

# **Zero Waste Community Planning**

**Portia Sinnott, ZWUSA Program Director  
National Zero Waste Virtual Conference  
December 2, 2020**



**Zero Waste USA**

*Inspiring Communities*



# International Definition

**Zero Waste** is the conservation of all resources by means of responsible production, consumption, reuse and recovery of products, packaging and materials, without burning, and with no discharges to land, water, or air that threaten the environment or human health.





# Zero Waste Declaration, 2020

**The first Earth Day was over 50 years ago.** Recycling, its natural industrial child, was envisioned to complete the resource circle, save the wilderness, generate jobs, and build the back end of the Gross National Product (GNP) all at once.

We believe the Earth calls us each and all to move swiftly towards Zero Waste.

**This Zero Waste World** will be founded on environmental and social justice principles that help create vibrant communities in harmony with nature:

**CENTER EQUITY:** We stand in solidarity with and support the efforts of frontline communities and Black, Indigenous and People of Color. We envision a just and inclusive system resulting in a sustainable and regenerative future, while advocating for policies and practices that ensure human safety, equitable access to resources and opportunities, and elimination of toxins and pollution that negatively impact ecological health.

**REDESIGN:** We insist that manufacturers minimize and, where possible, eliminate hazards and redesign products for highest material and energy efficiency, focusing services and products to embody durability, repairability, reuse, with recycling and/or composting as a final option, in that order.

**BAN WASTEFUL PRODUCTS:** We will ban products that are demonstrated to be wasteful by design, or contaminate recycling or composting programs, or are problematic in the environment.

**MAKE PRODUCERS RESPONSIBLE:** We insist companies minimize and, where possible, eliminate the hazards their products pose to the environment and human health throughout the entire life cycle of the product, from resource extraction to final disposition. Further, producers should be held financially responsible for remedies of their product's impacts – including costs for health care, management of discards, and environmental clean-up.

**SEPARATE AT THE SOURCE:** After redesign, we will collect all discarded materials and products separated at the source and further sort them into higher quality fractions for reuse, recycling, or composting, with nothing left out and nothing left over.

**RESCUE FOOD AND COMPOST ORGANICS:** We will establish and support programs to rescue food for people and animals, and to recover organic materials to make and use compost and mulch to reduce and sequester greenhouse gases.

**SUPPORT AND EXPAND REPAIR AND REUSE:** We will support existing reuse and repair organizations and infrastructure and expand opportunities for reuse and repair through outreach and education, promotion, and investment.

**BUILD ZERO WASTE INFRASTRUCTURE:** We will invest in Zero Waste infrastructure, including resource recovery parks, to safely salvage usable items and parts and handle all discards as resources to be refined.



# **Eight Steps To Becoming A Zero Waste Community**



**Zero Waste USA**

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Embrace and Achieve Zero Waste*



## A Short Introduction To Zero Waste USA's Eight Steps To Becoming A Zero Waste Community

Most routes to Zero Waste follow a similar trajectory, yet the point of entry and task order will vary based on **who initiates the conversation** – staff, elected or advocates, and the jurisdiction's size, political culture, policies, programs and infrastructure. The path will be very different for a small rural town of two employees, one service provider and a 20-year disposal contract, than for a well-staffed metropolis with 6 service providers, 2 transfer stations and no landfill.

### STEP 1. ASSESS

**Investigate:** Scrutinize the current system. What types of programs are missing? What is the life of the current landfill and what are the drivers for pursuing Zero Waste - Climate Change? Jobs? High cost of life of facilities or contracts? Community concerns about proposed

**Assemble:** Assemble the collected information in an organized format

**Understand:** Develop a basic understanding of your discard management regional resources and upcoming key decisions.

### STEP 2. DEFINE

How a community defines high diversion and Zero Waste, the process and stakeholder process they develop are crucial considerations. To be successful, but words have the power to inspire as well as hold people back

**Organize:** Prepare a structured process for public involvement. Draft agendas, possible activities and existing activities, task-holder, timekeepers, etc. and relevant deadlines. Try to anticipate all possible as you go; be prepared to adjust and readjust.

**Select:** After getting a handle on the tasks above, select a few descriptions and principles as starting points. Brainstorm with the discussion group. When ready, test the process on a larger group of allies. **If all goes well, it is now time to launch the public discussion.**

### STEP 4. ENGAGE: CREATE A BUZZ

- ✓ Educate community, staff, decision makers and advisory boards
- ✓ Write articles and press releases
- ✓ Offer presentations, videos, films, awards
- ✓ Ask! Somebody has to ask for a Zero Waste future
- ✓ Solicit input from entire community: staff, decision makers, advisory boards, stakeholders and general public
- ✓ Formally request the adoption of Zero Waste goal



# Sonoma County, California





# 2018 Zero Waste Resolution Request To Sonoma County Jurisdictions

APRIL, 2018

The Sonoma County Zero Waste Task Force (ZWTF) hereby asks the cities, towns and County of Sonoma to adopt a Zero Waste Resolution with substantive goals and policies in 2019. In support of this request, the ZWTF provides a companion document, 2018 Sonoma County Zero Waste Initiatives.

The ZWTF was established in 2017 by the Sonoma County AB 939 Local Task Force as stakeholders, including the Sonoma County Waste Management Agency, 350 Sonoma with Justice, Sierra Club Redwood Chapter, Compost Coalition of Sonoma County, Z County, North Bay Labor Council, Sonoma County Regional Climate Protection Authority, County Conservation Action, Recology Sonoma-Marin, Sonoma County Resource Fair, businesses and engaged citizens.

