

## **For EMC Discussion: County Ordinances to Significantly Reduce Landfill Waste Volume**

*Background for paper presented 2/22/23 and 3/29/23 option #1 - Landfill Bans*

One effective way to achieve diversion from landfilling wastes would be to ban certain wastes from disposal in a landfill, whether by residents or commercial entities.

Currently only some wastes are prohibited from landfill at WHSL as “special waste” generally because they are classified as “hazardous” under EPA or state regulations. For the most part, the county has provided or directed companies to facilities that most residents and businesses can bring these wastes. These facilities ensure the majority of material is recovered for reuse or will transfer the waste to appropriate disposal in permitted hazardous waste facilities. Currently banned from WHSL:

- used motor oil (a toxic hazardous leachate, feasible recycling for DIY and commercial users)
- used lead-acid batteries (hazardous, but also feasible to recover lead for reuse, have upfront disposal fee)
- medical wastes (hazardous, collected by drug stores and police offices)
- used tires (fire hazard if landfilled, feasible recycling, upfront disposal fee)
- large appliances/white goods (not hazardous unless they contain CFC coolants, but also viable commercial scrap metal recycler demand)
- derelict vehicles (viable scrap metal recycling, up front disposal fee via registration)
- other commercial wastes defined and regulated as “hazardous”

Additional “special wastes” could be added as “designated recyclable wastes” that are prohibited from landfill when minimum reuse/recycle **feasibility criteria** are met such as:

1. **Collection locations** are readily available to the majority of residents (eg, transfer stations and other county locations such as the HER greenwaste site at WHSL, arrangements with retail/service providers and special collection events), as well as for commercial generators (county facilities or service businesses exist on island with whom businesses can contract to take recyclable materials. Inevitably, there will be rural locations where there is no easy transport to recycle locations. Special accommodation may be necessary to help with collection for these generators to avoid illegal dumping or variances to allow landfill.

2. **Reasonable fees** for disposal/reuse/recycling are or could be required at purchase or at collection locations which are not so excessive as to encourage illegal dumping.

3. **Reuse or recycling is economically feasible.** Costs should not exceed the value of the recovered materials plus fees. This is a function of markets and technology and will change over time. In general, the landfill ban should result in a steady feedstock to support reuse/recycling operations.

4. **Life cycle** environmental costs do not exceed the value of the recovered material plus the benefit of landfill diversion (eg, global warming contribution due to transportation and processing, health and safety of reuse/recycling operations, and energy costs).

5. **Education** programs and adequate supporting assistance is and will continue to be available from the county.

6. **Significant portion** of currently landfilled waste by volume is represented by the designated recyclable waste. [note: most tables track weight and not volume]

An algorithm could be developed with a minimum total score or weighted score of the above feasibility criteria. There should be periodic updates to scoring and addition of candidate designated recyclable waste as markets and technology changes.

The first candidates as designated recyclable wastes prohibited from landfilling are those with already existing viable recycling activity. Below are a couple examples [to be further developed].

#### **HI5**

1. multiple venues exist for collection (although they can be increased especially for public gathering places – parks, beaches, community events)
2. current fees are not driving illegal dumping. Redemption results in income for collection parties.
3. consumer deposit fees of 5 cents and ADF for manufacturers of 1 cent could be raised to more fully cover program costs. It has been argued that consumers could accept a 10 cent deposit fee, but this should be studied. Illegal dumping can be addressed by various programs (see 2019 ISWMP CH 10-9)
4. LCA results *TBD*
5. HI5 program is well known to residents. Not so sure about tourists. Additional education and provision of collection services at resorts would help. Higher redemption would increase recycling.
6. HI5 does not present a high volume as currently structured (crushed containers have low volume) ~ <1%. Adding wine and liquor bottles could increase volume diversion.

#### **Green Waste** (landscape, not food)

1. Collection sites exist at an increasing number of transfer stations and at WHSL and Hilo. Could be improved (more locations, better logistics and staffing). Coordination with decentralized composting would also help.
2. Fees are favorable - commercial rate (1/2 trash), residential is free. Need study on whether possible to increase.
3. Recycling costs – HER contract represents a hurdle to favorable economics. County pays high cost for recycling. Mulch is given away free, even though there is high demand. Mulch is also not converted to compost for higher value. Must be improved.
4. Life cycle favorable with proper management (pests and fire)
5. Education – pretty well known

6. ~7% volume reduction opportunity. Much higher if total organics added.

### **Corrugated Cardboard**

1. Collection sites exist. Residential collection at transfer stations and private haulers. Commercial generators can use recyclers – Atlas, Business Services Hawaii – directly or via commercial haulers. Big box stores directly ship to mainland.
2. Fees are favorable - commercial rate (1/2 trash), residential is free. Need study on whether possible to increase.
3. Recycling costs are favorable, although market fluctuates, it is relatively strong.
4. Life cycle TBD – no recycling on island except for minor shredding for compost.
5. Education – fair. Contamination at transfer stations is apparent. Understanding what “corrugated” means limited or residents doing wishful recycling.
6. 8%? Much higher if could add other paper types. Currently inadequate ROI for the volume of other paper types generated on island.

### **Glass (nonHI5)**

1. Collection sites exist. Residential collection at transfer stations and private haulers. Commercial generators – unknown
2. Fees – zero at transfer stations, treated as regular waste by weight for commercial disposal at WHSL.
3. Recycling costs – grinding occurs on island for use as fill and landscaping, so presumed to be favorable. Reuse economics needs study.
4. Life cycle -TBD. On island recycling is favorable. Reuse would be better, but not happening now.
5. Education – fair. A lot of HI5 beer bottles go into glass containers.
6. ~8% all glass.

Other categories to explore in the short term could include reusable materials from construction/demolition and scrap metal

*Examples of waste types not yet ready for landfill ban:*

### **Electronics**

1. *Limited collection sites and limited types of electronics covered by current EPR program. Noncovered electronics (eg small appliances) if still working may be accepted by Reuse Centers and thrift stores.*
2. *Fees covered by manufacturers under new law, previously small fees upon collection*
3. *Recycling costs – not really favorable, but there are offsets for recovered specialty metals and possible reuse after refurbishment. Not available on island.*
4. *Life Cycle – TBD*
5. *Education – TBD*
6. ~1% not significant

### **Plastics other than HI5**

1. *Limited collection of #1 & 2 at Business Services Hawaii location.*
2. *No current fees. Would need study to see if it would be possible to expand HI5 type collection or look at EPR.*
3. *Recycling costs are not favorable – limited and highly variable market value and high processing/sorting and transportation costs for most plastics. Even BSH requires clean streams.*
4. *Life cycle – TBD*
5. *Education – TBD. High contamination issues with previous programs.*
6. *~8% By weight total plastic. Containers at 2%, film ~3% and durable and composites 4%*