



Office of the Auditor  
465 S. King Street  
Rm. 500  
Honolulu, HI 96813  
Ph. (808) 587-0800

Jan K. Yamane  
Acting State Auditor  
State of Hawai'i

#### Recyclable Materials Market Value in California

Material	Market Value
Glass	\$2.76 ton
Aluminum	\$1,720 per ton
#1 PET plastic	\$395 per ton
#2 HDPE plastic	\$464 per ton

# A Study to Identify Local Alternatives to Shipping Non-Deposit Glass out of the State of Hawai'i

Report No. 14-17, December 2014

## *Combination of alternatives are needed to down-cycle a significant volume of glass in Hawai'i*

Senate Concurrent Resolution No. 74 of the 2014 Legislature asked the Auditor to examine local alternatives to shipping non-deposit glass containers out of the State for recycling. We contracted with Oceanit Laboratories, Inc., to conduct the study. In this, the second of two reports, the study found there is no one single alternative option that would remove all or most non-deposit glass from the waste stream in Hawai'i. The study emphasizes that glass is a low-value commodity which makes nearly every option—including recycling, down-cycling, or disposing glass in a landfill—costly to implement.

## **There are many local uses for glass, but all require varying levels of support**

The report identifies several opportunities for large volume down-cycling uses in Hawai'i. *Down-cycling* is the process of converting waste glass into new materials or products of lesser quality and reduced functionality. *Recycling* means to melt the glass containers and make them into another glass product. Using criteria such as cost, potential demand, health and safety, environmental impacts, and industry or public resistance, the study identified and assessed nearly a dozen alternative local uses of down-cycling glass. These options include using glass for non-structural backfill, agricultural soil amendment and ground cover, traction and mud abatement, and filtration media. The study also categorized alternatives by those that would be the simplest to implement; those that represent the highest value; and those that would produce the best long-term results. The report notes that a combination of these down-cycling alternatives is necessary to produce notable results due to industrial and market fluctuations.

## **Policies have created barriers to local uses for post-consumer glass**

The study found the interaction between the advance disposal fee (ADF) and the deposit beverage container (DBC) programs creates inefficiencies in the recycling or down-cycling of glass. Both programs involve the same commodity but create two categories of glass that are subject to different rules and policies. This also increases costs as the glass must be separated manually to identify glass that falls under each program. Further, space is limited for recyclers, so it is more efficient for some counties and recyclers to treat both DBC and ADF glass the same and ship it all to the mainland for recycling.

The study also found that current laws are ambiguous on whether the State prefers to down-cycle or recycle. For example, the Department of Health promulgated a draft policy to help regulate the recycling of DBC and ADF glass. However, the department contends the policy does not necessarily apply to ADF glass which creates confusion for the counties and recyclers. Further, the study states while counties and recyclers believe they are not allowed to stockpile glass due to onerous regulatory restrictions, the department claims its glass policy does not restrict glass stockpiling.

In order to provide clarity to stakeholders regarding what is permissible regarding both DBC and ADF glass, the study suggests the department update and finalize its 2008 policy on glass recycling. The study recommends the policy, which currently encourages recycling over down-cycling, should equally emphasize both methods. Other areas the policy should be updated include glass stockpiling, listing approved down-cycling options, and increasing the recovery rate for ADF glass containers to roughly the same redemption rate achieved by the DBC program.