

# Tackling Food Waste & Landfill Methane Emissions

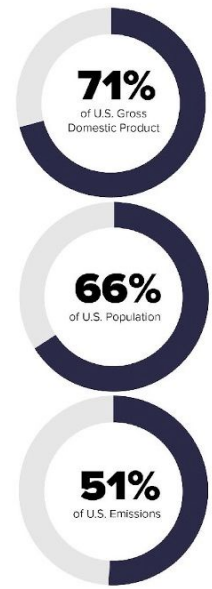
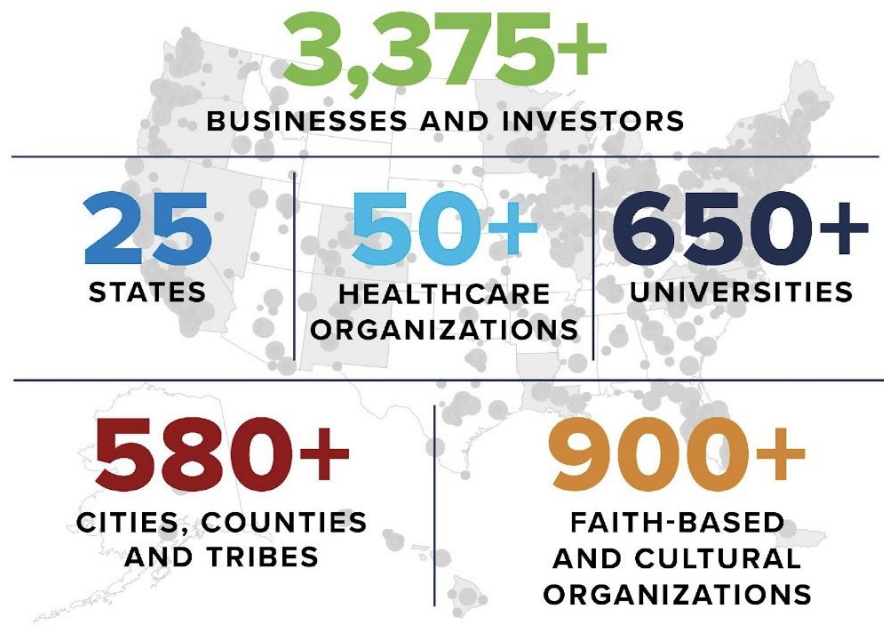
August 24, 2023

AMERICA IS  
**ALL IN**



# The *All In* Coalition

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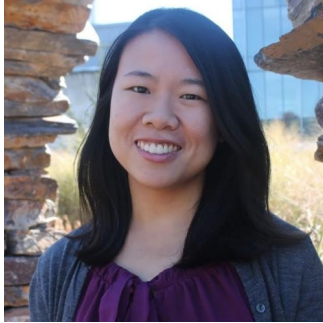
# Today's Speakers

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**Tom Frankiewicz**  
*Waste Sector Expert,*  
*RMI*

**Waste Methane  
Overview**



**Alicia Zhao**  
*Research Manager,*  
*University of Maryland*  
*CGS*

**Emissions Reduction  
Potential**



**Shannon Kennedy**  
*Senior Manager,*  
*University of Maryland*  
*CGS*

**Case Study: State**



**Gena McKinley**  
*Assistant Director,*  
*Austin Resource*  
*Recovery*

**Case Study: City**



**Mandi McKay**  
*Director, Environmental*  
*& Social Impact, Sierra*  
*Nevada Brewing Co.*

**Case Study: Business**



# Opening Remarks

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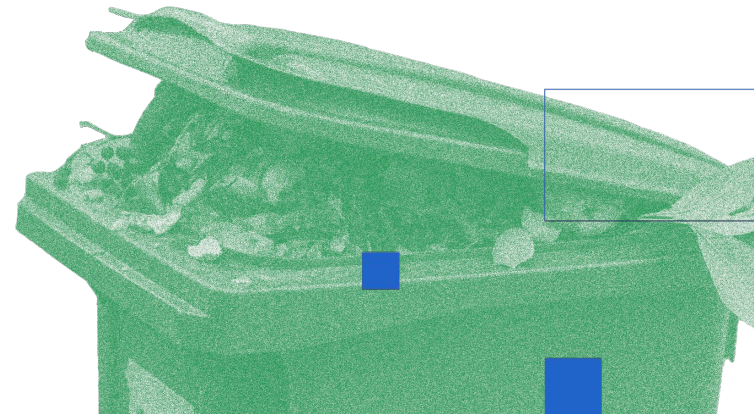
## **Gina McCarthy**