With Zero Waste as a mutual goal, Sonoma County jurisdictions can regain national leadership through development and implementation of innovative plans, policies and programs.

- Reduce waste generation and maximize diversion of resources from disposal
- Reduce greenhouse gas emissions by progressive reduction in the use of fossil fuels
- Protect public and environmental health by preventing pollutants from entering the air, soil and water;
- Create quality, equitable jobs and inspiring new enterprises, thus strengthening the local economy;
- Protect and preserve our beautiful and thriving county for future generations.

The ZWTF asks all Sonoma County jurisdictions to:

- **SET** a goal to divert 100% of waste from landfills by 2030. Currently, Sonoma County averages 4.6 pounds of waste per person per day – currently 4.6, by at least 10% each year;
- **SIGN** on to the UN Environmental Program Urban Environment Declaration and the Sonoma County commitments to Zero Waste, Manufacturer Responsibility and Circular Economy;
- **LEAD BY EXAMPLE** by instituting and/or expanding high diversion programs for all government facilities, events and projects;
- **EDUCATE** the public by expanding the on-going information and outreach programs to educate the community benefits of reducing wasteful consumption and increasing reuse, repair, composting and recycling;

To view these documents, visit: [ZWUSA Resource Page](#)



## Local Task Force on Integrated Waste Management

Existing solid waste management and resource recovery committee members.

### Authority

This organization is created and its members appointed by resolution of the Board of Supervisors to establish and disband the Local Task Force on Integrated Waste Management. Board Resolution No. 90-0437, 3/13/90; Resolution 96-1648, 12/17/96; Summary Action #17, 4/25/2017

### Duties

To develop goals, policies, and procedures which are consistent with guidelines and regulations adopted to guide the development of the Siting Element of the County-wide integrated waste management plan.

### Membership Term

3 years.

### Meeting Schedule

Bi-monthly - Second Thursday of the month - 1:30-3:00 p.m. - Main Conference Room at Sonoma County Department of Transportation & Public Works

### Membership Composition

Membership of the Local Task Force on Integrated Waste Management shall be comprised of representatives from the city and the County, organizations with technical expertise, and other interested parties as listed below: Local Enforcement Agent (recommending agency - Environmental Health Division), Department of Transportation and Public Works, Solid Waste Industry Representative (2), Climate Change Organization, Non-Profit Recycling Organization, Sonoma County Recycling Association, League of Women Voters, Sierra Club, Agriculture Industry (recommending agency - Sonoma County Ag. Commissioner), Chamber of Commerce (recommending agency - Council of C. of C. Directors), Marketing Specialist, Scientist, Education Representative, Clean Water Organization, Community Representatives (five - one selected by each County Supervisor). The city representatives shall be citizens of the city.



# Suggestions for 2018

## Sonoma County Zero Waste Initiatives

APRIL, 2018

The Sonoma County Zero Waste Task Force (ZWTF) has agreed upon the following initiatives to offer jurisdictions ideas and actions for consideration in their zero waste plans. These initiatives are organized in six sections: Reduce, Recover/Reuse, Education and Outreach, Green Purchasing, EPR and EPP, Service Providers and Workforce, and Fiscal Sustainability.

### A. REDUCE

- Support programs and incentives to reduce the amount of non-recyclable or hazardous.
- Incentivize use of locally extracted, manufactured construction materials, compost and mulches.
- Advocate for products designed for on-going use to the highest post-consumer recycled content possible.
- Foster the development and commercialization of products including the collection, sorting, and processing of waste.
- Require and incentivize restaurants, caterers, grocers to donate excess edible food to food distribution programs.
- Expand and develop ordinances to reduce distribution of single-use goods (such as single-use plastic bags not covered by current policy, take-out food packaging, straws, etc.). Expand support of "Sip it Sonoma" campaign where restaurants provide straws only upon request.
- Adopt and implement voluntary then mandatory sales and disposal bans for toxic, non-recyclable or compostable materials as well as single-use, disposable and problematic products.
- Provide grants and loans for not-for-profit organizations that remove debris from our watersheds and beaches, rescue surplus food, repair durables, and collect and redistribute reusable goods.
- Create a county-wide Construction and Demolition Reuse and Recycling Ordinance.



### B. RECOVER/REUSE

- Develop incentive programs for the establishment and expansion of local businesses that recycle and reuse materials as feedstocks such as paper, compost and building materials.
- Provide economic incentives to encourage manufacturers to use locally recycled and reusable materials.



# Changing the Culture



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# Public Policy Champion



# Engage All Stakeholders



## **WORKSHOP #3** **INTEGRATED SOLID WASTE** **MANAGEMENT MASTER PLAN** **March 2011**

### **FINANCIAL PLAN**

Projected capital and operating costs  
50-year life-cycle pro-forma  
Impact on rates  
Funding and financing options

### **IMPLEMENTATION PLAN**

Milestones for achieving 50, 75 and 90 percent  
Methods for measuring progress toward the goals  
Projections for when new services and facilities  
needed  
Program and facility sequencing and phasing



# Build a Constituency



# Green the Schools







# Hold Fix-It Clinics, Swaps and Reuse Fairs



# Diversity, Equity, Inclusion and ... Justice

## An Essential Workforce

- Zero waste and climate frontline workers support the green economy
- 21,000 US workers sorting recyclables
- This workforce, often unseen, maintains the efficiency of recycling system
- Recycling plays a key role in job creation and creates 10x more jobs than landfilling

## Key Issues

- High injury and fatality rates
- Unsafe working conditions
  - Loud, heavy machinery
  - Exposure to hazardous items
- Low wages, few benefits
- Limited advancement



- Common use of temporary workers
  - Fewer workplace protections
  - Less likely to be informed of rights

# Zero Waste Toolkit



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# Zero Waste Community Toolkit

- ① Zero Waste Planning Checklist  
(Policies, Programs & Infrastructure) and  
Service Opportunity Analysis \*  
(What's missing?)
- ② Zero Food Waste Planning Checklist
- ③ Divertability Analysis with Commodity  
Analysis (Generation, types, amounts and sources of  
discards plus exploring their value)



# Community Planning Checklist

## Zero Waste USA Community Planning Checklist, 2020

Enter Jurisdiction Name and Base Year

Place a Y in the column to the left of initiatives that have been implemented in your community. If in development, enter a D. Circle details - i.e. Mandatory, or change the **color** of the font.

