



**Reusable Foodware:
Hilo Community
Engagement**





Zero Waste Hawai'i Island

Our Mission: ZWHI connects diverse Hawai'i Island Communities to support equitable systems redesign and policy change to achieve zero waste.





NO POHŌ

New Refillable Glass!

\$.50 Discount
When you return these (RINSED) re-fillable glass bottles to The Locavore Store.

Returned bottles should be:

- Rinsed/Free of debris
- Not broken
- Not Chipped
- Not Cracked



Our Team



Jennifer Navarra
Program Director



K. Kuulei Kanahele
*Cultural Advisor
Outreach Coordinator*



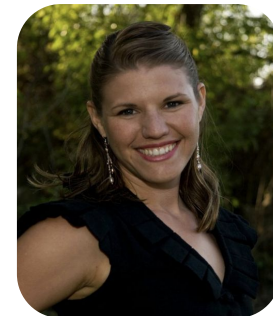
Ellen Okuma
Community Liaison



Laurie Rich
Operations Advisor



Devin Brown
*UH Hilo
Bonner Student
Intern*

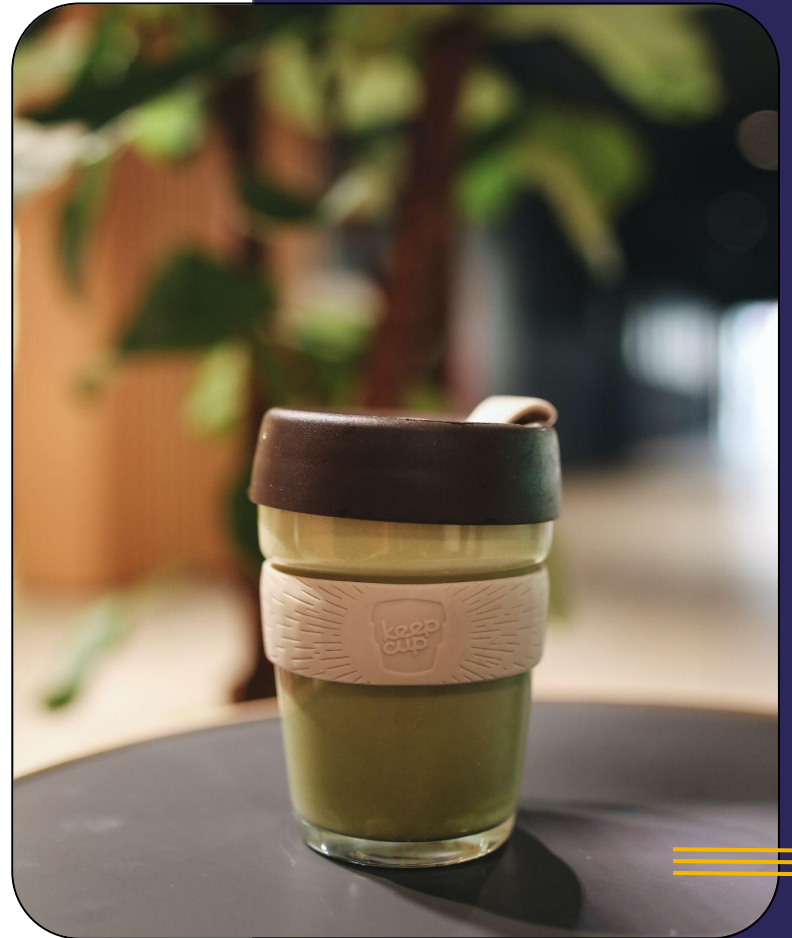


Katrina Zavalney
*Strategic Planning
&
Org. Development*



PERPETUAL

Partnering at the community level to support the design and implementation of reuse systems — **starting with foodware**





Our first four partner cities



Ann Arbor, MI

Population: 122,000
Food Service Establishments: 400+
Local Water Bodies: Huron River, the most microplastic-polluted tributary to the Great Lakes
Other Commitments: 2030 Climate Neutrality Plan, which includes reuse of materials as a strategy.

Galveston, TX

Population: 53,000
Food Service Establishments: 200+
Local Water Bodies: Gulf of Mexico and the base for the Flower Garden Banks National Marine Sanctuary
Other Commitments: 2020 Galveston Bay Watershed Aquatic Action Plan, which includes reducing single use plastic.

