

**12:45 pm Pacific Time**  
**October 2, 2024**

**Track C**



**Concurrent PM**  
**Zero Waste Solutions**  
**for Hospitality, Event,**  
**and Other Large Venues**

**Speakers:**

**Rick Penner**

**Amy Wald**

**Brianna Treat**

**Moderator: MaryEllen Etienne**

**Day 1 • Zero Waste Businesses & Institutions**

**Hosted by:**



**12:45 pm Pacific Time  
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# **MaryEllen Etienne**

**Associate Director**

**U.S. Green Building Council  
(Moderator)**

**Zero Waste Solutions for Hospitality,  
Event, and Other Large Venues**



**National Zero Waste Conference 2024**

**Day 1 • Zero Waste Businesses & Institutions**

Hosted by:





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**Rick Penner**  
**Industry Relations**  
**Z3 Data Solutions**

**Zero Waste Solutions for Hospitality,  
Event, and Other Large Venues**



**National Zero Waste Conference 2024**

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**Amy Wald**  
**President and Founder**  
**Greenlux Inc.**

**Zero Waste Solutions for Hospitality,  
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**Brianna Treat**

**Director of Sustainability**

**Climate Pledge Arena/Seattle Kraken**

**Zero Waste Solutions for Hospitality,  
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**Z3 DATA**  
BETTER DATA. LESS WASTE.

# Z3 DATA SERVICES

## A Comprehensive Material Management Data Tracking Solution

- Supports **Z**ero Waste efforts
- Measures the **3** R's
- Reports Scope **3** activities

# Background

Teamed up in 2023 to develop a solution that helps **businesses** overcome the challenges associated with managing material generation and diversion data.



**Steve Means**  
CEO / CO-FOUNDER

- Ran a pallet recycling company for 20 years.
- Provided recycling related services to large national retailers, manufacturers and distributors.
- Extensive experience managing hauler data, tracking software, and reporting.



**Rick Penner**  
INDUSTRY RELATIONS /  
CO-FOUNDER

- Founded the 1<sup>st</sup> Habitat for Humanity ReStore in 1991.
- Started the software company that launched Re-TRAC in 2004.
- Over the past 20 years Re-TRAC has been an industry leader in material measurement & reporting.



# Key Benefits of Having Better Data



“Measurement forms the bedrock of achieving the National Recycling Goal...” - US EPA



Track progress toward zero waste goals.



Benchmark key metrics across your operations.



Compliance with local, state, & federal reporting requirements.



Improve the quality of stakeholder reporting.



Perform scenario analysis & measure impacts of material management activities.



# Material Management Data Challenges



Manual data entry is time consuming and subject to quality issues



Complexity of data tracking due to the diversity of material streams and variety of management options



Difficulty verifying the accuracy of the data



Many service providers some of which are small operators with limited IT capabilities



Lack of standardization

# Hotel Case Study

Approached by a major hotel group in 2023 to help them improve how material management data is being collected, analyzed, and reported at each of their properties.

## Key Objectives

- Improve the quantity and quality of waste, recycling, and food waste data collected by hotels.
- Reduce the manual reporting workload for hotel teams and corporate teams or consultants .
- Streamline the reporting process for haulers.
- Establish an audit trail for waste diversion activities to support external verification needs.
- Use data to inform cost optimization decisions.



# Hotel Case Study



## Manual Data Entry is Time Consuming and Subject to Quality Issues

- High staff turn-over means that staff need constant retraining on how to manage material data from haulers and report into corporate sustainability software.
- Not a core aspect of managing a hotel so not as high a priority when things are busy.



**The Z3 service assembles, structures, and analyzes hauler and other data through a powerful ingestion engine to provide corporate sustainability teams with a complete set of verifiable data for each property.**



# Hotel Case Study



## Complexity of Data Tracking

- Understanding material management terminology requires experience.
- Multiple locations across many jurisdictions multiplies complexity.



**The Z3 service can accommodate the full range of data collection and analysis scenarios.**

# Hotel Case Study



## Difficulty Verifying the Accuracy of the Data

- Corporate sustainability teams have a hard time accessing the documents they need to verify the accuracy of the reported data.
- The ability to audit data is a growing priority due to increasingly stringent corporate reporting requirements.



**The Z3 service allows original documentation to be attached to material management records to facilitate easy access for auditing purposes.**

# Hotel Case Study



## **Many Service Providers Some of Which are Small Operators/Limited IT Capabilities**

- Often multiple haulers required to manage different material streams.
- Interpreting hauler invoices can be challenging.
- Small haulers may only be able to provide clients with basic monthly invoices.



**The Z3 service can work directly with haulers to ingest, transform, and integrate required data to give clients a comprehensive generation and diversion picture.**



# Hotel Case Study



## Lack of Standardization

- Every hauler has a different way of presenting information about the services they are providing clients.
- Terminology may vary between companies and across jurisdictions.



