

Envisioning a World with Less Plastic: Determining the Feasibility of a Reusable Takeout Container System for Hilo, HI



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What is an RTCS?

Overview

¹ Background

³ One Possible Solution

² Problem Statement

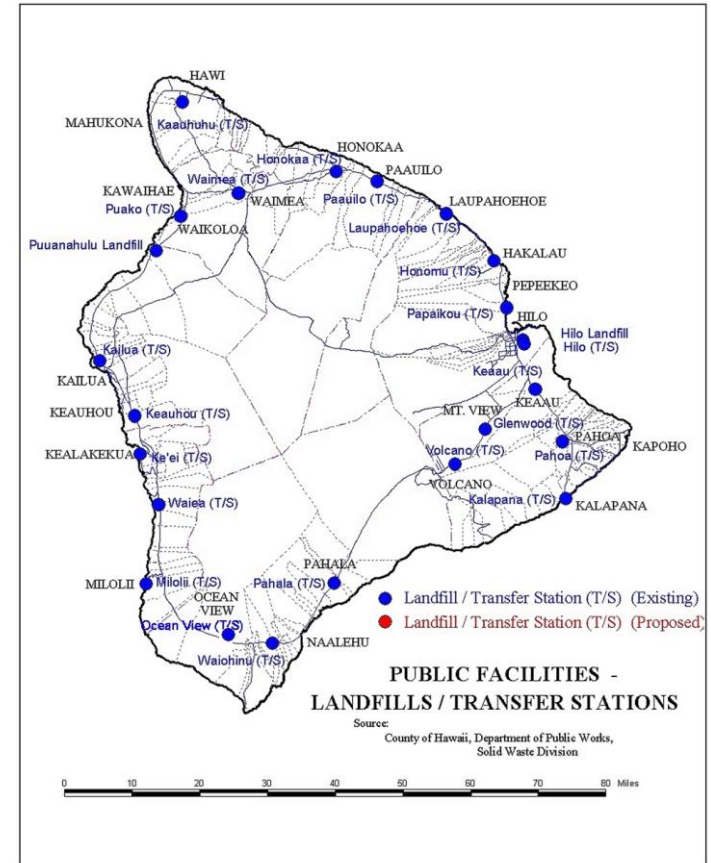
⁴ Keys to Success



Background

Waste is a Huge Problem

- 220,000 tons of waste each year
- Hilo Landfill is closed
- West Hawai`i landfill remains
- Searching for solutions that limit waste



SOURCE: HAWAII COUNTY, HAWAII

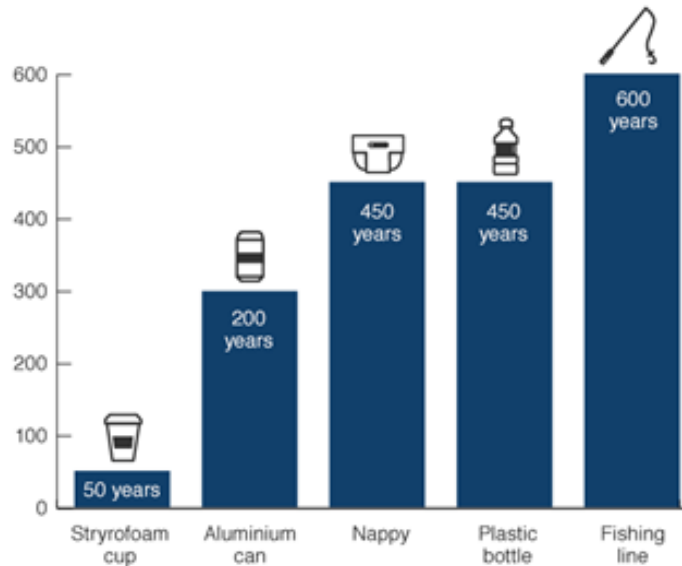
(Hawai`i Zero Waste, 2019)



A Day Exploring Solid Waste

The Problem with Plastics

How long til they're gone?