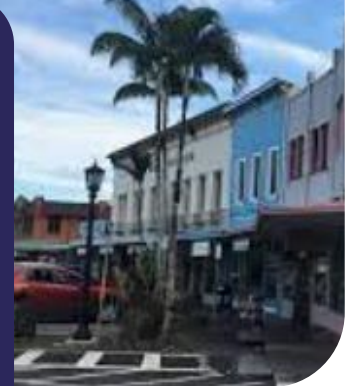


Savannah/Chatham Cty

Population: 147,000
Food Service Establishments: 600+
Local Water Bodies: Atlantic Ocean and located adjacent to Gray's Reef National Marine Sanctuary
Other Commitments: City Council passed resolution to phase out single use plastics including plastic cups, utensils, and EPS takeout containers. (2021)

Hilo, HI

Population: 44,000
Food Service Establishments: 200+
Local water bodies: Pacific Ocean and near the Papahānaumokuākea Marine National Monument
Other commitments: Hawai'i nearly passed an Extended Producer Responsibility bill that would fund reuse infrastructure. (2022)





Perpetual Team



ELLIE MOSS
Executive Director

Lead author of [Sea of Opportunity](#), [The Dirty Truth about Disposable Foodware](#) and [Reducing Plastic Pollution: Campaigns That Work](#), and led the work to create the [Living Landscape of Reusable Solutions](#)



DR. DAGNY TUCKER
Chief of Strategy and Systems Design

Started [Vessel Works](#) and Vessel Revolution, Inc., experience implemented systems from design to forward and reverse logistics, asset management, IoT technology, distribution, health and safety, point-of-return, and LCA analysis



Marty Miles
Galveston Business Engagement Manager

Seasoned hospitality corporate executive, Hotel and Resort multi-unit operator, owner of small businesses and committed to successful implementation of city wide reusable foodware in Galveston Texas.



AUTUMN BUFORD
Circular Systems Specialist

[Reuse Funding Research](#) project lead researcher, internal guidance document for the [Reusable Packaging Association](#) on reusable transport packaging in ESG frameworks



CALISTA MILLS
Physical Scientist

Guest team member from the [US Environmental Protection Agency \(EPA\)](#) Gulf of Mexico Division



Ziyu Ren
Data Science Intern

Undergrad at UChicago, experience in geospatial data science for city-wide reuse systems, large-scale behavioral change researcher



Our collaboration model

WORKING ACROSS CITIES

Perpetual

Project management
Technical & system design expertise
Cross-city learning group

Academic Partners

Circular Assessment Protocol
LCA parametric modeling
GIS volume modeling & optimization