**The Z3 service structures and standardizes data across properties, haulers and jurisdictions so data can be accurately aggregated and efficiently compared.**

# Hotel Pilot Project



Participating Hotels:	Four hotels in Austin, TX
Material Streams Included:	<ul style="list-style-type: none"><li>• Solid Waste</li><li>• Mixed Recycling</li><li>• Food Waste/Organics</li></ul>
Haulers Providing Services:	Four
Data Requested from Haulers:	Monthly data for the 12 months of 2023

# Hotel Pilot Project



HAULER ENGAGEMENT		Period of Service	Frequency of Collection	Number & Size of Bins Serviced	Material Type and Weight/Volume	Diversion & Disposal Facilities	Units of Measure
Provided Data							
Hauler #1	Yes (Excel)	✓	✓	✓	✓	✓	✓
Hauler #2	Yes (Excel)	✓	✓	✓	✓	✓	✓
Hauler #3	Yes (Excel)	✓	✓	✓	EPA Conversion Factors	✓	✓
Hauler #4	No (invoices used)	✓	✓	✓	EPA Conversion Factors		✓

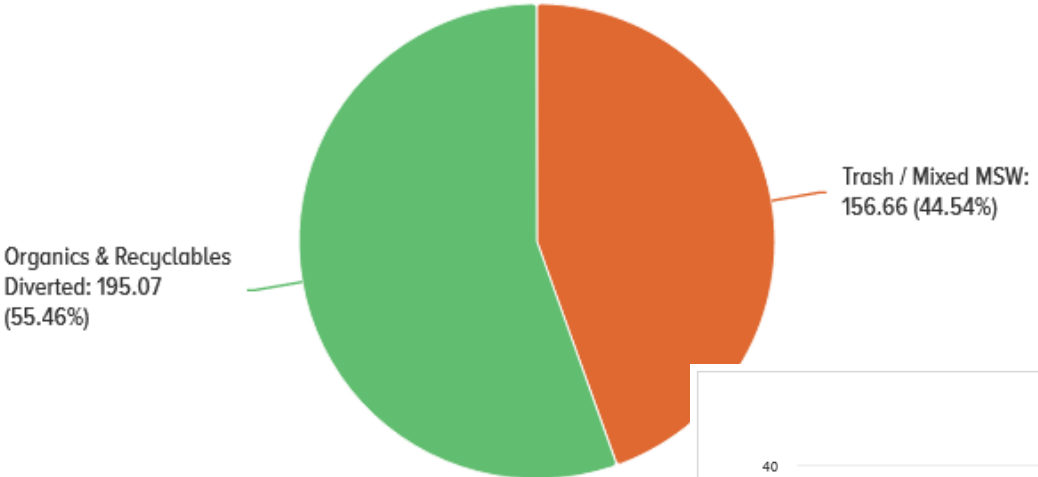


# Hotel Pilot Project



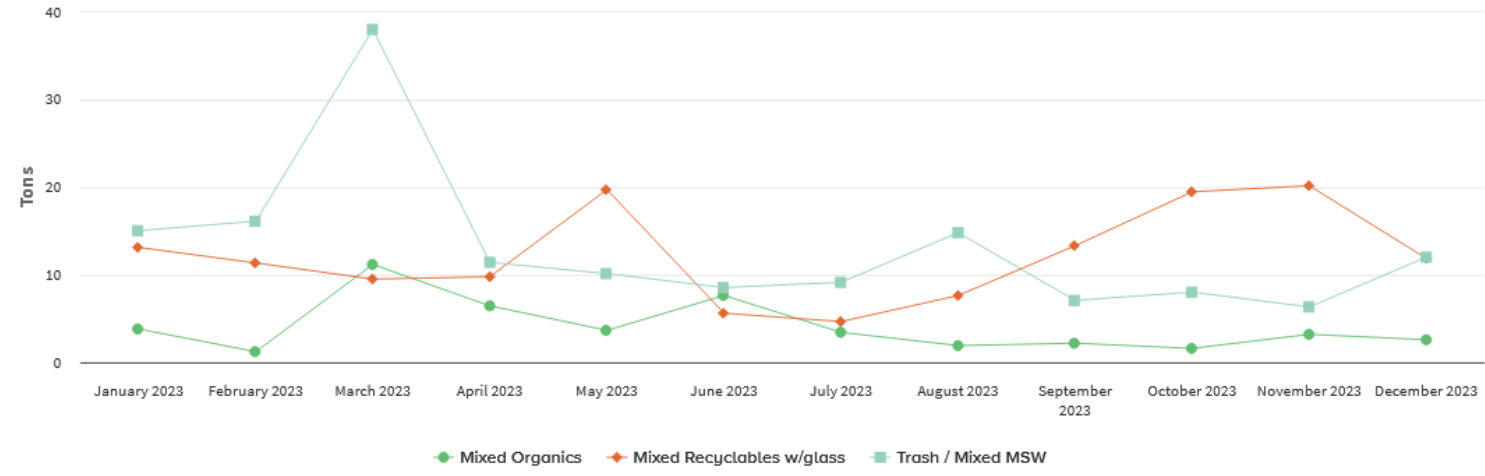
## Diversion

Jan 1, 2023 - Dec 31, 2023



## Tons by Waste Stream

Jan 1, 2023 - Dec 31, 2023



BETTER DATA. LESS WASTE.

# Material Tracking Options

The Z3 Platform Can Help You Manage Data for a Wide Range of Material Streams:

- Recycling
- Food Waste/Organics
- Waste
- Construction & Demolition
- Electronic Scrap
- Reusable Materials (including donations)
- Textiles
- Scrap Tires
- Universal Waste
- Other

The platform has been designed to accommodate any type of material stream in as much granularity as required.