Sector	Policies	Programs	Infrastructure
Entire Community	Zero Waste - Goal: By 20____, Plan, 20____	Zero Waste Grants - Waste Reduction	Tool Lending Library
	Goal Integration Across Plans - CAP, Sus Plan, Gen Plan	Zero Waste Grants - Collection, Processing, Mkt Dev	Water Bottle Filling Stations - Retail, Schools, Parks
	Precautionary Principle - Adoption, Integration	Zero Waste Revolving Loan Fund - Collection, Process	Retail Re-Filling Stations - Hardware
	Change Metric - Generation not Diversion	Zero Waste Revolving Loan Fund - Market Dev	Zero Packaging Store
	Involve Leadership Groups in ZW Program	Market Development - Local, Regional, State, Int'l	Museum Of Bad Design - Short Term, Permanent
	Environmentally Preferable Procurement	Rental, Reuse, Repair & Recycling Biz Directory	Resource Recovery (RR) Center
	Minimum Content Requirements	Rental, Reuse, Repair & Recycling Biz Promotions	RR Park - General, Utilizing 12 Market Categories
	Require Recyclable, Compostable or Reusable Products	Rental, Reuse, Repair & Recycling Biz Incentives	Research & Development Institute
	Take Backs - Voluntary, Mandatory	Green Product and Services - Directory, Promotions	Plastic to Oil Facility
	Bans - Sale, Collection, Disposal	LBX (Lead By Example) - Public Receptacles, Signage	Plastic Recovery Facility (PRF)
	Disposable Fee - Voluntary, Mandatory	LBX - Training, Government Facilities, Venues	Wood to Biochar
	Reusable Take-Out Packaging - Discount, Go Box, Other	LBX - ZW Events - Public, Private	Biosolids Treatment/Beneficial Reuse
	Clear Bags For All Waste Streams	LBX - Reusable Dishware and To-Go Ware	Product Redesign ala Biomimicry, Grn Chemistry
	Only Compostable Green or Brown Produce Bags	LBX - Carbon Farming for Public Lands and Parks	Other: _____
	Work on Statewide Packaging Policy Initiatives	LBX - Interdepartmental Green Team ZW Support	Other: _____
	Product Stewardship - Problem Materials	Other: _____	
	Other: _____	Other: _____	
Residential - Single and Multi-Family	Universal Service - Recycling, Composting	Behavior Change Marketing	Reuse Shed - Household Goods, Bldg Matls
	Rate Structure Incentives	Outreach - Presentations, Door-To-Door, Ambassadors	Reuse Warehouse - Household Goods
	Mandatory Participation - Recycling, Composting	Technical Assistance - Phone, Email, Events	Reuse Warehouse - Building Materials
	Mandatory Enforcement - Recycling, Composting	Bin and Cart Audits - Voluntary, Mandatory	Center For Hard To Recycle Materials
	Mandatory Source Separation - Recycling, Composting	Reuse Collection - Sorting, Upgrading, Sales	Recycling Processing
	Rate Structure Incentives	Share, Reuse, Repair Events	Yard Trimmings Processing
	Service Provider Payment Incentives	Recycling Collection - Single Family, Multi-Family	Food Scraps - Composting, Digestion
	Service Provider Minimum Requirements	Bulky Goods Collection - Reusable, Recyclable	Wood Recycling Facility, Pallets
	Other: _____	Food Waste Prevention	Wood Recycling Facility, Dimensional Lumber
	Other: _____	Food Donations - Gleaning, Food Bank, Soup Kitchen	Wood Recycling Facility, Logs
		Backyard Composting	Mixed Waste Processing (MORT) After Source Sep
		Organics Collection - Yard Debris, Food Scraps	Other: _____
		Every Other Week Collection - Trash, Recyclables	Other: _____
		Separate Collection - Diaper and Animal Waste	

# Service Opportunity Analysis

## Zero Waste USA Service Opportunity Analysis 2020

Enter Jurisdiction Name and Base Year

Enter a Service Code to the right of each Material Type: **CU - Curbside**, **PU - Pick Up**, **DO - Drop-off**, **BB - Buy Back and Blank - No Service**. Circle clarifying details - i.e. Toys or Shoes, or change the **font color**. Enter Service Provider Name and requirements in the subsequent column. Review Checklist for inspiration and possible material types.