Exact time will vary by product type and environmental conditions

Source: NOAA / Woods Hole Sea Grant

BBC

How Long Plastic Lasts (NOAA & Woods Hole Sea Grant, 2017).



(National Geographic, 2018)

Plastic Bans

- Plastic Bag Ban
 - Effective 1/17/2013
- Ordinance 17-36
 - County of Hawai`i bans polystyrene containers, effective 7/1/2019
 - Single-use No. 5 plastic is a common alternative





Problem Statement



There is a plastic waste problem
around the world which
increases as we continue to use
single-use plastics in our
everyday lives

(The Guardian, 2020)



One Possible Solution



A reusable takeout food container system (RTCS) will reduce the amount of single-use plastics used in Hilo, HI

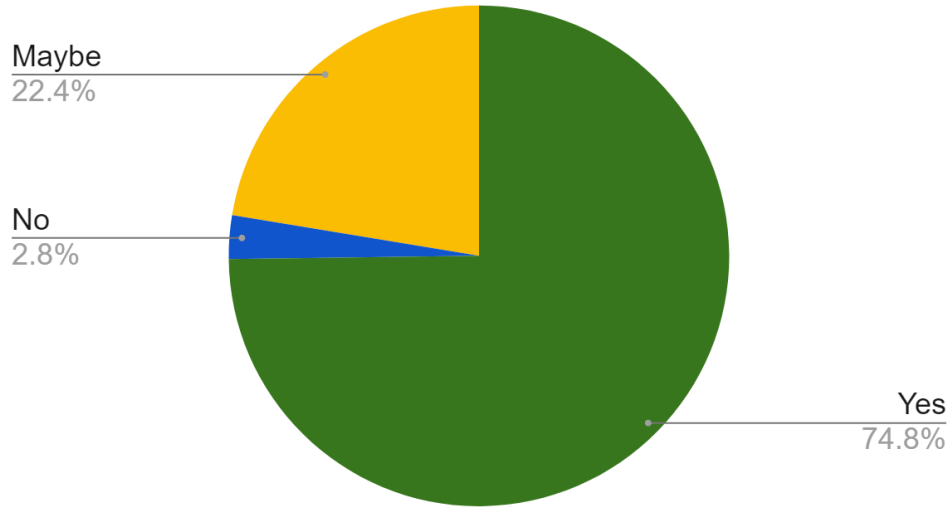


Methodology

1. Identify stakeholder concerns surrounding the implementation of a program
2. Analyze reusable container systems in similar sized cities to Hilo, HI
3. Incorporate information gathered into information for consumers and restaurants and a business plan for the County of Hawai`i that is specific to Hilo, HI

Objective 1: Survey the Public

Would you be willing to opt into a reusable container program?



- 143 responses
- Sustainable practices
- Public knowledge and passion

Objective 1: Interview Restaurant Owners and Managers

Expense

Stocking

Regulations

Container
Tracking

Objective 2: Durham GreenToGo

¹ Open source webinar

³ Strong marketing plan

² 28 restaurants and 996
containers to start

⁴ Very important to form
relationships



How GreenToGo Translates to Hilo

- Workforce cleans, sanitizes, and distributes
- Customer downloads the mobile application and pays fee to join program
- Customer gets food in container
- Customer drops off used container
- Workforce picks up used containers, washes, and redistributes

Objective 3: Deliverables

Pamphlet for
Consumers

Report for
Restaurants

Business Plan
for the County



Keys to Success

Consumer Pamphlet

You Can Help Reduce Plastic Waste



A Reusable Take-Out Container System in Hilo

For a small monthly or yearly fee, you could opt into a reusable container system that limits the amount of single-use plastics ending up in Kona's landfill

Upon membership, you will be eligible to receive takeout or restaurant leftovers in a reusable, microwave and dishwasher safe container, rather than a single-use, disposable one.



An app will be used to verify your membership when you order, then you'll be able to pick up your order in a reusable takeout container.