# The Z3 Data Solution



- ✓ Improves the quantity and quality of material management data.
- ✓ Reduces/eliminates the reporting workload for property staff and corporate teams.
- ✓ **Provides zero waste & other consultants with a valuable data collection and analysis tool.**
- ✓ Streamlines the reporting process for haulers.
- ✓ Establishes an audit trail for material management activities.
- ✓ Uses data to inform cost optimization decisions.
- ✓ Saves everyone time and money!



**Z3 · DATA**  
BETTER DATA. LESS WASTE.

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**STEVEN MEANS**

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# Building a Greener Future for Hospitality





# Amy Wald

Founder and President Greenlux

Sustainable Hospitality and Tourism Advisor

BA Sustainable Business and Wildlife  
Management

Sustainable Hospitality podcast host

Leed Green Associate

TRUE Advisor

ISSP, SA



## More than an industry problem...

Hotels produce **289,700 tons** of waste annually, including **79,000 tons** of food waste.

A 200-room hotel uses about **300,000 single-use plastic** items each month.

## Overcoming...

From barriers to opportunities

- Budget constraints
- Staffing
- Complexities





## State of Market



83%

of global travelers  
think sustainable  
travel is vital



90%

of consumers look for  
sustainable options when  
traveling



2/3

of Gen Z'ers are willing to pay more  
for sustainable or environmentally  
friendly products

# Zero Waste Hotel Profile

## Eau Palm Beach Resort & Spa

[Close](#)

[Overview](#) [Prices](#) [Reviews](#) [Photos](#) [About](#)

### Sustainability ⓘ

🌿 This hotel is committed to environmental sustainability. [Learn more](#)

#### 🏠 Energy efficiency

- ✓ Energy-efficient heating and cooling systems
- ✓ Energy-efficient lighting
- ✓ Energy-saving thermostats

#### ♻️ Waste reduction

- ✓ Recycling program
- ✓ Soap and toiletry donation program
- ✓ Safely disposes of electronics, batteries, and lightbulbs
- ✓ Water bottle filling stations
- ✓ Compostable food containers and cutlery
- ✓ No Styrofoam food containers
- ✓ No single-use plastic straws

#### 🏠 Water conservation

- ✓ Water-efficient faucets and toilets
- ✓ Towel and linen reuse program

#### 🛒 Sustainable sourcing

- ✓ Organic food and beverages
- ✓ Locally sourced food and beverages
- ✓ Responsibly sourced seafood
- ✓ Organic cage-free eggs
- ✓ Vegetarian and vegan meals
- ✓ Eco-friendly toiletries





## A Zero Waste Organization lays the foundation

- A larger sustainability strategy
- Due to the nature of waste being customer-facing, it is the most obvious way to communicate to guests a hotels engagement in sustainability
- Millennials and Gen Z's are now choosing employers that align with their values





# The opportunities hiding in your waste

## Operations

*operational efficiency through waste practices can lead to substantial cost reductions, with hotels reporting up to [30% decrease](#) waste management expenses - EHL*





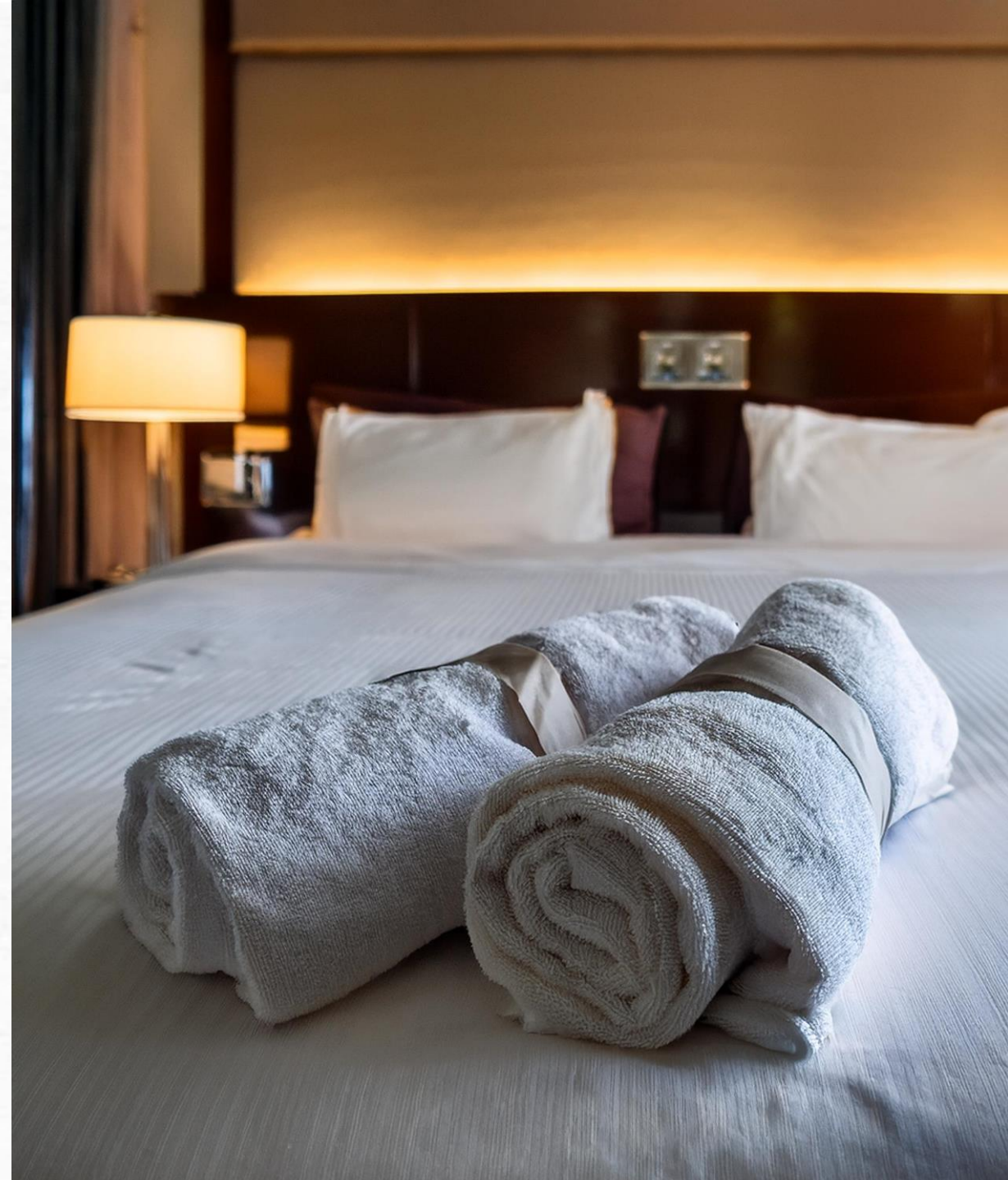
# The opportunities hiding in your waste