*America Is All In* Managing Co-Chair

First White House National Climate  
Advisor and Former U.S. EPA  
Administrator

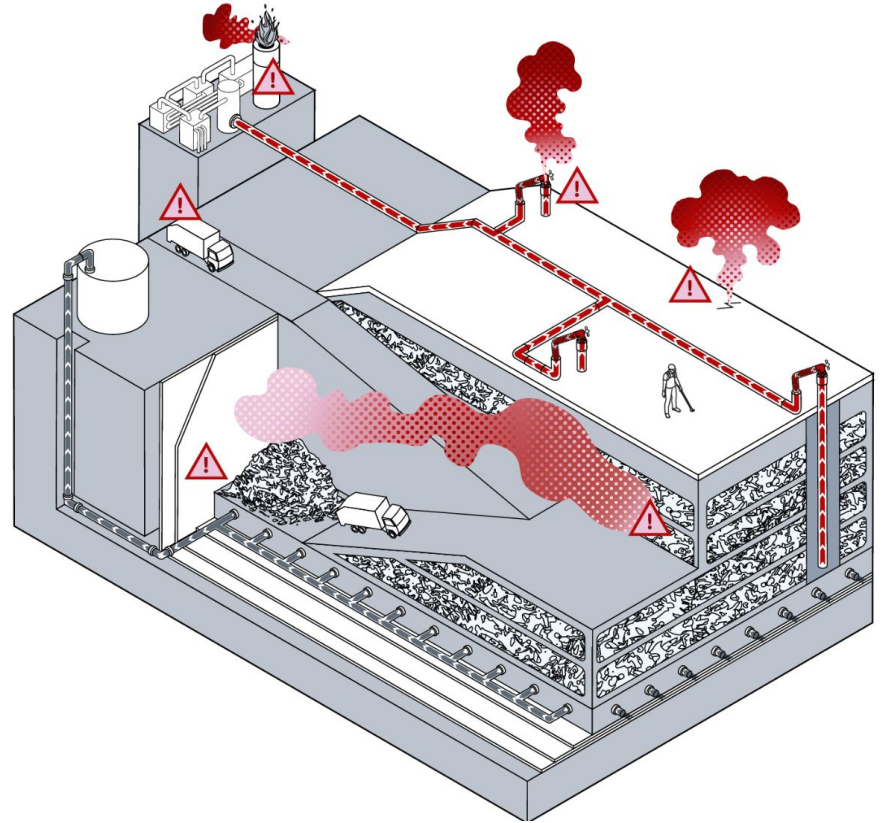


# Waste Methane Overview



# Organic Waste → Landfill Methane

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# A Two-Pronged Approach to Cut Waste Methane



**Upstream**  
Prevent landfill  
methane  
generation

Waste prevention &  
food donation

Organics recycling

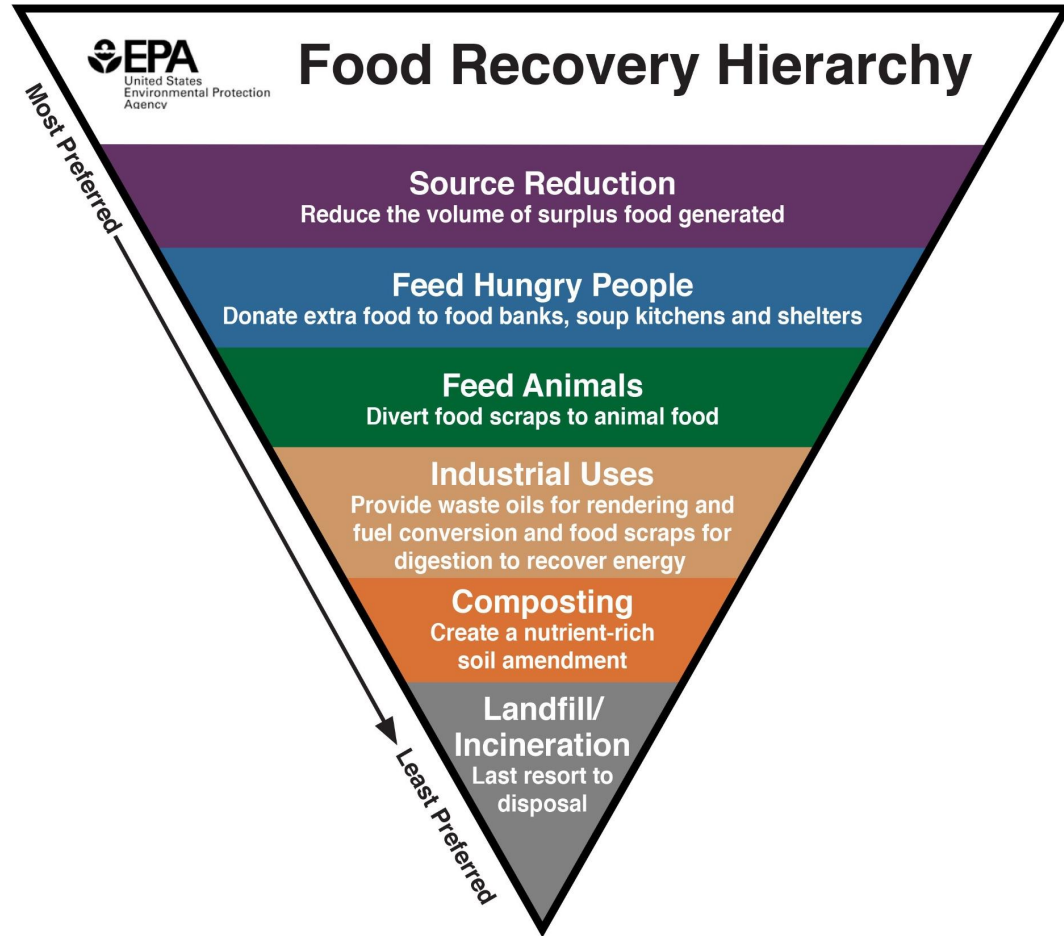
**Downstream**  
Mitigate methane  
at the landfill