Corporate Partners

Engage in design process
Share data on packaging volume &
packaging assortment

Behavioral Science Advisors

Education & communication expertise
Messaging campaigns



WITHIN EACH CITY

Lead Local Partner

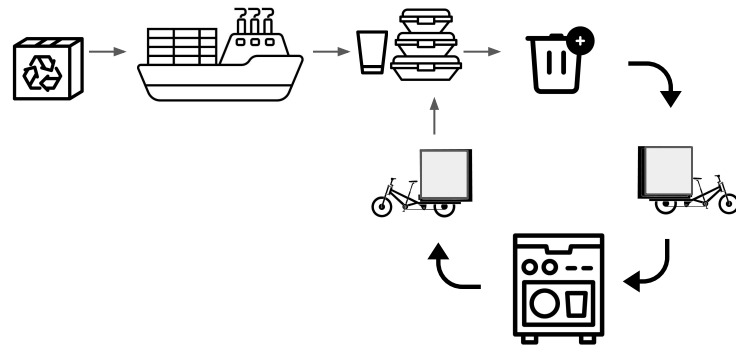
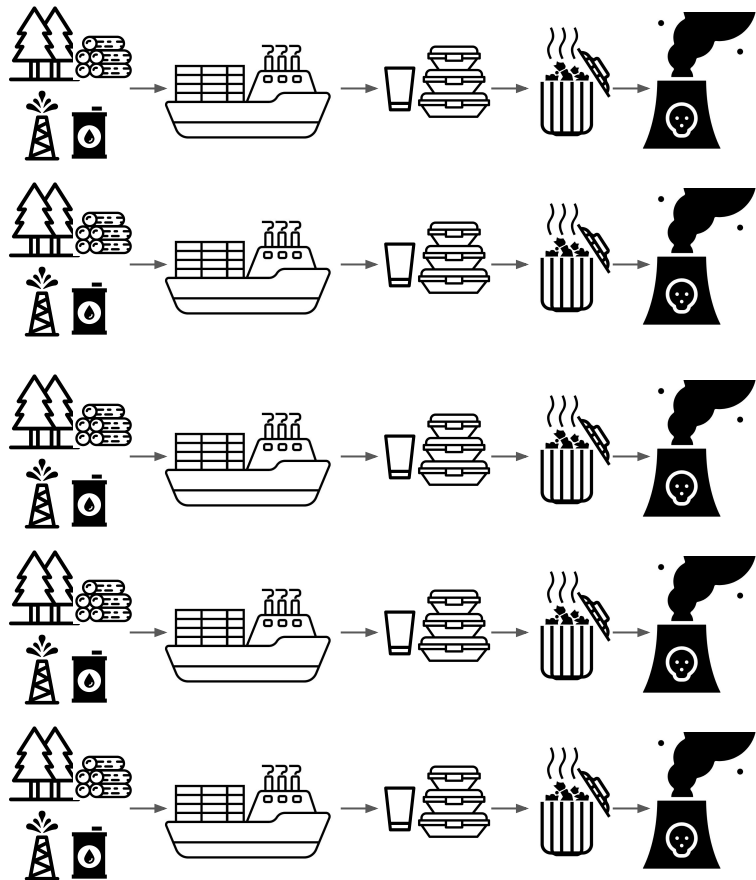
Main point of contact in community
Business engagement
Volunteer management

City Governments

Champion the program & build support
Inform governance model
Potential to invest in / own infrastructure

Reuse Service Providers (TBD)

Assets & asset management
Washing & sortation
Forward/reverse logistics

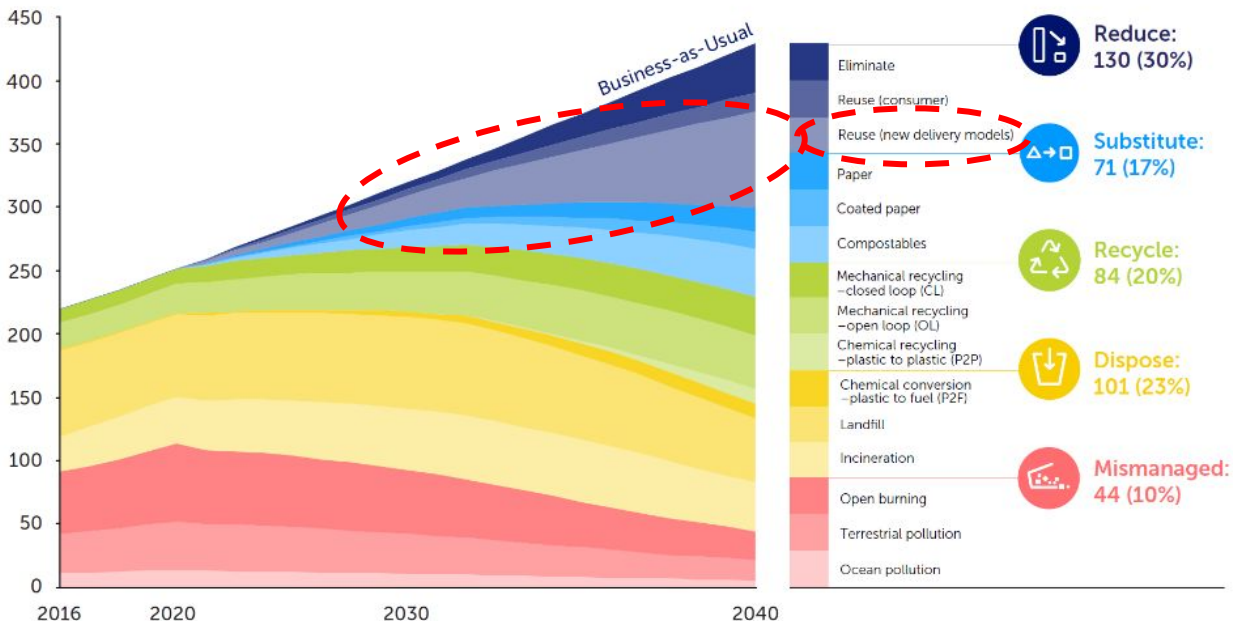


Reuse just makes
more sense than
'disposable'



Reuse is a critical solution to plastic waste and pollution

Million metric tons per year



This "wedges" figure shows the share of treatment options for the plastic that enters the system over time under the System Change Scenario. Any plastic that enters the system has a single fate, or a single "wedge." The numbers include macroplastic and microplastic.