## Housekeeping

Common items found in a hotel waste audits:

- Housekeeping supplies, i.e., rags, sheets, towels
- Full size toiletries
- Silverware

Donate left over toiletries through Clean the world





# The opportunities hiding in your waste

## Sales and Marketing

- Winning RFP's
- GBTA has released its 2024 RFP sustainability guidance for hotels.





## Creative strategies to get you to your Zero Waste Goal through F&B

- Empower your food and beverage department to create menus with foods that can be repurposed vs. discarding
- Reduce the portion sizes of plates



## From Trend to Industry Standard

- Emerging brands such as 1 Hotel are capitalizing on market demand.
- 1 Hotels repurposing wine bottles for in room water glasses





# Storytelling and Greenmarketing

- Don't get called out for greenwashing.
- EU green claims will require substantiating your claims regardless if you are in the US or not.
- Measure your data and tell your story confidently using software such as Z3 Data!



# START ZERO Framework

**Support:** Engage leadership and get buy-in

**Team:** Create a Zero Waste Team

**Audit:** Conduct a waste audit

**Roadmap:** Set goals and develop a plan

- Talk to your hauler and local waste authority to see where they can support your journey

**Train:** Educate and train staff

**Zero in:** Identify low hanging fruit Using data from waste audit

**Execute:** Implement and monitor progress

**Recognize:** Celebrate successes and tell your story

**Ongoing Improvement:** Continuously refine and optimize your zero waste strategies

## Conclusion





# Building a Greener Future for Hospitality



WELL™



## Get in touch

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[greenluxeinco.com](http://greenluxeinco.com)

## Podcast

[Greenluxeinco.com/podcast](http://Greenluxeinco.com/podcast)

## Newsletter

[Greenluxeinco.com/newsletter](http://Greenluxeinco.com/newsletter)