Smart landfill design  
& operations

Advanced leak  
detection & repair

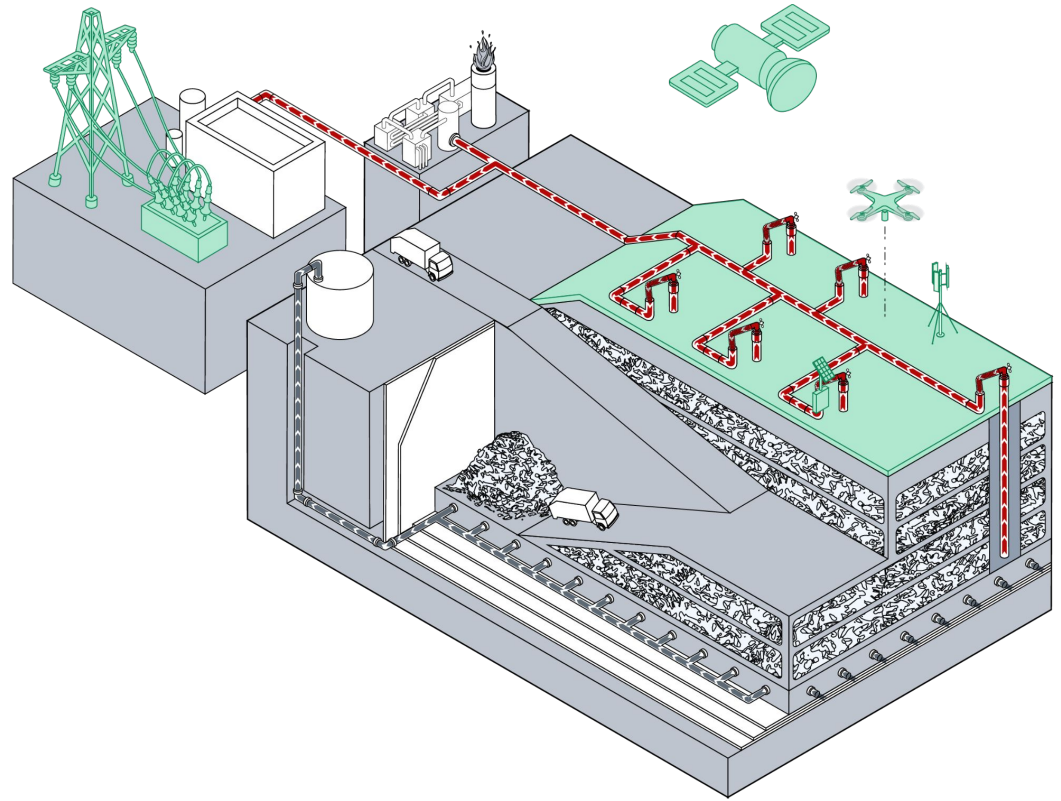


**Upstream strategies** prioritize **source reduction, edible food donation, and organics recycling** to prevent methane generation by diverting organic waste from our landfills.





**Downstream strategies** optimize landfill **design, monitoring, and operations** to increase methane capture and reduce fugitive emissions.



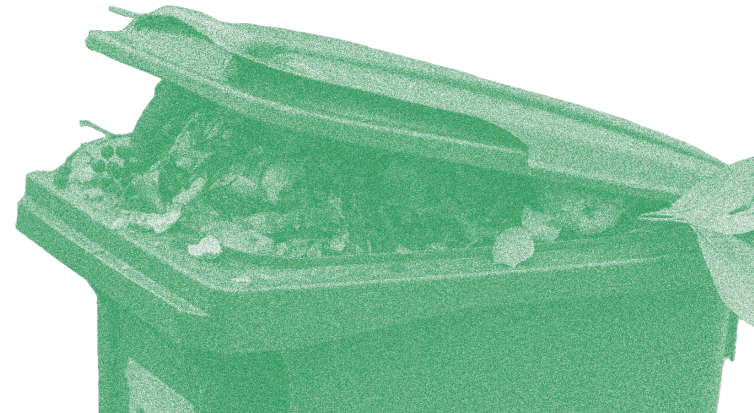
# University of Maryland, Center for Global Sustainability



SCHOOL OF  
PUBLIC POLICY  

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CENTER FOR GLOBAL  
SUSTAINABILITY



# METHANE: A CRITICAL OPPORTUNITY TO ADDRESS CLIMATE CHANGE

- At COP26, the U.S. and over 100 countries pledged to reduce **overall methane emissions by 30% by 2030**
- At the North American Leaders' Summit, the U.S. committed to reduce **waste methane emissions by at least 15% by 2030** from 2020 levels
- Reducing methane emissions can contribute to around **8% of the 50-52%** emissions reductions needed by 2030



AN "ALL-IN" PATHWAY TO 2030:  
**U.S. Methane Emissions  
Reduction Potential**  
AUGUST 2022

