



14. Implementation

14.1 Purpose

The purpose of this chapter is to identify individual tasks and develop implementation timelines for the Plan, as described in Scenario III. This Scenario was recommended by the SWRAC from among five Scenarios created during the course of SWRAC meetings. The SWRAC added the following clarifications to its recommendation of Scenario III: the primary focus of the Plan be the goal of 60% diversion and, secondarily, WasteTEC.¹ The Plan should not specify a single WasteTEC but, rather, determine what is right for the County based on further evaluation. Lastly, the WasteTEC selected must be ‘proven technology’ that, at the planning and design stage, is not limited to mass burn technology.

The Department of Environmental Management and the Solid Waste Division support the SWRAC recommendations for implementation with the addition of the following elements:

- Evaluate land needed for increased compost operations resulting from improved diversion programs;
- Evaluate standby options for Lanai and Molokai landfills while maintaining and improving recycling collection and processing, including event-based collection of HHW;
- Specify the year 2013 to complete legislation for commercial recycling mandates;
- Add from Scenario V the creation of mandates for the recycling of commercially produced food waste;
- Add from Scenario V the enforcement component for commercial recycling mandates

This plan recommends increasing the diversion rate from its current 30 percent to 60 percent, by the County building MRFs for recycling and C&D materials, a fleet maintenance facility, a household hazardous waste facility, and transfer stations in Hana and Olowalu. The plan also tasks the Division with implementing programs for universal collection of single-stream recyclables, bulky waste, white goods, and yard waste; a household hazardous waste program; and education to support each program. In addition, the plan calls for a WasteTEC facility to convert the residue from recycling and non-recyclable materials to energy. The County will proceed with feasibility and implementation planning, culminating in a procurement that is open to various technologies. The use of the term “waste-to-energy” has deliberately not been used to avoid the potential impression that a particular technology has been

¹WasteTEC has been used in this ISWMP to describe a waste-to-energy facility that is a key element of the plan but one where the specific technology has not been selected.



selected or has preference. Any technology selected would be required to meet the County's requirements for "proven" results, economy and efficiency.

Scenario III identifies a number of facilities that are needed to support the activities of the Division and help the County reach its diversion goal. In Chapter 13, it is suggested that, for efficient use of land and reduction of transportation and communication links, grouping the facilities should be part of the plan. A solid waste campus, which would be centrally located, was recommended. Because implementation of Scenario III includes siting studies and land purchase, no specific site was recommended.

For each of the component projects in Scenario III, additional implementation planning will be required involving collective bargaining agreements. A team leader for each project will need to be assigned along with a development budget. The individual implementation tasks in each project timeline will need to be described in detail, a methodological approach developed and resources assigned. For each task, the Division may choose to execute the task in-house with Division staff or utilize consultant assistance. Some activities, such as soil borings and groundwater hydraulic analyses, are typically done by firms that specialize in these activities. In all, there are over 125 individual tasks that make up the nine projects and that will constitute the full implementation plan for the selected scenario.

In this chapter, the components of the scenario are outlined in a narrative summary and Gantt chart for each strategic element.

14.2 Resources for Implementation

Implementing the ISWMP will mean bringing a coordinated team of resources to assist in planning the implementation of the programs the Division has decided to pursue. These resources include designating or retaining project managers to oversee the development of each of the facilities to be constructed and programs to be implemented. The County will bring under contract an Architect and Engineer (A&E) firm to assist the Division for site determination and evaluation and to design the projects in the plan where detailed construction specifications and drawings are required by the bid process, including the transfer station and the fleet maintenance facility. A solid waste management consultant will be needed to draft feasibility studies, full service procurement documents and other required reports. Corporation Council will assure and oversee the legal aspects of these specialized contractual arrangements. A specialty law firm may be hired by Corporation Council to assist in the development of these agreements as well as in any collective bargaining agreements that may need to be considered. A law firm experienced in solid waste matters, including requirements of federal and state laws, negotiating energy purchase agreements with electrical end-users and in developing full service contracts between municipalities and operators of WasteTEC firms, would be beneficial to reduce long-term risks for the County. This law firm would also develop full service contracts with future partners, those who win the proposals, in processing Material Recovery Facilities (MRFs) contracts as well as ordinance revision. An education consultant will be retained by the Division to conduct foundational research for education campaigns and graphic development and integration. In addition, collective bargaining agreements will need to be addressed prior to funding and initiating the implementation of projects that involve the relocation of staff.