Category	Material Types	Services	Service Provider Details and Requirements
Reusable Goods	Food/Surplus Garden or Farm Crops		
	Recoverable Prepared Food		
	Household Goods		
	Building Materials		
	Household Appliances		
	Electronics		
	Clothes/Shoes		
	Reusable Soils, Gravel		
	Art Materials, Teacher Supplies		
	Other: _____		
	Other: _____		
Paper	Cardboard		
	Office Paper		
	Mixed Paper (cereal boxes, shoe boxes, magazines)		
	Cartons/Aseptics (milk cartons, juice boxes)		
	Coffee Cups		
	Paper Towels, Napkins		
	Other: _____		
	Other: _____		
Glass	Bottles and Jars		
	Window Glass		
	Broken Glass		
	Light Bulbs, Compact Fluorescents, Light-emitting Diodes		
	Other: _____		
	Other: _____		

# Community Planning Checklist, Food Discards – US or California

Zero Waste USA/NCRA Community Planning Checklist - Food Discards, 2020

[www.zerowasteusa.org](http://www.zerowasteusa.org)

Section	#	Recommendations - USA DRAFT 1.0	Education & Data	Policy	Logistics & Infrastructure	Short-Term	Medium-Term	Long-Term
Place a <b>Y</b> in the column to the left of initiatives implemented in your community, an <b>R</b> if you utilize it regionally, or <b>D</b> if in development.								
<b>A</b>		<b>SURPLUS FOOD GENERATION</b>						
A	1	Create, maintain, distribute and publicize a food donation and prevention guide, highlighting information and resources including grants. Leverage business improvement districts, merchant associations, farmers' markets, small business assistance centers, service providers and site inspectors to reach food generators.	•			•		
A	2	Distribute guides and contacts to food service operations when they get their new or renewed business licenses or food safety inspections. Include descriptions of practices that reduce plate waste, such as discounted selling, smaller portion sizes and trayless dining.	•			•		
A	3	Promote program and grant resources offered generators seeking to do more prevention and recovery.	•			•		
A	4	Create, maintain, distribute and publicize an interactive centralized, and possibly crowd-sourced resource to include all players and information on prevention and recovery.	•				•	
A	5	Develop curriculum, certification and professional development materials in partnership with community colleges on food waste prevention, recovery, recycling and composting, focused on culinary training and existing culinary and custodial professionals. Evaluate if and how to subsidize the training.	•					•
A	6	Evaluate the feasibility of incentive pay schemes for employees trained and certified in food waste prevention, recovery, recycling and composting.	•					•
A	7	Promote a local TV show on food rescue, like BBC One's <a href="#">The Big Food Rescue</a> to raise awareness of the problem and local actions taking place.	•					•
A	8	Create and distribute model language for catering contracts specifying donation after events.		•		•		
A	9	Leverage your <a href="#">State Green Business Program</a> or similar programs to require caterers to offer food donation in their contracts and require other food service operations to engage in food waste prevention and recovery		•			•	
A	10	Create a clearinghouse of technical assistance providers and resources for food assistance organizations for: website development and maintenance, grant writing, off-hours volunteers, equipment, cold storage space, etc.		•				•



# Community Planning Glossary – Food Discards

Zero Waste USA/NCRA Community Planning Checklist - Food Discards, 2020

## Food Discard Glossary, 2017

**DRAFT 1.0**

At present there are no universally agreed upon terms and definitions in the wasted food/recovery field. The following definitions are based on the different goals, purposes and geographic regions for which they were created (i.e., reducing food waste, recovering food for animal feed, etc.).

GENERAL	
<b>Food</b>	Any substance or product, processed or unprocessed, intended for human consumption.
<b>Pre-Consumer Food</b>	Food at any point in the food supply chain before it reaches the consumer.
<b>Post-Consumer Food</b>	Food in the hands of the consumer.
<b>Food Loss</b>	The decrease in quantity or quality of food along the food supply chain due to factors such as spoilage, damage, or discarding.
<b>Surplus Food</b>	Food that is not eaten or moved through the food supply chain.
<b>Discarded Food</b>	Surplus food which ends up in the materials management system.
<b>Wasted Food</b>	Discarded food that can be put to a higher use than composting, value-added processing and/or feed.
<b>Prevention / Source Reduction</b>	Reducing surplus food and wasted food through improved food management practices.
<b>Food Scraps</b>	Parts of food which are not considered edible in their current form but are suitable for value-added processing and/or feed.
<b>Recoverable Food</b>	Surplus food that can avoid being wasted if redistributed, repackaged, or used for animal feed.
<b>Feed</b>	Any substance or product that is manufactured for animal consumption directly or after being processed.



**Commercial Food Waste Reduction  
in Alameda County**  
Opportunities for Preventing and Recovering Wasted Food  
from Businesses and Institutions



Prepared for the [Northern California Recycling Association](#)  
with support from [StopWaste](#)  
June 2017

# Divertability Analysis

## Step 1 – United States Diversion & Disposal Data, 2017

### Zero Waste USA Divertability Analysis Tool, 2020

Table 1. Diversion, Disposal & Generation			
United States		2017	
Population, 2017		325,100,000	
<b>Diversion</b>	<b>Tons</b>	<b>%</b>	<b>Pounds Per Person Per Day (PPPD)</b>
Source Reduction	Not Reported		
Reuse	Not Reported		
Recycling	67,200,000	25.1%	1.13
Composting	27,000,000	10.1%	0.46
Other	Not Reported		
<b>Total Diversion</b>	<b>94,200,000</b>	<b>35.2%</b>	<b>1.59</b>
<b>Disposed</b>			
Landfilled	139,600,000	52.1%	2.35
Combusted	34,000,000	12.7%	0.57
<b>Total Disposed</b>	<b>173,600,000</b>	<b>64.8%</b>	<b>2.93</b>
<b>Total Generation</b>	<b>267,800,000</b>		<b>4.51</b>
Data Source: US EPA Facts and Figures, 2019, based on 2017 Data			