Authors:  
John H. Garbutt, William H. Hansen, Michael A. Kelly, Charles S. Johnson, James C. Orr,  
John P. Sweeney, Katherine A. Strickland, Keith W. Thorne, William H. Turner, James  
Woodwell, David A. Clark, Stephen A. Woodwell, William H. Hansen

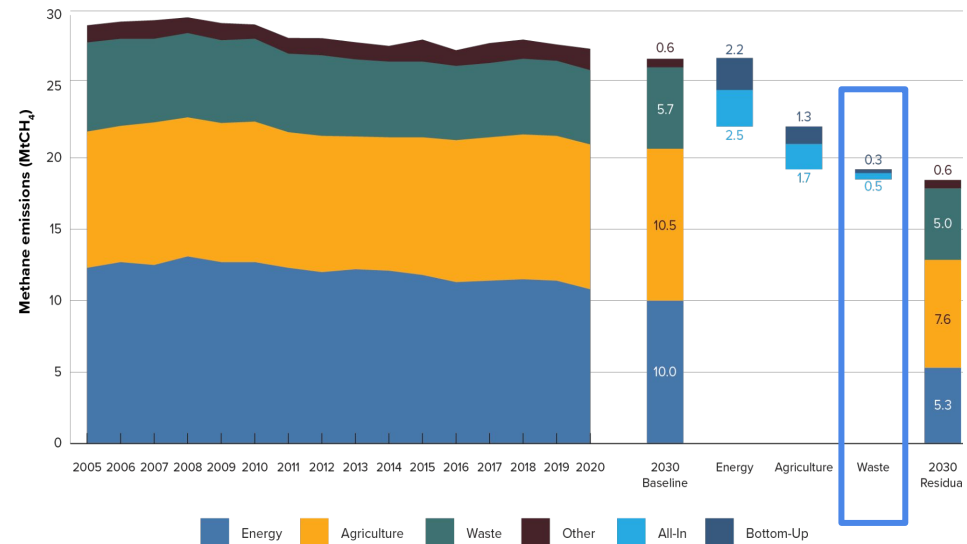
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# ACHIEVING 30% METHANE REDUCTIONS BY 2030

- Methane emissions can be reduced by 227 MtCO<sub>2</sub>e, or more than 30% below 2020 levels by 2030
- Waste methane emissions decrease by 15% by 2030
- Key policies
  - Federal methane fee and EPA waste reduction goal
  - Waste diversion policies
  - Landfill emissions capture & storage
  - Emissions monitoring and accounting



# ROLE OF FEDERAL + SUBNATIONAL ACTORS

**Federal government:** Landfill regulations, food waste reduction goals, incentivize waste and recycling infrastructure, methane fee on waste

**States:** Landfill standards, methane monitoring programs, waste diversion ordinances, composting + recycling infrastructure

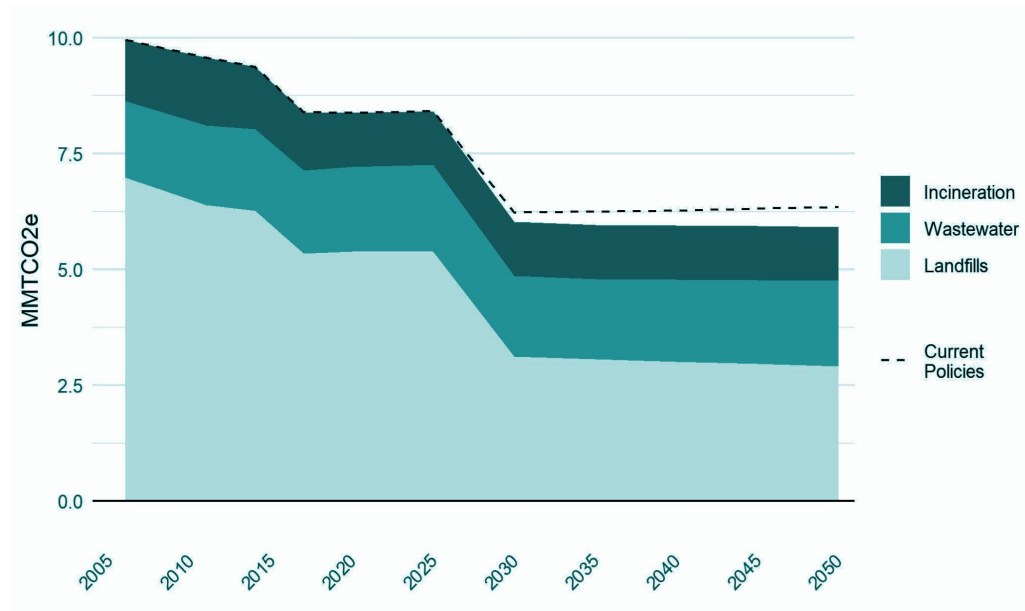
**Local governments:** Waste diversion targets, composting + recycling infrastructure, community education programs

**Businesses:** Methane monitoring and abatement, technology innovation to use organic waste, food waste reduction



# STATES ARE LEADING THE WAY

- In Maryland, the waste sector can deliver **39% GHG emissions reductions by 2031**
- Key policies & actions:
  - **Zero-waste** hierarchy
  - **Improved data** on waste sources
  - Universal & accessible **composting**
  - Collaboration to **educate** public