Containers can be conveniently dropped off at one of many locations around Hilo, to then be cleaned and sanitized at the wash station.

Restaurant Report

WHAT ARE THE PROS AND CONS OF PARTICIPATING IN A REUSABLE CONTAINER SYSTEM?

Pros

- Low cost positive advertising for restaurant
- Could save restaurants money on takeout containers
- Increases sustainability
- Attracts new customers to restaurants

Cons

- Takes up space to store containers once sanitized
- There is likely an upfront cost
- Sometimes there are flaws in the system (i.e. people who aren't registered end up with a container)

Reusable Takeout Container System

Reusable Takeout Container System

- A comprehensive business plan
- Lays out steps for the future

Steps of Implementation

1. Secure Funding for the RTCS
2. Find Restaurants Willing to Participate
3. Begin Advertising
4. Find Workforce to Run the RTCS
5. Establish Partnership with Third Party for a Wash Station
- 5A. Establish Own Wash Station
 1. Create Mobile Application
 2. Acquire Dropoff Boxes and Transport Vehicle



Minimum contribution: \$ 1

Thank you note

Personally written thank you from our team

ESTIMATED DELIVERY:

Feb 2017

SHIPPING:

Only to the following
countries: United
States

11 supporters

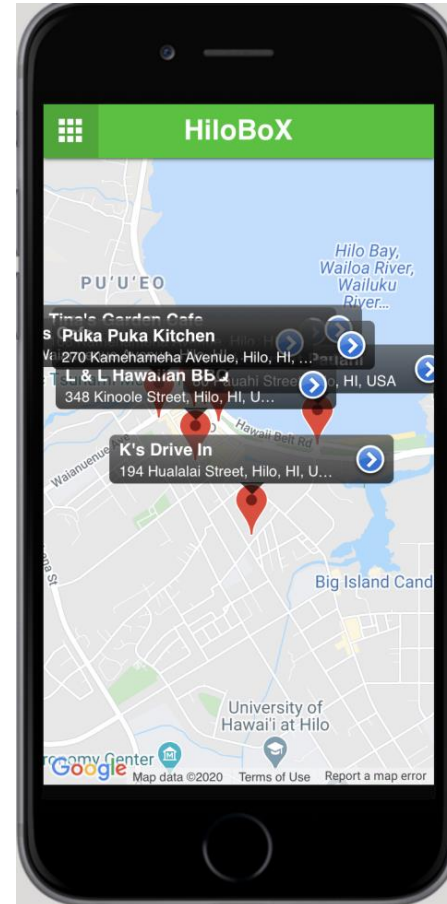
(Kickstarter, 2018)

1. Secure Funding

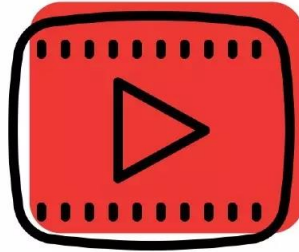
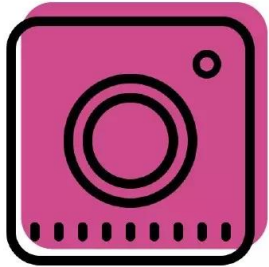
- Crowdfunding
- Grants
 - County R&D Innovation in Sustainable Development

2. Find Restaurants

- 5-10 restaurants to begin with
- Temporarily waived participation fee



(Swiftic, 2020)



(Vitac, 2019).