Reuse is the largest lever for reducing plastic waste and pollution



Successful reuse systems have many benefits

Economy

Comparable cost for businesses

Reduced sourcing risk for businesses

Money stays in local community

Less waste for community and county to manage

People

Better eating and drinking experience

Reduced exposure to chemicals of concern

Good local jobs

Income source for collectors

Point of community connection

Environment

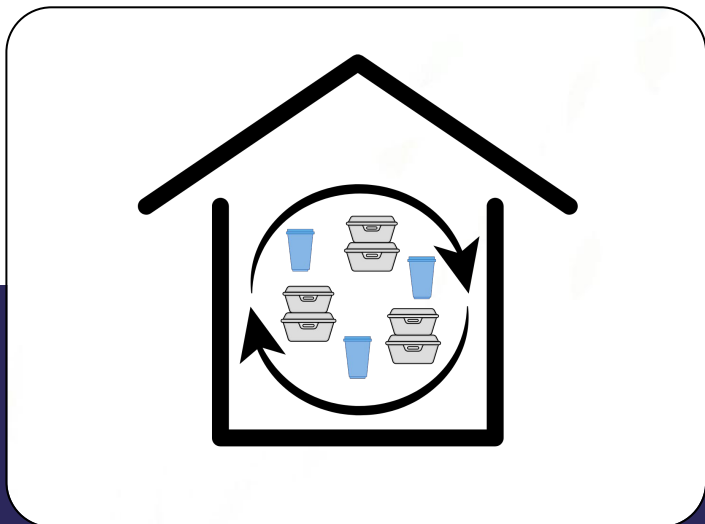
Less litter/pollution

Reductions in toxic emissions associated with extraction, transport & manufacturing of single-use plastics

Reductions in net GHG emissions and other impacts



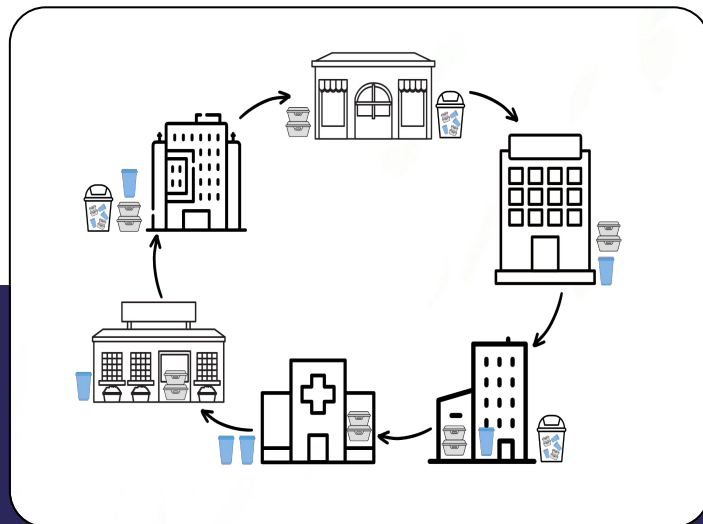
CLOSED LOOP



Reusable items circulate within a single location

Success stories at international and event scale: [r.cup](#), [Re:Dish](#)

OPEN LOOP



Reusable items circulate within a neighborhood or city

75 programs in U.S. & Europe currently, with proven tech for tracking, logistics, washing — but still small scale: [Dispatch Goods](#), [Bold Reuse](#).