# Divertability Analysis

## Step 1 - Diversion & Disposal

### 2017

## Zero Waste USA Divertability Analysis

Table 1. Diversion, Disposal & Generation

Population, 2017

### Diversion

Source Reduction

Reuse

Recycling

Composting

Other

### Total Diversion

### Disposed

Landfilled

Combusted

### Total Disposed

### Total Generation

Data Source: US EPA Facts and Figures



## Advancing Sustainable Materials Management: 2017 Fact Sheet

Assessing Trends in Material Generation, Recycling, Composting, Combustion with Energy Recovery and Landfilling in the United States

November 2019

Per Person  
Day (PPPD)

1.13

0.46

1.59

2.35

0.57

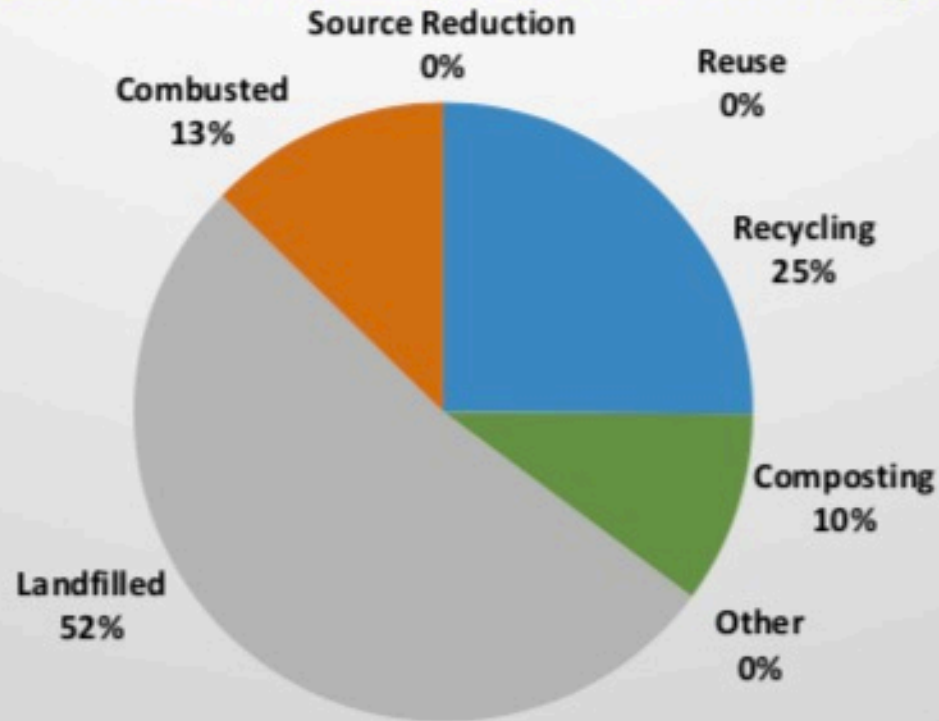
2.93

4.51

# Divertability Analysis

## Chart A - Diversion & Disposal Data, United States 2017

**Chart A. Solid Waste Diversion and Disposal**



# Divertability Analysis

## Step 2 – Disposal Stream Composition, US, 2017

Table 2. Disposal Stream Composition United States 2017			
Material	Data Source	Tons	%
Reuseable Goods *	Estimate	3,478,200	1.30%
Paper	National/EPA	66,339,900	24.77%
Glass	National/EPA	11,266,200	4.21%
Metals	National/EPA	24,799,500	9.26%
Plastics	National/EPA	35,016,300	13.08%
Rubber and Leather	National/EPA	9,018,900	3.37%
Textiles	National/EPA	16,045,500	5.99%
Wood	National/EPA	17,090,500	6.38%
Other Materials (in Products)	National/EPA	4,845,000	1.81%
Recoverable Food *	Estimate	2,033,500	0.76%
Food Scraps	National/EPA	38,636,500	14.43%
Yard Trimmings	National/EPA	35,180,000	13.14%
Misc Inorganic Wastes	National/EPA	4,040,000	1.51%
Grand Total		267,790,000	100.00%