3. Marketing the Program

- Facebook
- Flyers
- Restaurant advertisements

4. Build A Workforce

- Volunteer or Paid
- Work Re-Entry Programs



5. Establish Partnership with Third Party

- Inspected Wash Station
- Commercial Sanitizer
- Inspected Dry Station
- Transportation

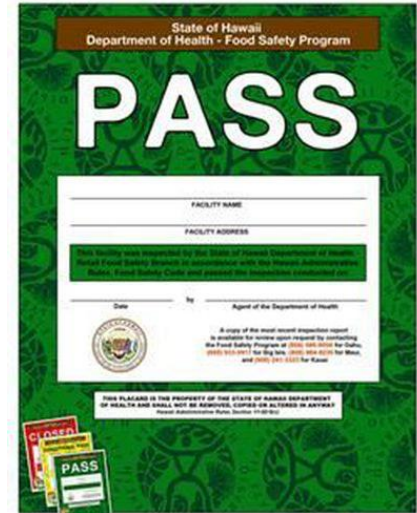


(HAWAII FOOD PANTRY & SOUP KITCHEN SCHEDULES, 2019)



5A. If a Third Party Partnership Cannot be Established

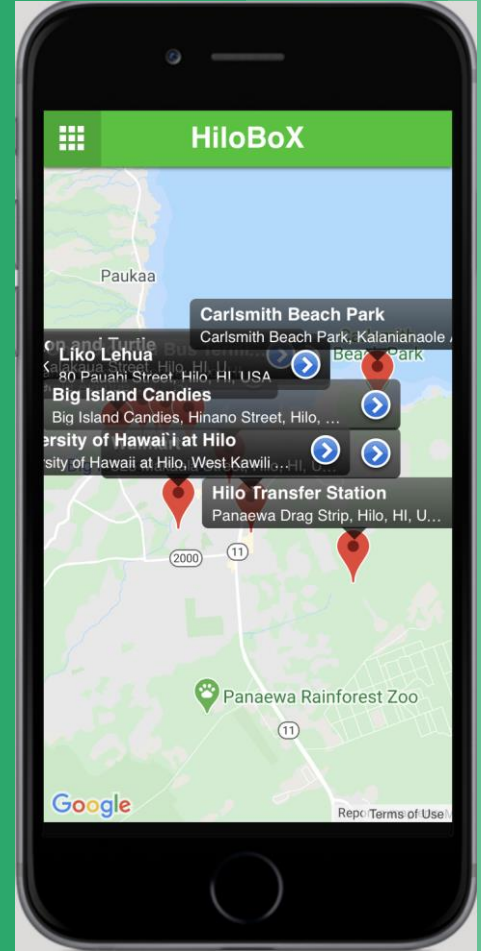
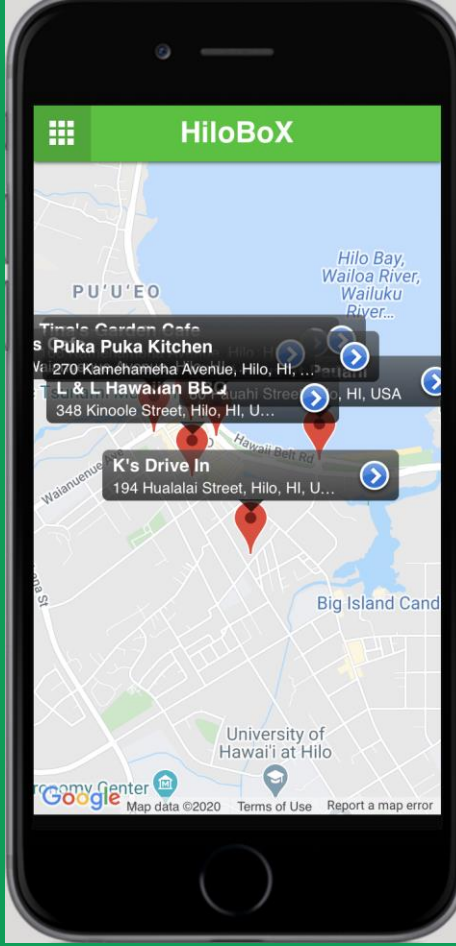
- Acquire Space - Permitted as Restaurant
- Purchase Sanitizer
- Adapt plan for more fundraising