Source: Maryland's Climate Pathway ([www.marylandsclimatepathway.com](http://www.marylandsclimatepathway.com))

# REDUCING WASTE METHANE EMISSIONS AT UMD



Diverted 44% of waste in 2022



Food recovery network brings surplus food to homeless shelters



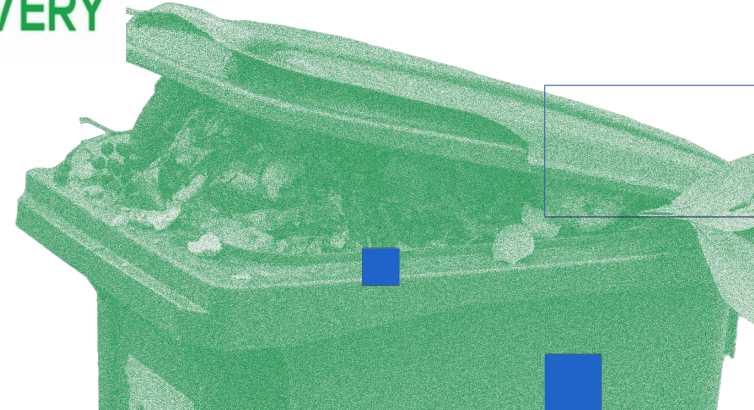
Recycling/compost bins on campus  
Mini Bin program in all offices



Discounts for bringing reusable mugs and reusable bags



# Austin Resource Recovery City of Austin, TX





# Austin, Texas (United States)



# Rapid Population Growth

Table 3. The 15 Most Populous Cities on July 1, 2022

Rank	Area Name	State	2022 Total Population
1	New York city	New York	8,335,897
2	Los Angeles city	California	3,822,238
3	Chicago city	Illinois	2,665,039
4	Houston city	Texas	2,302,878
5	Phoenix city	Arizona	1,644,409
6	Philadelphia city	Pennsylvania	1,567,258
7	San Antonio city	Texas	1,472,909
8	San Diego city	California	1,381,162
9	Dallas city	Texas	1,299,544
10	Austin city	Texas	974,447
11	Jacksonville city	Florida	971,319
12	San Jose city	California	971,233
13	Fort Worth city	Texas	956,709
14	Columbus city	Ohio	907,971
15	Charlotte city	North Carolina	897,720

Source: U.S. Census Bureau, Population Division, Vintage 2022 Population Estimates, release date: May 2023.

Table 1. The 15 Fastest-Growing Large Cities Between July 1, 2021, and July 1, 2022, With Populations of 50,000 or More on July 1, 2021

Rank	Area Name	State	Percent Increase	2022 Total Population
1	Georgetown city	Texas	14.4	86,507
2	Santa Cruz city	California	12.5	61,800
3	Kyle city	Texas	10.9	57,470
4	Leander city	Texas	10.9	74,375
5	Little Elm city	Texas	8.0	55,357
6	Westfield city	Indiana	7.7	54,605
7	Queen Creek town	Arizona	6.7	70,734
8	North Port city	Florida	6.6	85,099
9	Cape Coral city	Florida	6.4	216,992
10	Port St. Lucie city	Florida	6.4	231,790
11	Conroe city	Texas	6.3	101,405
12	Maricopa city	Arizona	6.2	66,290
13	New Braunfels city	Texas	5.7	104,707
14	Lehi city	Utah	5.6	84,373
15	Medford city	Massachusetts	5.2	65,399

Source: U.S. Census Bureau, Population Division, Vintage 2022 Population Estimates, release date: May 2023.

# Austin Resource Recovery

## Mission

We provide essential services that protect people and our planet

## Vision

Driving the global transformation of traditional waste management to sustainable resource recovery.

## Key Plans

- Austin Resource Recovery Comprehensive Plan
- City of Austin Climate Equity Plan
- U.S. Plastic Pact Commitments