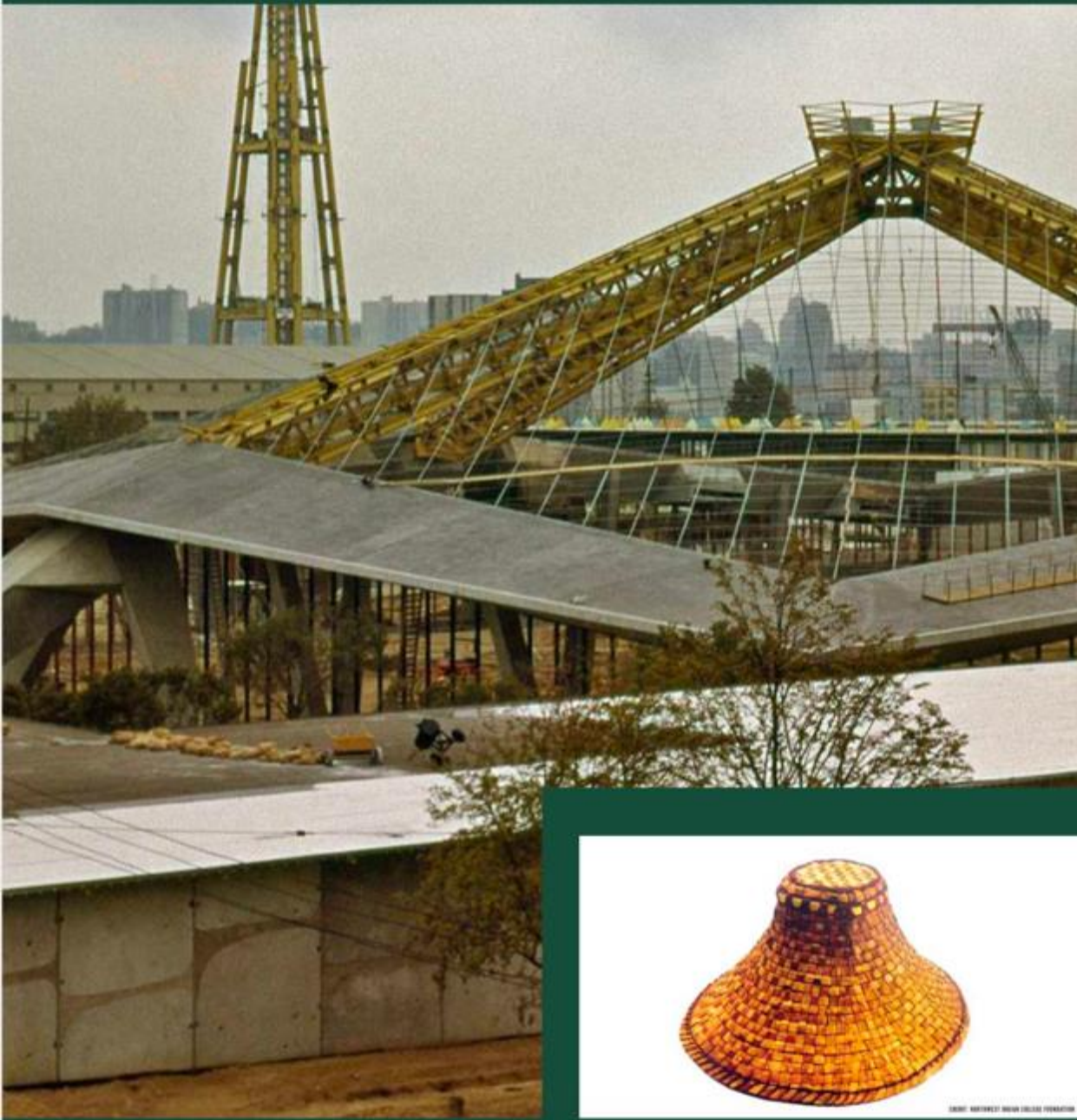


# CLIMATE PLEDGE ARENA - SEATTLE, WASHINGTON, USA





# Reuse: 45 million pounds of



## **INSPIRED BY THE ROOF**

### **RAINWATER TO ICE SYSTEM**

- PAUL THIRY'S DESIGN OF THE ORIGINAL WASHINGTON STATE PAVILION WAS INSPIRED BY RAIN HATS WORN BY THE NATIVE SALISH PEOPLE OF PUGET SOUND
- 59 YEARS LATER, THAT VERY ROOF WILL BECOME THE PRIMARY VESSEL FOR HARVESTING AND RE-USING RAINWATER TO CREATE A NEW WORLD-CLASS ICE RINK BENEATH IT
- ON-SITE HISTORIC AND EDUCATIONAL DISPLAYS WILL CELEBRATE THIS LEGACY STORY AND BE VISIBLE TO THE COMMUNITY AND VISITORS TO THE SITE AND SEATTLE CENTER



# COMPOST

Visit [wm.com/recycleright](http://wm.com/recycleright) to learn more.

ALL FOOD  
AND MOST CONTAINERS



TRAY LINER



POPCORN BAGS



UTENSILS



STARBUCKS CUPS



# RECYCLE

Visit [wm.com/recycleright](http://wm.com/recycleright) to learn more.

ALUMINUM CUPS + CANS



CANDY BOXES



WRAPPER IS COMPOSTABLE

SOUVENIR ITEMS



## WASTE OPERATION MILESTONES AT CLIMATE PLEDGE ARENA



Development of Waste Policy and Environmental Purchasing Policy



Policy Changed to Include "Bring Your Own Bottle" (January 2023)



Banning Single-Use Plastics in the Building (October 2023)



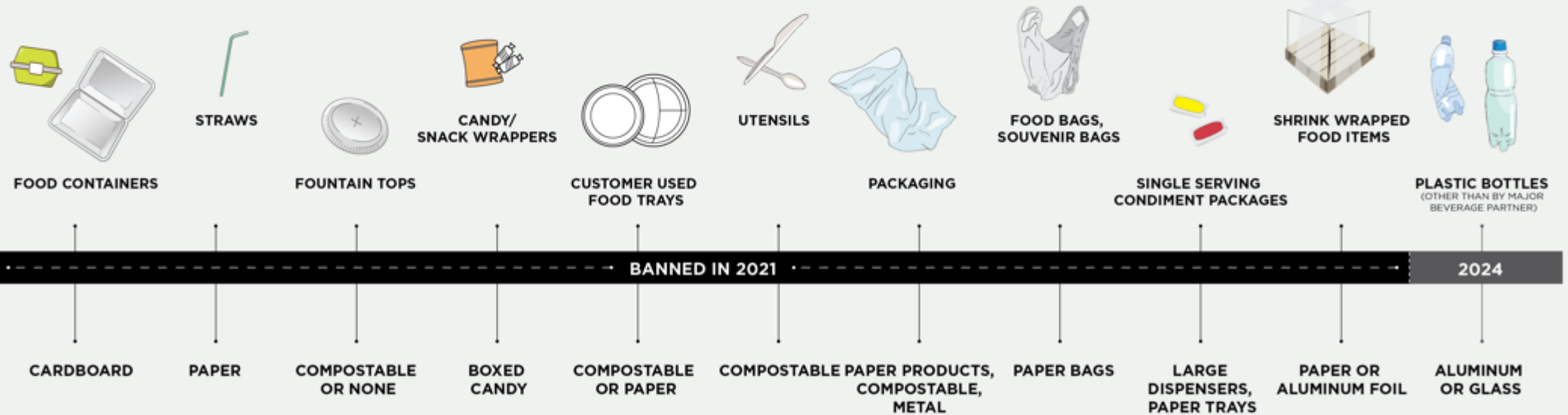
Received TRUE Zero Waste Platinum Certification (March 2024)