Any services procured will be in accordance with State and county procurement requirements. Assembling together a team at the outset of this plan can help the County reduce the implementation time and prepare better to implement the activities it has chosen.

14.3 Site Development

The ISWMP calls for the construction of a variety of facilities. Locations for these facilities must be determined before: contracts for construction and services are procured. The locations must be found, reviewed for adequate amount of land, subsoil characteristics to support the structure of the proposed facility, reviewed for ingress and egress traffic, noise pollution, aesthetic impacts, availabilities of utilities, surface and ground water concerns, determination of any archaeological or protected sites, and land use environmental assessments conformance. The Division recognizes, however, that it may not be feasible to have all these facilities at one central location.

The County and/or its contractor will need to obtain: permits for each site (Generally speaking, these permits are in three categories: site development, utility, and zoning); environmental siting approvals from various levels of government, local and state, dealing with flood plains, community land use requirements, and culturally protected sites; and solid waste permits from state and local agencies for siting, design, and operations.

The ISWMP calls for a Central Maui solid waste campus. This campus will include space for administrative offices for the management, support staff, Central Maui drivers, and Division call center. A fleet maintenance facility will be located at the campus to maintain the fleet for both the collection and the landfill. An HHW facility will be located at the site. A MRF to process the recyclables from the single-stream curbside collection will also be a part of the campus. One or more of the mechanics in the Fleet maintenance facility will be trained to maintain the MRF equipment.

Recommended facilities which may be located outside of the Central Maui Solid Waste Campus are the following:

- C&D MRF to process C&D material. A potential site for such a facility may be the existing private C&D landfill. A location must be determined for the facility and, if need be, acquired by the County before the procurement for design, build, and operate.
- WasteTEC Facility needs a location to maximize the efficiencies in routing, residual disposal, and energy transference to a paying end-user.

Finally, transfer stations and convenience centers, which will be located in Hana and Olowalu or on Lanai and Molokai, will need to be designed and operated by the Division. The A&E firm will be required to assist the Division in the detailed design including drawings and specifications for these facilities.

14.4 Centrally Located Solid Waste Campus

The centrally located solid waste campus was recommended to consolidate facilities and shorten communication and transportation links. It would consist of a number of



related facilities and administrative space. The implementation of each facility is discussed in the following paragraphs. The Division recognizes that it may not be feasible to have all of these facilities at one central location.

The conceptual timelines at the end of each section represent work after the County Council provides funding. It is expected that Council will have staff perform a significant amount of ground work, which will include property location and preliminary negotiations with permitting agencies, before funding is provided.

14.4.1 Single-Stream Materials Recovery Facility

The Division plans to procure a single-stream recyclables materials processing facility to process the material its curbside collection service collects. The Division may consider a public-private partnership using a design, build, and operate procurement process. In that way, the Division would interface with one entity that is responsible for the overall development and operations of this facility. The Division would provide the land for the facility and have ownership of the buildings and the equipment, which could be transferred right after the acceptance test or turned over to the County at the end of the contract term.

This partnership must be developed whereby the Division and the contractor work together to assure completion of tasks. The Division will need to develop performance specifications for the facilities that identify parameters, including daily capacity, residue rate, products recovered and marketing requirements. Also, the County will need to provide site data including meets and bounds, soil data and site drawings. Engineering studies to establish soil conditions and infrastructure requirements are best conducted by the Division or its A&E firm prior to procurement. Engineering studies needed for the approval and construction of the MRF would be the responsibility of the contractor. Also, construction of the building and the procurement of equipment would be the responsibility of the contractor but must be equal to or above the standard of quality set by the County.

Designed into the cost and square foot estimates for this facility is office space to house the Division's administration. The Division could move its offices from downtown Wailuku to the centrally located solid waste campus. By doing this, management and operations will be linked closer and have more interface with each other.