DEFINING  
**ZERO  
WASTE**

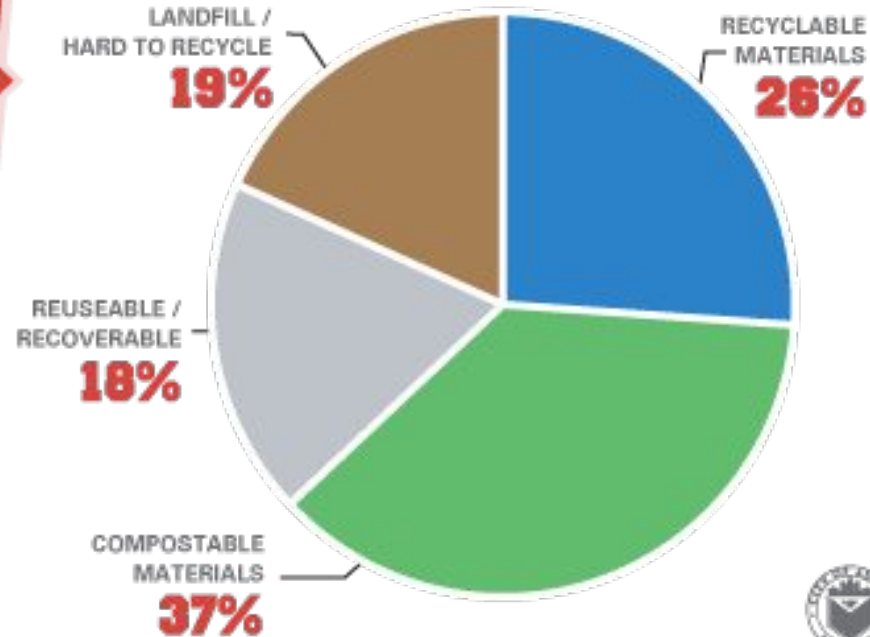


# Austin's Waste Composition

**AVERAGE  
COMPOSITION OF  
PRIVATELY**

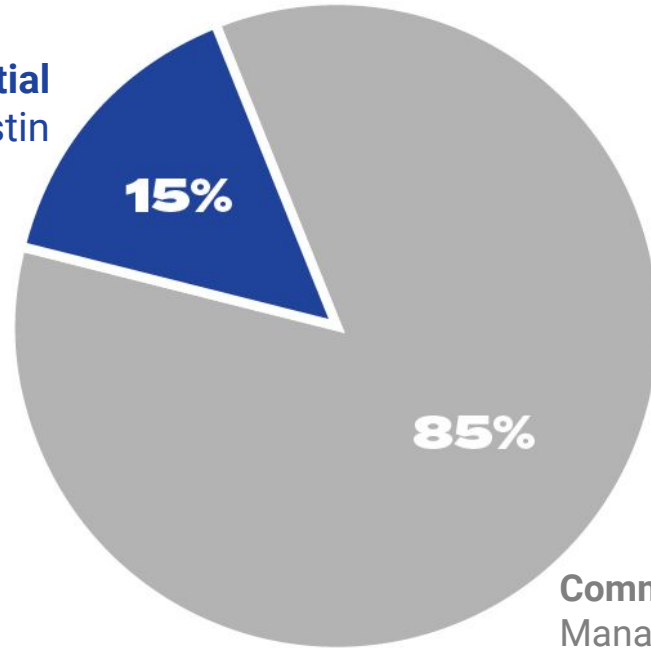
**COLLECTED  
TRASH STREAM BY  
MATERIAL CLASS**

Summarized graph  
for sorts performed  
at landfills for  
Commercial  
(Business and  
Multifamily) loads.



# City Control Versus Policy Influence

**Residential**  
Managed by City of Austin



**Commercial & Multifamily**  
Managed by Private Haulers

# Services & Policy to Reduce Landfill Organics



## ARR Customers (single-family residential)

- Curbside weekly compost + large brush collection

## Commercial and Multi-family Properties

- Organics diversion required for businesses with a food permit



# Food Rescue Program Infrastructure

## What is the rebate for?

- Expand food rescue program infrastructure at an affected premises that distributes food to persons earning 50% or less of the Median Family Income (MFI) in Austin

**Earn up to \$1,800 in rebates**  
from the City of Austin to expand your food rescue program.\*

### Eligible expenses include:

- Improving food storage (refrigerators, freezers, and shelving)
- Purchasing equipment to transport food (coolers and thermal bags)

### *Apply at*

[AustinTexas.gov/ZWBizRebate](https://austintexas.gov/ZWBizRebate)

### *Email*

[CommercialRecycling@AustinTexas.gov](mailto:CommercialRecycling@AustinTexas.gov)  
to learn more



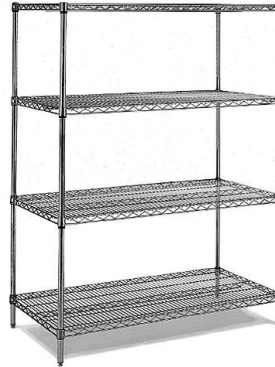
\*available to organizations which distribute food to persons earning 50% or less of median family income in Austin



# Food Rescue Program Infrastructure

## How can the rebate be used?

- Expand cold food storage that prolongs life of edible food
- Food safety transportation equipment including thermometers, coolers, and hot food insulated transporters
- Developing or improving non-perishable food storage space, including shelves and racks





# Case Studies

## Bento Picnic

Switched from disposable to reusable dishes

## Foundation Communities

Expanded the size of exterior dumpsters - early - ahead of ordinance requirements

## Royal Grocery

Purchased indoor recycling and compost bins and compostable to-go cups



# Case Studies

## Lick Honest Ice Cream

Switched from disposable to compostable bowls and serving ware

## Batch Craft Beer and Kolaches

Purchased all compostable serving ware and cups

## East Side Pies

Constructed a new enclosure for their recycling dumpster

## University of Texas Kappa Delta House

Purchased indoor recycling bins



# ReVerse Pitch



Since 2015 the City of Austin has offered \$10,000 (USD) to help launch a circular business that turn waste into new enterprises.