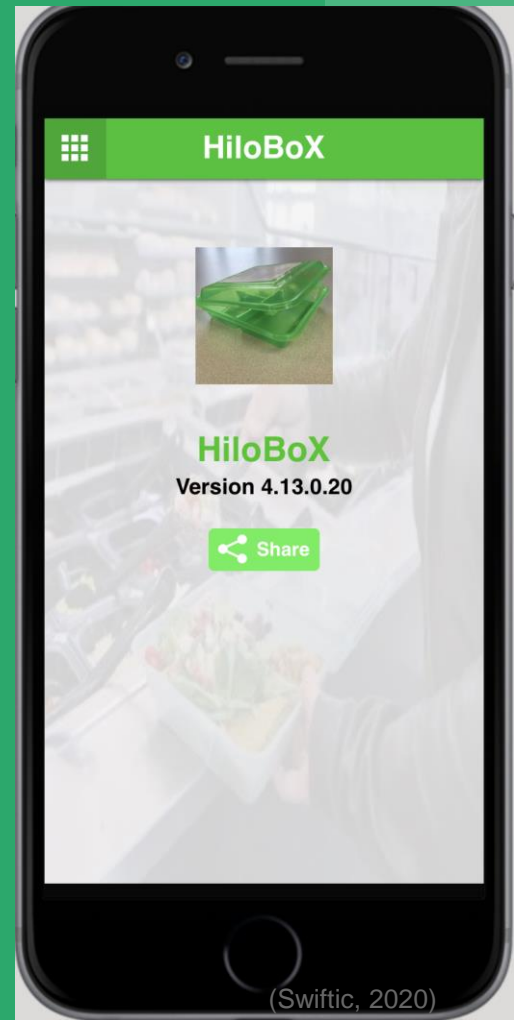
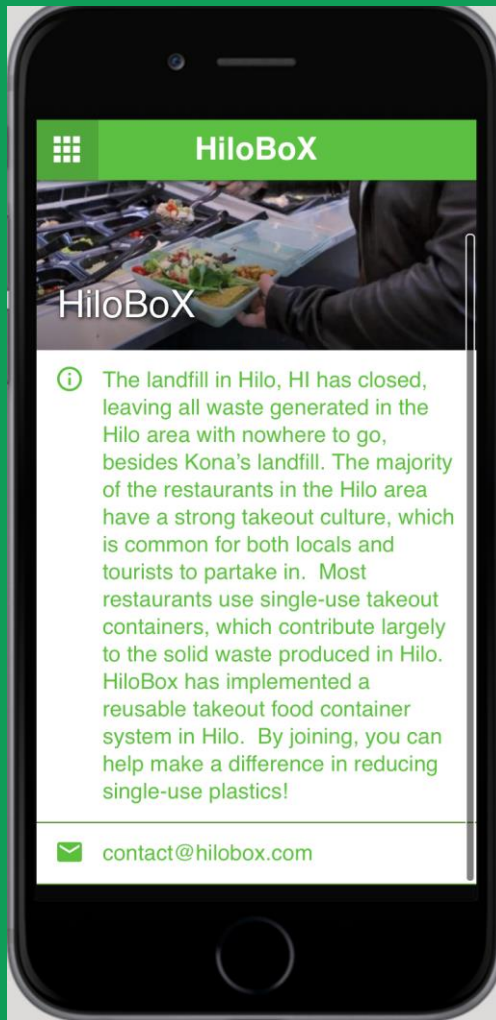
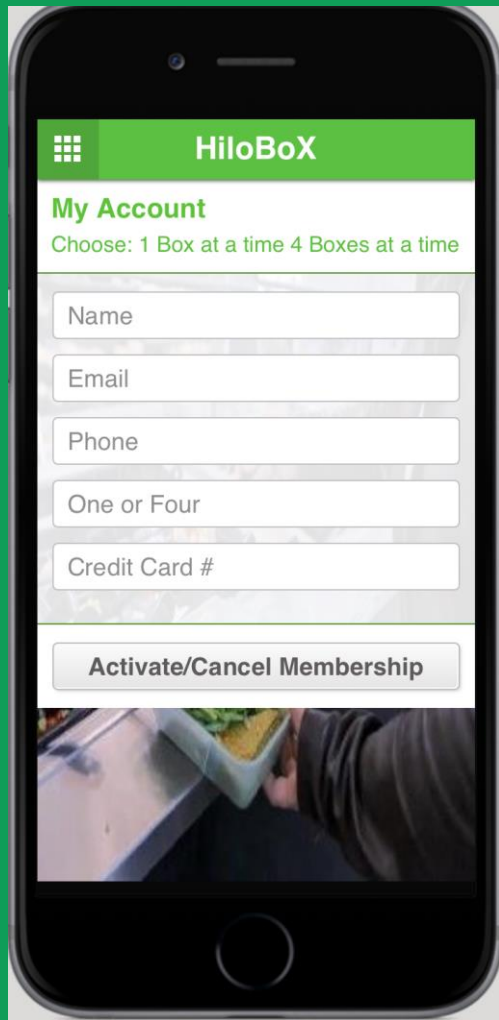