This facility would be located in the centrally located solid waste campus. The recommended steps are:

- Select an A&E firm for site studies
- Designate location;
- Submit to the County Council for funding approval;
- After funding approval, develop design, build, and operate procurement documents and release them in a request for proposals format;
- After funding approval, procure needed property;



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The recommended steps are:

- Develop job requirement and work outline for Household Hazardous Waste Manager and provide that and cost projections of the program to Council for funding;
- After funding is approved, the Division should hire a candidate to fill the position, a national search may be required;
- After the position is filled, the manager begins to develop a procurement package for an HHW disposal contractor;
- A site for the location of the permanent HHW facility will have been chosen and acquired, as part of the Solid Waste Campus. The Division will develop the bid specifications and drawings necessary to support A&E procurements for the construction and equipment needed for the facility.
- The Division and its A&E contractor will work with the appropriate permitting agencies to fulfill all permitting requirements;
- Education for a new program will begin with research including, but not limited to, focus groups and a brainstorming session involving HHW manager, HHW contractor and environmental education professionals in the Division. Graphics and media strategy will be created and prepared before the first collection;
- HHW technicians will be hired and/or transferred from other positions to assist the HHW manager in everyday activity and/or event collection. Rules and procedures will be devised by the HHW manager for every aspect of operating the fixed facility and event collections;
- Training of call center operators on HHW so as to better inform citizens who call in; and
- Before the final construction of the permanent facility, three event collections are scheduled where the Division staff progressively takes over more of the hands-on duties from the proposed HHW disposal contractor.

Total time: 24 months from initiation of project. Table 14-3 is a timetable showing tasks and subtasks for this project.



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Division and the contractor. Construction of the building and the procurement of equipment would be the responsibility of the contractor but must be equal to or above the standard of quality set by the County.

The location of the facility must be in the central Maui area but not necessarily within the Solid Waste Campus. One possible site is at the existing private C&D Landfill and it could potentially be a partnership between the County and the current operator. Alternatively, the C&D facility could be co-located with the MRF. The recommended steps for the development of this project are as follows:

- Designate location;
- Submit to the County Council for funding approval;
- After funding approval, develop design, build, and operate procurement documents and release them in a request for proposals format;
- After funding approval, procure, if necessary, needed property;
- Conduct site tests to provide foundation engineering data to be included in the procurement documents.
- Develop the bid specifications and drawings necessary to support A&E procurements for the construction and equipment needed for the facility. After the County has executed the contract with the winning proposer, work together to determine final layout of the site and receive permitting approvals;
- As many of the permit approvals are in process, the contractor finalizes construction documents and then awards; and
- Research on education strategy is performed at one time for all the Division's solid waste programs. Implementation of the education strategy begins before the MRF opens for processing. The MRF is expected to receive material from all sources, private and public.

Total Time: 42 months from initiation of project. Table 14-4 is a timetable showing tasks and subtasks for this project.



Table 14-5 - Olowalu Transfer Station Conceptual Timetable

Olowalu Transfer Station	First Year												Second Year												Third Year												Fourth Year											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Funding Approval																																																
Conceptual Design																																																
Procurement Development																																																
Procurement Process																																																
Contract Negotiations																																																
Determination of Final Site Layout																																																
Permitting - Government Approvals:																																																
Zoning																																																
Site Plan-Final Design and Approval																																																
Special Use Permit																																																
Environmental Assessment																																																
Traffic Study																																																
Erosion Control and Storm Water Permits																																																
Permit																																																
Final Construction Document Preparation																																																
Construction																																																
Operation																																																

14.5.3 Hana Transfer Station

Scenario III calls for placing the Hana Landfill on Standby with Permit. This transfer station would be designed as a convenience center to collect and haul recyclables and refuse. Roll-off containers would be provided for items that can be recycled. Trash would be placed into a rear-load trash truck and additional containers when trucks are unavailable. Every two days, the rear-load truck will be transported to CML and an empty truck will take its place in the transfer station. The facility will be located on the site of the existing Hana Landfill. The design of this facility will be through the Division’s A&E and a bid package used to select a construction contractor.

The recommended steps are:

- The Division creates a conceptual design with cost projections to provide the Council for funding approval;
- Develop the bid specifications and drawings necessary to support A&E procurements for the construction and equipment needed for the facility. After the County has executed the contract with the winning proposer, work together to determine final layout of the site and receive permitting approvals;
- With the contractor, the Division shall finalize site layout;
- Obtain permits, including permit by rule or modification of current permit; erosion control and storm water permits;
- During permit approval, the site layout plans will be finalized; and
- Construction and the placement of equipment will be completed.

Total time: 20 months from initiation of project. Table 14-6 is a timetable showing tasks and subtasks for this project.



