenges to contend with as well. While the County is moving towards increased diversion of discarded materials, focusing on recycling and composting, 70% of what is currently generated continues to be landfilled, and it is this material that will provide resources, revenue and jobs required to support the island's sustainability. The State of Hawai'i's HI5 program, the planned conversion or expansion of the island's twenty-one transfer stations into resource recovery areas, and inspired efforts by County staff, elected officials, local businesses and residents, are all collective assets to resource management on Hawai'i.

In 2003, Hawai'i targeted 50% diversion of discards to the landfill by 2008, and 80% by 2013. In December 2007, the County adopted Resolution 356-07: "A Resolution to Embrace and Adopt the Principles of Zero Waste as a Long-Term Goal for Hawai'i County." One of the island's only two landfills, Hilo, is subject to closure in 2012. The County also pays to haul recyclables across the County and to ship them off the island for recycling.

- Composting, Agriculture and Food Security

Approximately 90% of the County's food is purchased from the mainland, while some 3,000 farmers on one million acres, or about two-thirds of the island's landmass of agriculturally zoned property, could support Hawai'i's economy and food supply. Replacing only 10% of imported foods with those locally produced and consumed would amount to approximately \$313 million in value. "Assuming a 30% farm share, \$94 million would be realized at the farm-gate, which would generate an economy-wide impact of an additional \$188 million in sales, \$47 million in earnings, \$6 million in state tax revenues, and more than 2,300 jobs¹.

"Replacing only 10% of imported foods with those locally produced and consumed would amount to approximately \$313 million in value."

Food and ornamental plants from mainland and off-island sources have led to the introduction of between 4,600-8,000 invasive species of flora and fauna, and are 86 considered serious pests of native ecosystems². The use of directly land applied organics and composts, mulches and fertilizers produced from urban discards could help farmers save money to compete more favorably as well, in addition to providing a healthier, more controllable and sustainable food supply.

After the last sugar plantation closed in 1995, an already developing shift in Hawai'i's employment from agriculture to hospitality and tourism intensified. Since this change, employment rates and the island's economy has become progressively more volatile, subject to the ebb and flow of the economies of the continental United States, Europe, and Asia. Indeed, Hawai'i's tourism industry is currently suffering from the worldwide economic downturn. For example, the County experienced a visitor decline of 31.5 percent in September of 2008, and statewide, from January through September of 2008, visitors spent \$692.5 million, or 7.4 percent, less than the same nine-month period in 2007³.

¹ PinSung Leung and Mathew Loke, "The Economic Impacts of Increasing Hawai'i's Food Self-Sufficiency," Economic Issues, Dec. 2008, EI-16, Cooperative Extension Service, University of Hawai'i College of Tropical Agriculture and Human Resources, Hawai'i Department of Agriculture, <http://hawaii.gov/hdoa/add/food-self-sufficiency>

² Big Island Invasive Species Committee (BIISC), 23 E. Kawili St., Hilo, HI 96720

³ State of Hawai'i Department of Business, Economic Development and Tourism

The Potential of Zero Waste

Resource management methods proposed in this report – reuse, recycling, composting, and special discards management, among others - represent increased job creation and economic growth in sectors more stable, and sustainable, than tourism. Further, on-island organic resource management possesses the potential to increase both employment opportunities and ensure a local, healthier food supply for Hawai'i residents. Sustainable farming enhanced through use of mulches and soil amendments, and created from Hawai'i's own organic discards, can also help advance agritourism, a new, dynamic, rapidly growing business on both the island and worldwide.

Zero Waste is an ambitious but important endeavor. No single strategy will result in success, and each community must carve its own path, cognizant of and willing to work within its existing political environment, financial boundaries, and legislative systems. The next step down the path to Zero will be the development of an Integrated Resource Management Plan that will include detailed timetables and economic analyses required to implement this Zero Waste Plan. By utilizing various strategies identified in this document, developing supportive partnerships, and remaining dedicated to the long-term goal of Zero Waste, Hawai'i will become one of the most sustainable regions in the nation.

The forward-thinking management of discards generated from products produced on the island or imported from the mainland or other countries outlined in this report represent job creation and economic stimulation that would not be achieved through landfilling or incineration. Zero Waste involves mindfulness of the triple bottom line: Profit, people and the environment. A Zero Waste system encompasses economic growth and sustainability, a strengthening of community and social endowment, and enhancement of both local and global environmental quality. All are considered and included in the recommendations in the report.

Scope of Work

The Hawai'i County Council recently rejected the implementation of a waste incineration plant due to its high cost. Consultants Recycle Hawai'i and Richard Anthony Associates (RAA) were hired by the County to gather input from island residents and businesses and combine this stakeholder input with consultants' extensive knowledge of resource management policy and programs to assess the feasibility and viability of a Zero Waste strategy for the island.

The County's resolution "to Embrace and Adopt the Principles of Zero Waste as a Long-Term Goal for Hawai'i County" is a forward-thinking first step for the island, and prompted development of this report.