**Data Source: US EPA Facts and Figures, 2019, based on 2017 Data, Reusables and Recoverable Food calculated by ZWUSA**

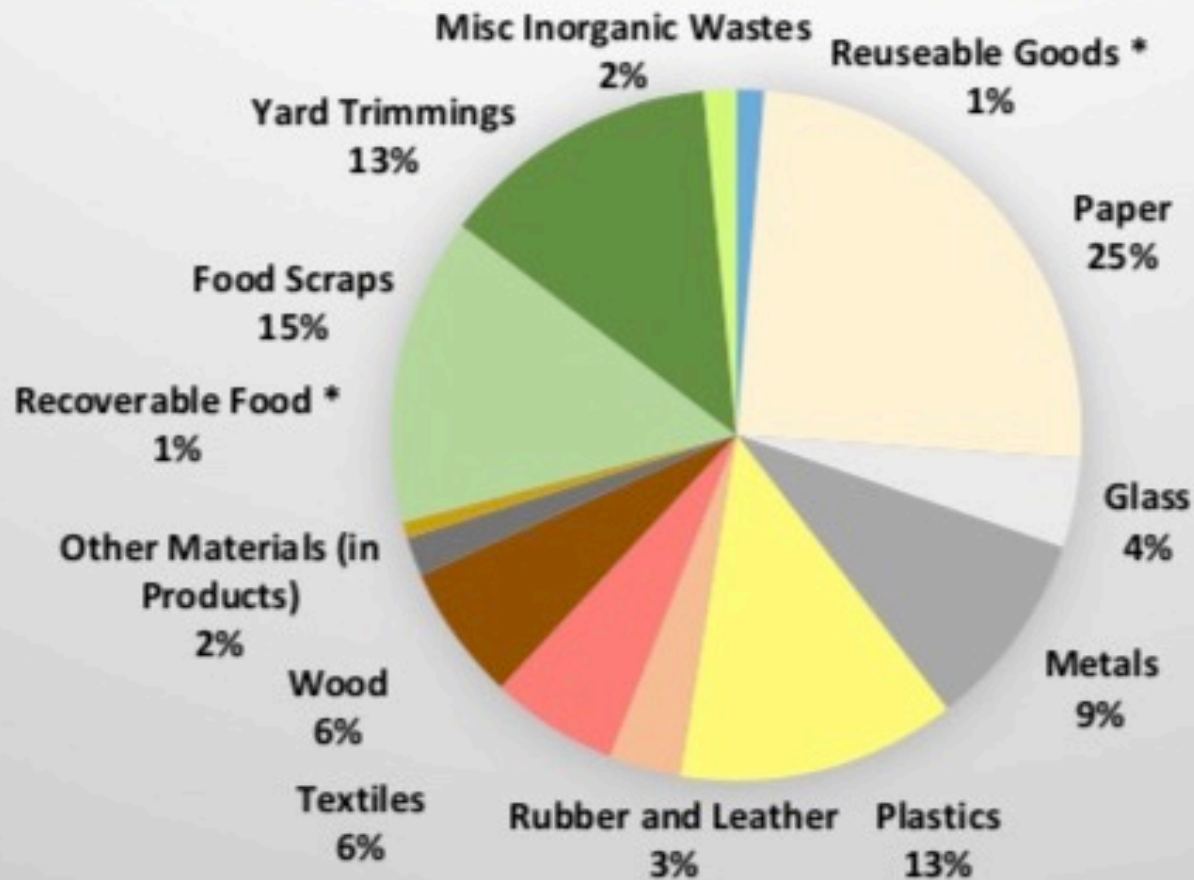
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# Divertability Analysis