# Single-Use Plastics

## 'No Plastic' Arena Plan

FOH SINGLE USE (PHASE OUT ASAP)



### FOH DURABLES (OKAY)

- SOUVENIRS / MEMORABILIA (BUT NOT PACKAGING) — NO PLASTIC WRAP OR BAGS
- COOLERS
- SIGNS / DISPLAYS
- CARRYING TRAYS FOR WALKING SERVERS
- GARBAGE BINS
- CLEANING EQUIPMENT
- CONDIMENT DISPENSERS
- SOAP/SANITIZER DISPENSERS



**CLIMATE  
PLEDGE  
ARENA**





13-25  
WaFd Bank Club

11-12







RECYCLE  
RIGHT

SALUMI PIE

SEATTLE'S  
LEGACY  
196

CLIMATE  
ACTION

Recycle

WMA





**PRITCHARD**  
SPORTS & ENTERTAINMENT GROUP





# Bowl Cleaning Process



## All Liquids

- Empty into white bucket and attach lids back to bottles
- Dump liquid from containers down drain
- Collect landfill items in clear liners
- Convey full bags to Sustainability Room and dispose in landfill dumpsters



1<sup>st</sup>  
sweep



## Recyclables

- Collect clean and empty recyclables in blue liners
- Convey full liners to Sustainability Room
- Empty liner contents into SSR compactor using blue brute can
- Dispose clean and dry liners in thin films box, dirty liners in MSW dumpsters

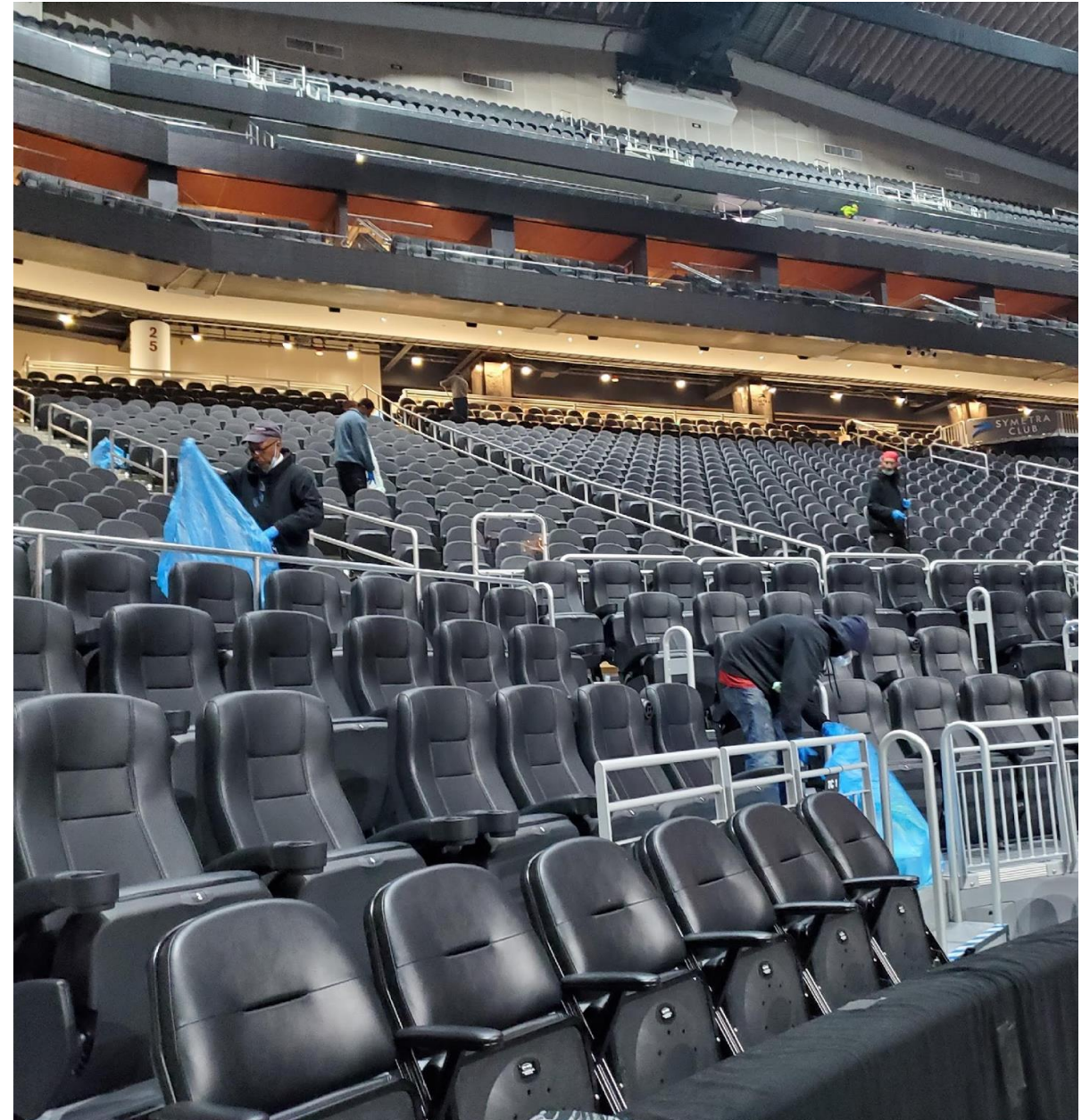
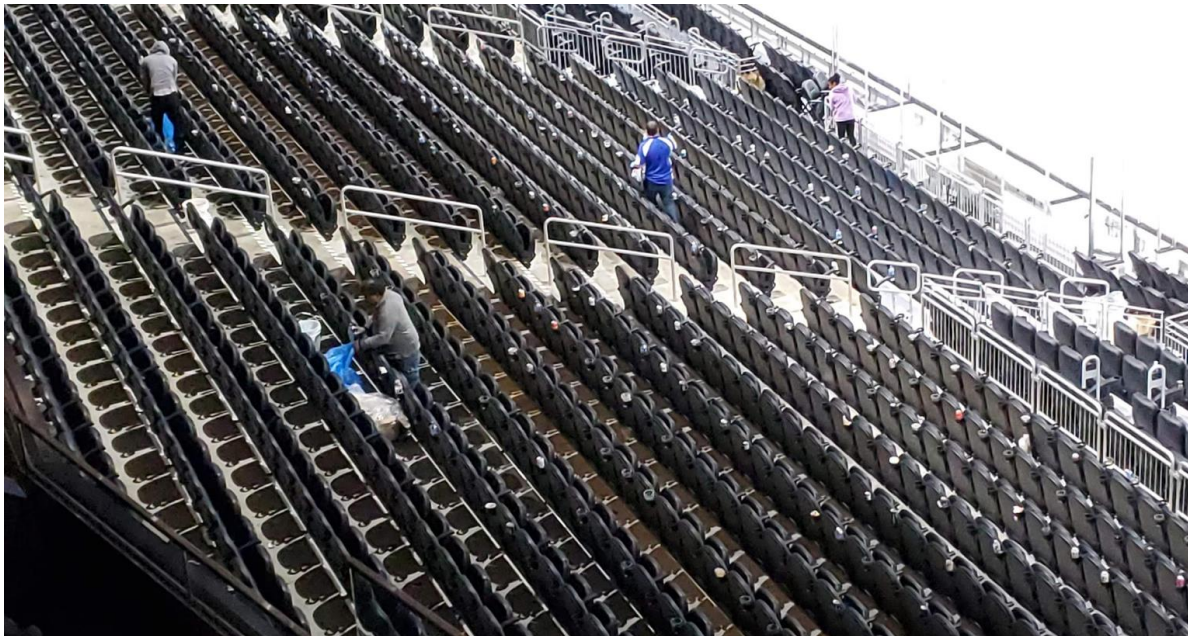