Table 14-6 - Hana Transfer Station Conceptual Timetable

Hana Transfer Station	First Year												Second Year												Third Year												Fourth Year											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Funding Approval																																																
Conceptual Design																																																
Procurement Development																																																
Procurement Process																																																
Contract Negotiations																																																
Determination of Final Site Layout																																																
Permitting - Government Approvals:																																																
Zoning																																																
Site Plan-Final Design and Approval																																																
Special Use Permit																																																
Environmental Assessment																																																
Erosion Control and Storm Water Permits																																																
Permit																																																
Final Construction Document Preparation																																																
Construction & Equipment																																																
Operation																																																

14.6 WasteTEC

Scenario III has as its primary goal a high level of recycling, 60 percent of the waste generated in the County, with a WasteTEC facility to handle the 40 percent that is not recycled plus the suitable residue from the recycling facilities. This facility will be located on the Island of Maui and in a central location. Locating the WasteTEC facility near the CML would minimize the hauling of ash, the waste product of a WasteTEC facility, to the landfill. It is expected that this facility would be located in or near the centrally located solid waste campus. The recommended procurement strategy is for the County to hire a single contractor to be responsible for the design, construction, and operation of the facility under a long-term service agreement.

Essentially, the County must take the following steps:

- Make a general assessment based on recent and completed feasibility studies;
- Initiate public education on WasteTEC as part of the overall public education program;
- Prior to the procurement, secure the site for the facility;
- Negotiate letter of intent with Maui Electric for the energy it would produce;
- Update the feasibility study already included in this ISWMP;
- Develop procurement documents with performance and technical specifications, draft the service agreement for design, construction and operations of the facility, and solicit for proposals;
- The procurement will be structured so that a spectrum of technologies can compete if they meet the specifications for performance, reliability, demonstrated experience, financial guarantees, and other key measures.



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- After the service agreement with the selected proposer is executed, the contractor will provide the final design of the facility to the Division.
- Construction will take approximately 24 months, after which a testing or “shake-down” period will occur before full-scale operation; and
- An education strategy will have to be developed for the WasteTEC facility. A media strategy will be developed so as to adequately inform the press, the public, and customers as to the purpose and energy benefits of the facility, and the environmental impact of the process.

Total time: 57 months from initiation of project. Table 14-7 is a timetable showing tasks and subtasks for this project.

Table 14-7 - WasteTEC Implementation and Construction Conceptual Schedule

WasteTEC	First Year												Second Year												Third Year												Fourth Year												Fifth Year											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Implementation Tasks																																																												
Analyze Feasibility of WasteTEC Facility																																																												
Siting Study & Acquisition																																																												
Obtain Zoning and Land Use Approvals																																																												
Negotiate Letter of Intent for Energy																																																												
Develop Procurement Documents																																																												
Technical & Performance Specs																																																												
Draft Service Agreement																																																												
Solicit Proposals																																																												
Evaluation of Proposals																																																												
Contract Negotiation																																																												
Final Design and Approval																																																												
Permitting																																																												
Arrange Financing																																																												
Construction																																																												
Education Information																																																												
Shake-down and Acceptance Test																																																												
DEO-Certificate to Operate																																																												
Commercial Operation																																																												

14.7 Universal Collection: MSW, Recycling, Bulky Waste, White Goods, and Yard Waste

The SWRAC recommended and the Division supports the recommendation to implement 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;
- Yard and large green waste collection pilot using carts, paper bags, or bundled, and/or 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.

14.7.1 MSW

The Division supports the implementation of the following:

- Reduce collection of MSW to one time a week; and
- Discontinue manual collection and have only automated and semi-automated collection.

The Division will submit a request for funding to Council for additional automated and semi-automated equipment, for the cart lifters that need to be placed on the County's existing rear load collection vehicles, and carts.

Maui Code and administrative rules should be reviewed to determine needed revisions to be done prior to implementation.

They include the following:

- Definition of semi-automated collection;
- Definition of Bulky Waste that limits material to large items inorganic items such as furniture and mattresses;
- Eliminate references to manual collection; and
- Eliminate all references to garbage collection of more than once a week. There will be no bags allowed to be set out but there can be two wheeled carts set out for weekly collection.

14.7.2 Recycling

Scenario III calls for the Division to provide curbside collection of single-stream recyclables as part of residential universal collection. The collection of such materials on the Island of Maui will have to be implemented after a MRF is operating in order to process the newly collected material. The Islands of Molokai and Lanai, however, may collect and ship to a processor on Oahu after such a contract has been procured by the Division.