## Chart B – Disposal Stream Composition, US, 2017

**Chart B. Disposal Stream Composition**



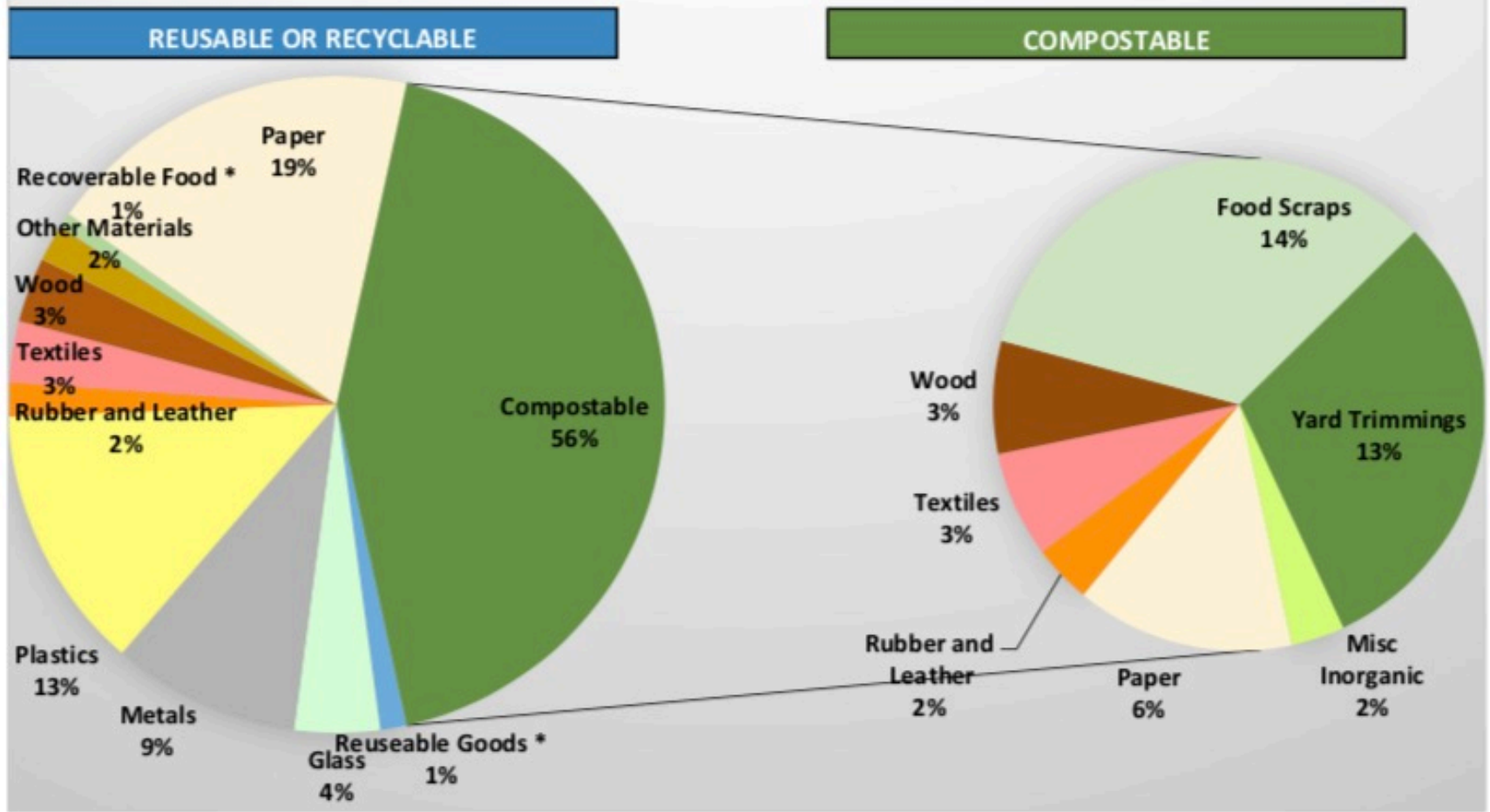


# Divertability Analysis

## Step 3 – Breakout Chart

### Zero Waste USA Divertability Analysis - United States, 2017

Chart C. Potentially Divertability



# Step 4 – Commodity Analysis

**Table 3. Market Commodity Estimate**

**United States**

**2017**

Based on Table 2, this table broadly estimates the potential value of what you are currently **disposing**. Please enter estimated prices per ton in your region. Note that prices should be as consistent as possible as to whether they address costs to separate, process, market and/or transport.

<b>Total Tons Disposed</b>		173,600,000		
<b>Material</b>	<b>%</b>	<b>Tons</b>	<b>Est Avg \$/Ton</b>	<b>Possible Annual Revenues</b>
Reuseable Goods *	2%	3,900,792	\$550	\$2,145,436,000
Paper	13%	22,514,184	\$20	\$450,284,000
Glass	5%	8,421,336	\$10	\$84,213,000
Metals	9%	16,327,080	\$40	\$653,083,000
Plastics	19%	32,997,888	\$100	\$3,299,789,000
Rubber and Leather	3%	6,015,240	\$100	\$601,524,000
Textiles	7%	12,499,200	\$100	\$1,249,920,000
Wood	8%	14,348,040	\$4	\$57,392,000
Other Materials (in Products)	2%	3,628,240	\$4	\$14,513,000
Recoverable Food *	1%	1,909,600	\$4	\$7,638,000
Food Scraps	21%	36,282,400	\$7	\$253,977,000
Yard Trimmings	6%	10,763,200	\$7	\$75,342,000
Misc Inorganic Wastes	2%	3,992,800	\$0	\$0
<b>Total</b>	<b>100%</b>	<b>173,600,000</b>	<b>\$73</b>	<b>\$8,893,111,000</b>
<b>Optional Adjustment</b>			<b>0%</b>	<b>\$0</b>

**Data Source: US EPA Facts and Figures, 2019, based on 2017 Data. Estimated Avg \$ Per Ton estimated by Zero Waste USA.**

**\* Yard Trimmings and Food Scraps volume reduced by 80% per net yield of compost from incoming raw material.**

# U.S. EPA Managing and Transforming Waste Streams

## Managing and Transforming Waste Streams – A Tool for Communities

[Contact Us](#)

Share

## Helping communities plan for less waste

- **Learn About the Planning Tool**
  - **Go to the Planning Tool**
  - **Go to the Policy and Program Impact Estimator**
- Waste is a valuable resource. Communities can recover the lost value of material discards by setting up systems for reuse, recycling, and composting.*



## Charting a Path Towards Zero Waste

**The Managing and Transforming Waste Streams Tool:** Explore 100 policies and programs communities can implement to reduce the amount of waste disposed in landfills and promote waste prevention and materials reuse across waste generation sectors. Access city and county ordinance, contract, and franchise agreement language and program websites.

<https://www.epa.gov/transforming-waste-tool>



# U.S. EPA Waste Reduction Model (WARM)

Version 15

## Waste Reduction Model (WARM) -- Inputs

Use this worksheet to describe the baseline and alternative waste management scenarios that you want to compare. The blue shaded areas indicate where you need to enter information.  
Please enter data in short tons (1 short ton = 2,000 lbs.)

1. Describe the baseline generation and management for the waste materials listed below.  
If the material is not generated in your community or you do not want to analyze it, leave it blank or enter 0. Make sure that the total quantity generated equals the total quantity managed.

2. Describe the alternative management scenario for the waste materials generated in the baseline.  
Any decrease in generation should be entered in the Source Reduction column.  
Any increase in generation should be entered in the Source Reduction column as a negative value.  
Make sure that the total quantity generated equals the total quantity managed.

Material Type	Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Tons Generated	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested
Paper	Corrugated Containers				NA	NA	0.00					NA	NA
	Magazines/Third-class Mail				NA	NA	0.00					NA	NA
	Newspaper				NA	NA	0.00					NA	NA
	Office Paper				NA	NA	0.00					NA	NA
	Phonebooks				NA	NA	0.00					NA	NA
	Textbooks				NA	NA	0.00					NA	NA
	Mixed Paper (general)				NA	NA	0.00					NA	NA
	Mixed Paper (primarily residential)				NA	NA	0.00					NA	NA
	Mixed Paper (primarily from offices)				NA	NA	0.00					NA	NA
Food Waste	Food Waste	NA					0.00		NA				
	Food Waste (non-meat)	NA					0.00		NA				
	Food Waste (meat only)	NA					0.00		NA				
	Beef	NA					0.00		NA				
	Poultry	NA					0.00		NA				
	Grains	NA					0.00		NA				
	Bread	NA					0.00		NA				
	Fruits and Vegetables	NA					0.00		NA				
	Dairy Products	NA					0.00		NA				
Yard Trimmings	Yard Trimmings	NA					0.00	NA	NA				
	Grass	NA					0.00	NA	NA				
	Leaves	NA					0.00	NA	NA				
	Branches	NA					0.00	NA	NA				
Mixed Plastics	HDPE				NA	NA	0.00					NA	NA
	LDPE	NA			NA	NA	0.00		NA			NA	NA
	PET				NA	NA	0.00					NA	NA
	LLDPE	NA			NA	NA	0.00		NA			NA	NA
	PP	NA			NA	NA	0.00		NA			NA	NA
	PS	NA			NA	NA	0.00		NA			NA	NA
	PVC	NA			NA	NA	0.00		NA			NA	NA
	Mixed Plastics				NA	NA	0.00					NA	NA
Bioplastics	PLA	NA				NA	0.00		NA				NA
Electronics	Desktop CPUs				NA	NA	0.00					NA	NA
	Portable Electronic Devices				NA	NA	0.00					NA	NA
	Flat-Panel Displays				NA	NA	0.00					NA	NA
	CRT Displays				NA	NA	0.00	NA				NA	NA
	Electronic Peripherals				NA	NA	0.00					NA	NA
	Hard-Copy Devices				NA	NA	0.00					NA	NA
	Mixed Electronics				NA	NA	0.00	NA				NA	NA