## Gro-arts

Repurposing spent grain from distilleries to create beverage coasters

## Biochar Filter Socks

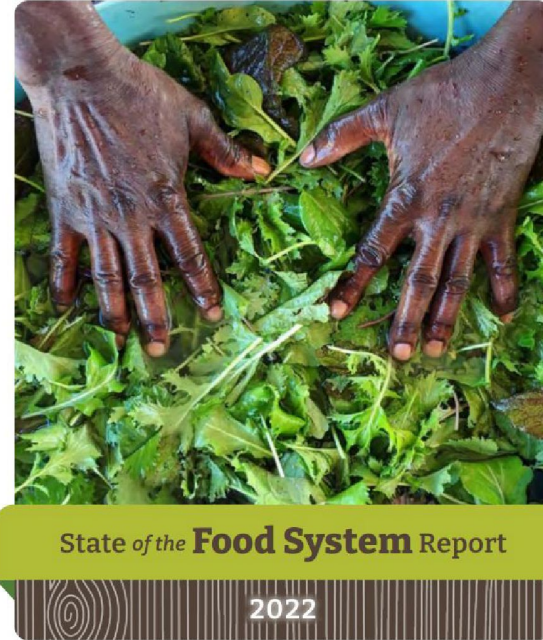
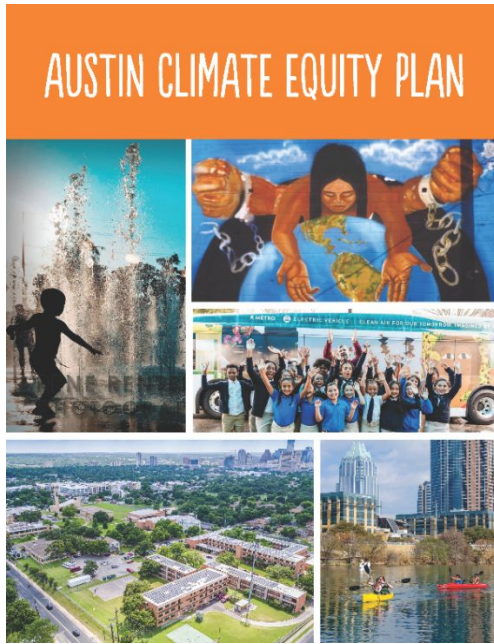
Repurposing spent grain from Fierce Whiskers Distillery and used wooden pallets to create 'wattle socks,' which help prevent soil erosion and capture toxins from storm-water runoff

## GrubTubs

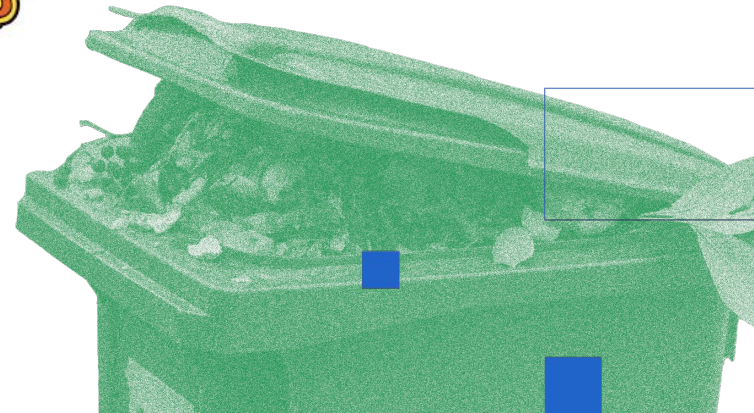
Commercial food scrap composting service. Collection and hauling service. Fly larva composting in a bucket.



# Additional Planning Efforts



# Sierra Nevada Brewing Co.



# Sierra Nevada Brewing Co.

- Founded 1980 – Chico, CA
- 2nd brewery – Mills River, NC (2014)
- Private/family-owned
- 3<sup>rd</sup> largest craft brewery in US
- 1100 employees



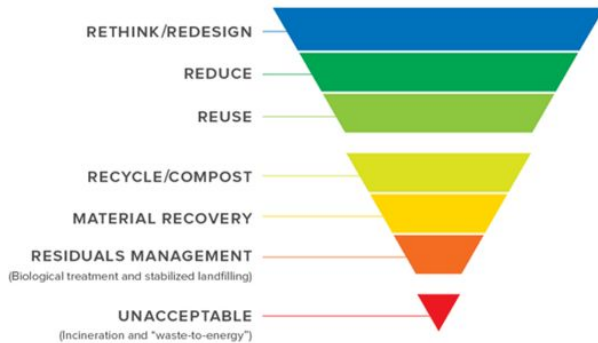
# Commitment to Zero Waste

99.6% diversion

First TRUE Platinum Zero Waste business



## THE ZERO WASTE HIERARCHY 7.0



# Spent Grain & Yeast

## Spent Grain:

- ~250,000 lbs /day
- Feed for dairy cows

## Spent Yeast:

- CA: ~40,000 lbs/ day mixed with spent grain for dairy cows
- NC: ~30,000 lbs/day digested onsite, biogas used in boilers and microturbines





# Onsite composting

- Commissioned – 2010 (CA)
- Pre/post-consumer food waste, hops, grain, landscaping debris
- ~ 2 tons/day capacity



Lifetime impact  
6,121,147 lbs = **1,876 MTCO<sub>2</sub>e avoided**  
(EPA WARM)