(Honolulu Magazine, 2016)

6. Create Mobile Application

(Swiftic, 2020)





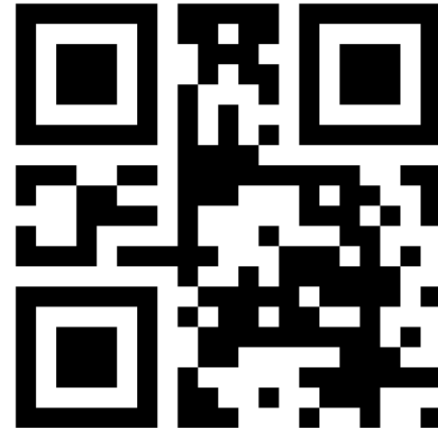
7. Acquire Dropoff Boxes and Transport Vehicle

Dropoff Boxes

- Secure and clear as to what they are
- QR codes posted on them
- Small slot that is easy for only the containers to fit through
- Local businesses pay to advertise on the sides

Transport Vehicle

- Bicycles with trailers



(QRCODEMONKEY, 2019)

Financials

- Containers
- Sanitizer
- Consumables
- Permits and Inspections
- Drop off and Transport
- Mobile Application



(Hobart, 2019)



(Best Reviewst, 2020)



(Don Enterprises, 2020)

Financials

INPUT 1	OUTPUT 2
# Of New Restaurants Per Month	Breakeven Months Without Wash Station Purchase
2	6.35
INPUT 2	OUTPUT 3
Restaurant Subscription Cost Per Year (\$)	Breakeven Months With Wash Station Purchase
500	19.68
INPUT 3	
Consumer Subscription Cost Per Year (\$)	
25	
INPUT 4	Breakeven Years Without Wash Station Purchase
# Of Starting Members	0.53
25	
INPUT 5	Breakeven years With Wash Station Purchase
# Of New Members per Month	1.64
10	
INPUT 6	
Seed Funding (\$)	
5000	

Legal

- An RTCS operates similarly to a restaurant
- Permits
- Regulations
- D.O.H.





Opportunities

- Spread to surrounding towns, possibly even islands
- Multiple wash stations
- More drop off locations
- Break even on initial expenses
- Possibly get more outside funding

Projections/Next Steps

If there is an increase in customer use of RTCS...

- Containers
- Staff
- Sanitizers
- Space
- Container Transportation

...will all need to be increased



The Conclusion

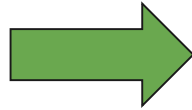
**You Can Help
Reduce Plastic
Waste**

How?

*A How-To Guide on making
Hilo a little greener!*

**A Reusable Take-Out
Container System
in Hilo**

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Acknowledgments

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Professor Sarah Stanlick

Sodexo, Donna Ojiri

O`ahu Zero Waste, Nicole Chatterson

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How Long Plastic Lasts (NOAA & Woods Hole Sea Grant, 2017).

<http://records.co.hawaii.hi.us/WebLink/DocView.aspx?dbid=0&id=980968&page=1&cr=1>