The goal of the consultant's proposed Zero Waste program is to transform the existing philosophy of "managing solid waste" into a "resource management" paradigm. In addition to increased economic growth and job creation, Zero Waste programs have shown to reduce disposal costs and overhead for businesses, improve employee morale and loyalty to their employers, enhance community ties, and improve the local environment.

Recycle Hawai'i and RAA obtained public and private sector input through a series of meetings throughout the County. Several hundred stakeholders from government, business and residential sectors attended the meetings, which proved to be informative as well as inspirational.

Next Steps...

Development, vetting and passage of the new rules, including more detailed economic analysis and a funding plan. Specific program implementation measures and budgets, job descriptions, education/training protocols, and stakeholder committee establishment should be included in this next stage of work.

Summary of Recommendations

The key to economic growth through recycling, reuse and composting is recovery of discarded materials and adding value to them through facilitation and development of enterprises on the island. Currently, a multitude of discards are being collected for recycling, but most recyclables are shipped off the island almost as quickly as new products are being shipped onto it. By importing consumables and exporting recyclable/reusable commodities, the island is paying more than it has to for resource consumption and management, and losing the jobs, small businesses, tax revenues and other associated economic benefits offered by keeping production and resource management in Hawai'i.

The following “new rules” were identified through stakeholder meetings and used to frame discussions on local and island-wide resource management issues:

1. Producer and Retailer Responsibility (retailer and producer take-back of non-recyclable, non-reusable or non-compostable products and packaging/initiatives to encourage producers to design toxicity and waste out of products and packaging)
2. Source Separation Ordinance (separation of designated organics, reusable and recyclables, including all haulers being required to provide recycling services as a condition of their County permit)
3. Get Organics Out of the Landfill (to reduce global warming, toxic leachate, and stimulate agriculture on the island)
4. Construction & Demolition (C&D) Recycling (construction and demolition reuse and recycling plans to reduce landfilling and stimulate the local economy)
5. Planning, Zoning, Health and Incentives (facilitation of resource management programs that are economically and environmentally beneficial to the island)

More specific recommendations include:

Expand organic discard management programs:

- Increase utilization of food banks as a source reduction strategy
- Install educational signs and facilitate home composting with demonstration areas at all transfer stations and landfills
- Develop education, training and initiatives (including “FaRMZ,” facilitated resource management zones) to promote composting on farms and businesses

Redesign landfill and transfer stations into Resource Recovery (RR) Parks:

- Develop Re-stores and Mini-MRFs on at least six sites to accept and sort commingled recyclables and recover and sell reusables
- Establish organic material and rock grinding areas on larger transfer sites
- Install full signage and demonstration areas at all transfer sites

Training and social marketing programs:

- Train the trainers
- Train the technicians and regulators
- Train people and businesses
- Facilitate research required to support sound resource management, including facilitation of public, private, and academic partnerships

Benefits of Zero Waste Implementation

The County currently generates approximately 200,000 tons of discards annually. Assuming separation occurs at the point of generation and is done by generators, “extraction” of raw materials is essentially free, with bins and equipment paid for by sales of materials after final processing and a diversion credit of \$85 per ton.

Over one third or more⁴ of the County’s discards are organic materials that can greatly improve the island’s soil for farming, facilitating the production of more locally grown food while mitigating erosion and runoff, minimizing the need to import expensive pesticides and fertilizers, and conserving irrigation water. These materials include food scraps, yard trimmings and soiled and low-grade papers. Representatives of both the agriculture sector on the Hilo side of the island and the tourist industry on the Kona side have informed consultants that their respective industries could benefit from mulch, compost and compost-amended soils created on the island from discarded organics.

“Hawai’i can realize nearly \$11 million in gross revenue if discards are source separated and captured for reuse, composting and recycling markets.”

At nearly \$5.8 million, the potential for revenue from reuse items is one-third the total value of all discards, even though these materials comprise just five percent of what’s generated. Overall, Hawai’i can realize nearly \$11 million in gross revenue if discards are source separated and captured for reuse, composting and recycling markets.

A multitude of options to gain revenue from discarded materials exist, and include reuse and repair markets, direct sales of raw materials, and value-added products marketed on the island, within state, or overseas. Comprehensive composting, recycling and reuse programs offer the Hilo region of the island an avenue for local economic growth as well as a least-cost and more environmentally-friendly alternative to landfilling, incineration or shipping marketable discarded materials to the Kona landfill.

New rules to get residents and businesses to separate organics from reusables, special discards and recyclables will be required as overarching policies to drive the change, and sample/draft ordinances are included in the appendices of the report.

While consultants profess changes required won’t be easy, other jurisdictions have found ways to overcome challenges and are moving towards Zero Waste with great success. Hawai’i has the opportunity to reclaim the economic and environmental sustainability it once had, provided foresight and diligence accompany efforts to pursue the programs outlined in this plan. Job creation, improved economic stability, cleaner air, water and land, and a healthier, more stable food supply. These are the benefits of Zero Waste.

⁴ Approximately 41% when combining CH2MHill’s composition estimates of 33.1% organics, 25% of 22.4% paper, and 10% of 22.2% C&D (31.1 + 5.6 + 2.2 = 40.9%)