# Edible Food Donation



- SB 1383
- Prepared food
  - Taproom & Events
- Estate produce
  - 2 acre garden
- Employee volunteers
- Supports shelters, youth organizations, food banks

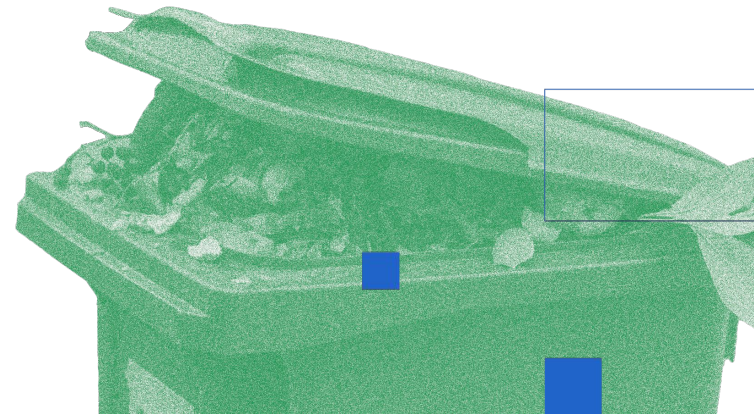
530 Food Rescue

<https://www.buttecaa.com/foodrescue/>

Or [info@530FRC.org](mailto:info@530FRC.org)



# Actionable Next Steps



# Recommendations for non-governmental actors



**Set food waste  
reduction targets**



**Perform a waste  
audit**



**Buy only what you  
need**



**Partner with value  
aligned orgs**



**Optimize storage  
and service**



**Donate surplus  
food**



**Recycle residual  
organics**



**Become an  
advocate**

Policy or Program		State & Municipal Examples
Upstream	<b>Organics Diversion Requirements</b>	CA, WA, VT; Austin, TX; Portland, OR; Hennepin County, MN
	<b>Organics Collection or Drop-Off</b>	Washington, DC; Denver, CO; Dubuque, IA; Boise, ID
	<b>Compost Procurement Plans</b>	CA, WA
	<b>Consumer Education Campaigns &amp; Social Marketing</b>	Hamilton County, OH; Asheville, NC; Madison, WI; Jersey City, NJ; Orlando, FL
	<b>Grant Programs for Food Donation, Collection, &amp; Recycling Infrastructure</b>	MassDEP Sustainable Materials Recovery Program (SMRP); CalRecycle Organics & Food Recovery Grants
	<b>Tax Deductions + Rebates for Donation and Diversion</b>	CA, WV, NY, MO; Austin, TX; Washington, D.C.
Downstream	<b>State Landfill Regulations</b>	CA, OR, MD
	<b>Super-Emitter Response Programs</b>	PA, CA
	<b>Implementing BMPs at Municipal Landfills</b>	SWEEP Standard

# States & Municipalities: Funding Opportunities

Funding Opportunity	Source/Agency	Details
<b>Climate Pollution Reduction Grants (CPRG)</b>	IRA - EPA	<b>\$5B</b> for climate planning & implementation grants to states, local governments, tribes, and territories. Waste is a focus area; priority climate action plans are due <b>March 2024</b> .
<b>Greenhouse Gas Reduction Fund (GGRF)</b>	IRA - EPA	<b>\$20B</b> to nonprofit financing entities and community lenders to support clean energy and air pollution reducing projects. EPA will make grants through 9/30/24 with financing distributed on an ongoing basis to eligible projects.
<b>Solid Waste Infrastructure for Recycling (SWIFR) Grant Program</b>	BIL - EPA	<b>\$275M</b> to assist states, local governments, tribes, and territories in making improvements to local waste management (including organics!). Applications closed but will reopen in FY24.
<b>Composting and Food Waste Reduction (CFWR) Cooperative Agreements</b>	Farm Bill - USDA	<b>~\$20M</b> from FY22-23 to assist local and municipal governments with compost and food waste reduction plans. Opportunity for additional funding in 2023 Farm Bill.

# Upcoming Opportunities for Federal Action

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## Opportunities to Reduce Food Waste in the 2023 Farm Bill

APRIL 2022



Prevention



Recovery



Recycling



Coordination

## EPA Can Take Action to Control Landfill Methane

Landfills are the **third largest human-driven source of methane**, a super-potent greenhouse gas contributing to climate warming. Landfills also emit other pollutants that impact **air quality, human health** and **quality of life**. EPA can take action to protect our climate and communities.



## Be Part of the Solution

- **Take Action:** Check out our [Waste Methane Resource Airtable](#) for funding opportunities, sector-specific toolkits, and model programs and policies to see what you can do to reduce food waste and landfill methane emissions in your state, city, or organization.
- **Sign on:** Join our [sign-on letter](#), urging the EPA to take swift action to keep food waste out of our nation's landfills and reduce planet-warming methane emissions from buried waste.





# Questions?

**Please type your questions into the Q&A feature in Zoom.**

Slides and resources will be shared via email,  
and you can reach us at:

Olivia Alves: [oalves@rmi.org](mailto:oalves@rmi.org)

Jasmine Chiu: [jchiu@rmi.org](mailto:jchiu@rmi.org)