2<sup>nd</sup>  
sweep



## Organics

- Collect compostable service ware, dirty paper, and food waste in green liners
- Convey full liners to Sustainability Room
- Dispose of organics and green liners in compost compactor







- **Goal: 95%+ diversion rate**



# WASTE SORTING IN THE SUSTAINABILITY ROOM



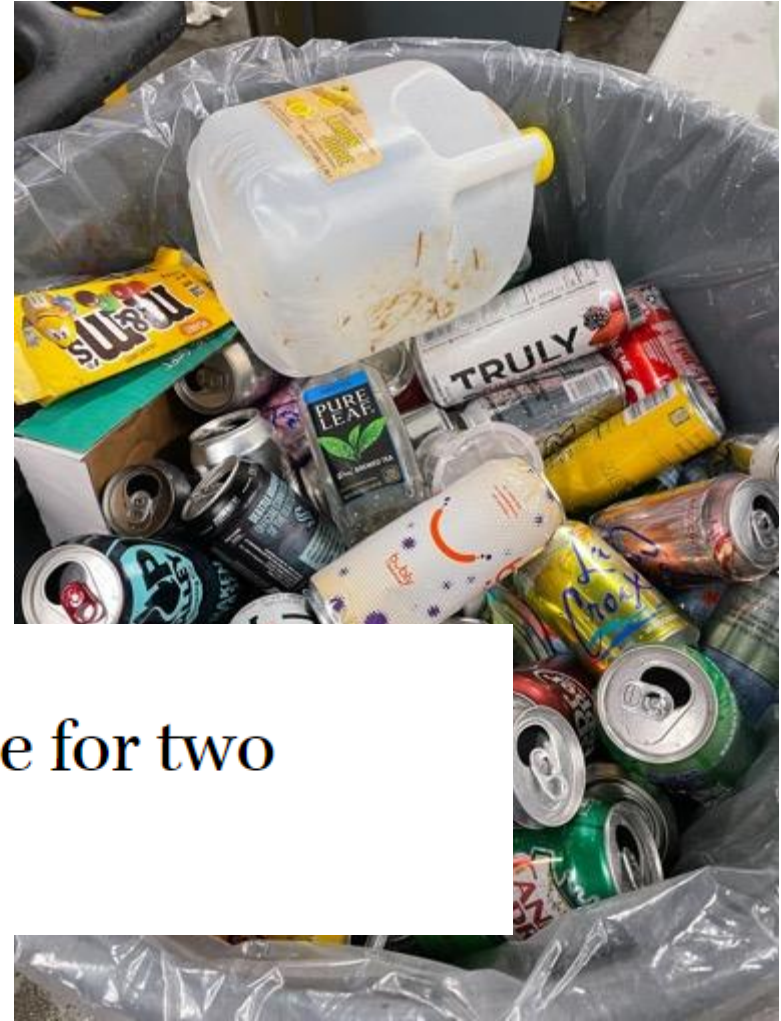
- Our Highest Diversion Rate Of 2022 Was 98% in June
- All Events at Climate Pledge Arena Are Zero Waste Events
- In the Last 26 Months, We Have Averaged a 93% Diversion Rate