As the curbside recycling is implemented, an ordinance to limit trash collection to once a week and to a limited number of carts would go into effect. Balance between once-a-week trash collection and every-other-week recyclables collection would be in effect. This will allow the Collection Section of the Division to utilize its employees and equipment so as to minimize costs and maximize work.

To implement curbside recycling collection, equipment must be procured and delivered, trucks must be routed, personnel trained, and an education program must be devised and implemented.

The recommended steps to implement this program are:



14.7.3 Bulky Waste and White Goods

White Goods and Bulky Items collection is not dependent upon the construction of a MRF. The implementation of the collection of these materials can begin in many parts of the County as soon as the necessary ordinances are passed.

Scenario III calls for the curbside collection of white goods on all three islands and the region of Hana by appointment. Citizens call into the customer service center, are given a date to set their material out at the curb, and a collection truck will come by to collect the material. The Division will have to purchase trucks for this kind of collection to augment its fleet of one flatbed truck with a liftgate. It has been recommended that a combination of flatbeds and knuckle-boom collection vehicles be purchased so as to be utilized for many different collection tasks, such as delivering carts and storm debris collection.

White goods will be delivered to a processor to be recycled. The bulk items will be disposed of through the Division's WasteTEC or landfill. Any white goods and bulk items that can be reused will be diverted to the private sector for reuse.

Bulky waste (e.g., furniture) collection will mainly be collected by a rear-load truck in the Hana Region and on Molokai. On Lanai, a flatbed or knuckle-boom would be used for its collection. The region of Hana and the Island of Molokai will collect bulky waste on the same day as the collection of garbage. Citizens simply set the material out with their household trash and the Division will coordinate the collection. Central Maui and Lanai will collect Bulky items by appointment.

The recommended steps are:

- Funding approval from Council for the purchase of additional equipment;
- Division shall procure for the approved additional equipment and oversee its contract and delivery;
- Point-to-point routing software shall be purchased and implemented for the collection on the Island of Maui;
- Education strategy will be developed using results of focus groups and brainstorming session. Material for media will be created as will a new section on the Division's website, and training of call center operators so as to respond in an informative manner to customers who seek information on these kind of collections; and
- Collection crews will be educated (1) as to what items to collect, (2) to note if they see such material sitting out at the curb, and (3) about the purpose of implementing the program.

Total time: 13 months from initiation of project. Table 14-9 is a timetable showing tasks and subtasks for this project.



Table 14-9 – Bulky Waste and White Goods Conceptual Timetable

Universal Collection: Bulky Waste and White Goods	First Year												Second Year												Third Year												Fourth Year											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Funding Approval																																																
Procure & Contract Equipment																																																
Delivery of Equipment																																																
Routing:																																																
Point to Point Routing Software																																																
Routing Software Training																																																
Education:																																																
Contract Education Consultant																																																
Brainstorm Session																																																
Decision on Media Strategy																																																
Develop Logos/Slogans/Website																																																
Call Center Operator Training																																																
Collection Crews:																																																
Develop Job Requirements																																																
Approve Position Hiring/Transfers																																																
Train Personnel																																																
Operate																																																

14.7.4 Yard Waste

Although the SWRAC recommended a goal of universal collection of every other week, the Division will have to move toward that goal in conjunction with the ability of local processors to handle the material. The Division’s current contractor for the processing of green waste is at capacity. It is estimated that the contractor would need an approximate twenty (20) acres to process more yard waste in Central Maui. Such land will have to be procured by the County and provided for the processing of yard waste before curbside collection of yard waste can occur on the Island of Maui.

The Division is currently pursuing discussions with potential processors of yard waste on the Island of Lanai. A processor will need to be contracted before collection of yard waste is implemented on Lanai. The same is true for the Island of Molokai.

When processors are contracted for yard waste, the Division will implement pilot collection programs using an assortment of collection methods: yard waste in carts and collected by automatic side loaders and/or rear loading collection vehicles.

Once the Division has determined what its collection program will be, it acquires the needed containers and education material and begins implementing the program.

14.8 Call Center

Scenario III calls for a consolidation of citizens’ calls and inquiries to the Division through a customer call center where all requests will be tracked, work orders created, and services tracked. The call center does not need to be located in the solid waste campus but may, if all the administrative functions are located there. Its functional requirements are sufficient telecommunications and server capacity. The work order system will integrate with the Division’s routing software to better track activities and customer service. The Division will be able to run reports tracking level of calls related to each service activity performed by the Division, close work orders, track