Businesses pay a low per use fee for each reusable they provide to a customer



Check Out

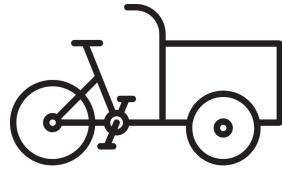
Customers receive food and drinks in reusable containers. Reusables are free to customers as long as they return them



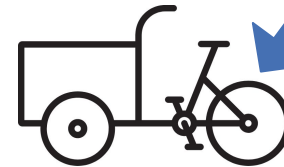
Collect

Return bins are conveniently located all around town so that returning something is nearly as easy as throwing it in the trash

How Reuse Works

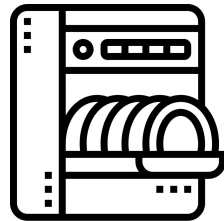


Redistribute



Transport

Collection, cleaning, and redistribution provide good local jobs



Wash & Dry

At a centralized washing facility, staff clean, sanitize, inspect and repack reusable items

★ Businesses are (re)stocked with reusable items



Example: Tim Hortons, ShareWares, Return-It, and City of Vancouver





Example: DeliverZero, NYC



80+ restaurant partners in New York City



Example: Dispatch Goods, USA



Saved over 1,304,325 single-use items from entering the waste stream



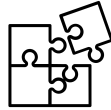
Immersive Scale is Key

Reuse works best when the whole ecosystem is in place

- Many - ideally most - restaurants offer at least one reusable item, ideally as the default option
- Collection bins, washing infrastructure and logistics in place
- Clear and consistent signage and behavioral cues for users
- High volumes of items keep per use costs low and reduce environmental impacts of system



Our approach



MAPPING & ENGAGEMENT

Is there interest?

Local partners

Circularity Assessment Protocol

DESIGN PHASE

Community Design Workshops

Identify community assets

Life Cycle Assessment

SYSTEM SETUP

Establish local entity

Secure providers, equipment, space, permits

Enroll businesses

PRE-LAUNCH

Outreach and education campaigns

Install and test all equipment

Get ready!

LAUNCH

All systems go!

Lots of hands-on support for first several weeks +

SYSTEM IMPROVEMENTS

Monitor system performance

Make changes to help the system work better and better over time



Fundamentals of system design



ECONOMIC VIABILITY

- Cost neutral to users
- Comparable to cost of disposables for businesses
- Self-sustaining program



ENVIRONMENTAL VIABILITY

- Minimize GHG impact
- High efficiency washing
- High return rates



TECHNICAL VIABILITY

- Safe containers / cups
- High quality assurance washing systems
- Well managed operations



SOCIAL VIABILITY

- Design system for everyone
- Options to use without a smartphone, credit card, or bank account



Perpetual's role in the process



Support cities, community groups and members, and businesses to design the reuse system that will work best for them using a community-driven design process.

Bring technical expertise to optimize reuse system design.

Mobilize funding for infrastructure and transition costs.

Facilitate the selection of reuse service providers to play a role in operating the system.

Provide on-the-ground support for system set up and launch.

Share best practices and provide tools and templates for other communities to guide the creation of their own systems.





Our Funders



Pending proposals:

- EPA SWIFR Grant for Reuse Infrastructure - \$1.5M - Hawai'i County
- EPA REO Grant for Reuse Outreach and Education - \$450K
- Multiple foundations: \$500K+
- EPA Pollution Prevention Grant - Hawai'i Sea Grant - \$623K
- Hawai'i Community Foundation Aloha 'Āina - ZWHI - \$65K



Our Partners

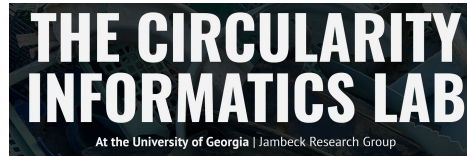
Local Partners



ZEROWASTE.ORG



Academic Partners



Program Partners



A top-down view of a wooden table with various items. In the center, there is a white bowl of yogurt with fruit and a white cup of coffee. To the left, a hand is pouring water from a glass pitcher into another pitcher. There are several other coffee cups, a plate of pastries, and an open book on the left. The scene is lit with a soft, blueish light.

What feedback and insights does EMC have regarding this project?



Discussion and Questions

- What feedback and insights does EMC have on this project?





A few closing questions





Engage with us



 perpetualuse.org

 [@perpetualuse](https://www.linkedin.com/company/perpetualuse)

Ellie Moss ellie@perpetualuse.org

Thank you!



Community engagement fundamentals

Prior to design workshops

- Get community members involved in design of workshops
- Get the word out in all relevant languages: local media, social media, partners

Make it easy to attend

- Hold workshops in a public space with good transport options
- Varied days/times/duration
- Childcare and food available for all
- Stipends for community members who need it

At the workshops

- Interactive and experiential as much as possible
- Many ways to provide input: spoken, written, open form, survey, ...
- Provide both in-person and online opportunities to participate