**FACILITIES**

*Climate Pledge Arena goes zero waste for two concerts headed into "Green Month"*

**Billie Eilish Shows  
95.71% Waste  
Diversion**





# TRUE ZERO WASTE CERTIFICATION: PLATINUM LEVEL



## Depeche Mode Waste Audit: 97% Diversion Rate

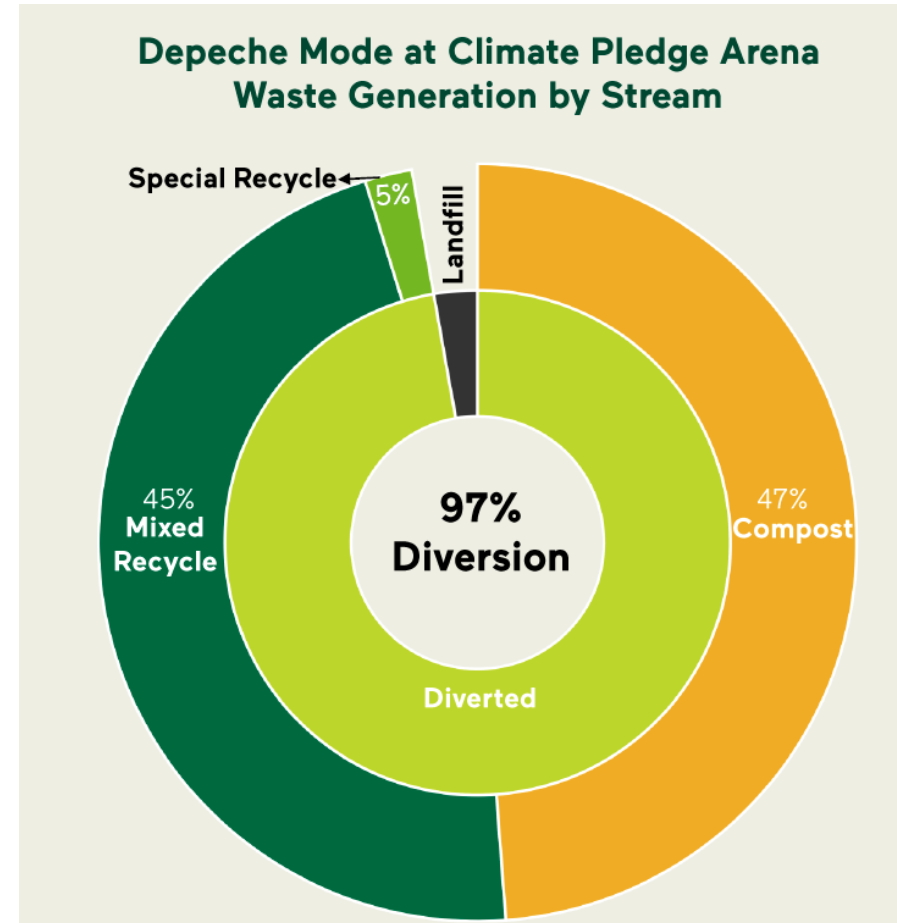
- 0% Contamination Rate
- 5% Special Recycling
- 14,700+ People Attended
- 11.64 Tons (Total Tonnage)

Recorded Data Table 2: Detailed Weights and % of Trash by Material Category

Material Stream	Weight (tons)	% of Total
SSRY	5.19	44.61%
FWST	5.46	46.93%
MSW	0.31	2.67%
Kitchen Oil	0.23	1.94%
Kitchen Grease	0.06	0.54%
EPS (Foam)	0.00	0.02%
Thin Plastic (LDPE)	0.36	2.97%
Food Donation	0.04	0.32%
Total Tonnage: 11.64 tons		

Recorded Data Table 3: Simplified % of Trash by Material Category

	Landfill	Mixed Recycling	Special Recycle	Compost	Total Waste Diverted
% of Total Waste	3%	45%	5%	47%	97%



# TRUE ZERO WASTE CERTIFICATION: PLATINUM LEVEL



## *How is CPA a Functional Zero Waste Facility?*



- Tracking & Measuring All Waste Generated
- Green Procurement: Localized & Sustainable Purchasing
- Right Sized Bins & Color-Coded Bag System
- No Fan Facing Single-Use Plastics
- On-site Sorting in Sustainability Room
- Implementation of EPP and Waste Policy
- Participation of Specialized Recycling Programs
- Fan and Guest Waste Sorting Engagement & Education