# U.S. EPA Policy and Program Impact Estimator

## Policy and Program Impact Estimator: A Materials Recovery Greenhouse Gas (GHG) Calculator for Communities

On this page:

- [About the Calculator](#)
- [Download the Calculator](#)
- [How to Use the Calculator](#)

### About the Calculator

EPA developed a calculator that expands the Waste Reduction Model (WARM) framework to include a community's existing waste stream and policy and program options. This Excel spreadsheet calculator is designed to help municipalities, counties, and tribes estimate reductions in life cycle GHGs from implementing new or expanded solid waste policies and

The screenshot displays the 'Policy & Program Impact Estimator' interface, titled 'A Materials Recovery GHG Calculator for Communities'. It outlines the purpose of the calculator and provides step-by-step instructions for use.

**Purpose of this Calculator**  
Generate a customized estimate for tons diverted and lifecycle greenhouse gases reduced over a 10-year period from implementing new or expanded waste management policies & programs in your community or county.

**Step 1:** Enter data or use defaults for tonnage & composition of what's currently landfilled, combusted, recycled, and composted as a baseline.

**Step 2:** Consider which policies & programs you'd like to explore and enter or select defaults for projected implementation effects\*

Sector	Policy/Program (new or improved)
Single-Family Homes	Pay As You Throw, Other Recycling Initiatives, Curbside Food Scraps Collection
Multi-Family Homes	Recycling
Commercial	Recycling & Composting (various options)
Construction & Demolition	Construction & Demolition Ordinance

**About Lifecycle GHG Emissions**  
This tool estimates GHG emission reductions using factors developed for EPA's Waste Reduction Model (WARM) at <http://www.epa.gov/WARM> (Version 14). As a result, all estimates in this tool represent total GHG emissions associated with each stage of the product's life, including:  
• raw material acquisition,  
• product manufacture and transport, and  
• end-of-life waste management.  
Emissions associated with using the product are not included since these emissions vary by product.

# Zero Waste Lifestyles



**Zero Waste USA**

*Inspiring Communities to  
Embrace and Achieve Zero Waste*



# Chris Burger

## Sierra Club Zero Waste Team



**Last time we took our trash to the landfill - 1992**

# Bea Johnson, Zero Waste Home

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



# Dominique Drakeford, Being Black And Zero Waste-ish, [www.sustainablebk.co](http://www.sustainablebk.co)





# Elena Aurora and Layel Camargo, Woke N Wasteless, [wokenwasteless.com](http://wokenwasteless.com)



# Lauren Singer, Trash is for Tossers

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





# How Low Can You Go? - A

## How Low Can You Go? Zero Waste At Home, School, Work & On The Go

Check off actions you already practice. Draw a line through the impossible and circle a few you are willing to take on. Set a goal, make a plan and go for it! Don't expect perfection and don't give-up. Revisit list again in a few weeks and pick a few more. For background information and links visit [www.zerowasteusa.org](http://www.zerowasteusa.org). Prepared by Zero Waste Action.

### 1. AT HOME

#### REDUCE, REFUSE, REUSE AND RECYCLE

- ☐ Study your city's waste reduction, recycling and compost materials carefully. Avoid wishful recycling!
- ☐ Repair rather than replace.
- ☐ Offer unwanted items to friends/neighbors.
- ☐ Donate only items accepted by donation program.
- ☐ Return dry cleaners hangers, florist vases & refillables.
- ☐ Borrow books and movies from the library and friends.
- ☐ Stop unsolicited mail and catalogs.

#### LIVE GREEN

- ☐ Buy less, use it up, wear it out, make it do, do without.
- ☐ Choose reusables, avoid disposables - straws, bags, containers, packaging and household products.
- ☐ Look for recycled content and locally made goods.
- ☐ Buy in bulk; avoid overly packaged goods.
- ☐ Share, borrow or rent party equipment and tools.
- ☐ Select natural fabrics; consider used clothing.
- ☐ Instead of sugary sodas, flavor water w/ lemon or mint.
- ☐ Use DIY non-toxic cleaning supplies - i.e., vinegar, baking soda, castile soap, borax and essential oils.
- ☐ Avoid lining waste baskets with plastic; try paper.

#### WASTE LESS FOOD

- ☐ Plan meals, use a list, eat at home, cook fresh.
- ☐ Before shopping, inventory refrigerator and pantry.
- ☐ Grow your own - sprouts, veggies, herbs, flowers.
- ☐ Place fresh stemmed items in shallow water in frig.
- ☐ Crisp limp vegetables in ice water or make soup.
- ☐ Don't store bananas w/ apples, avocados, melons.
- ☐ Keep potatoes in a cool, dark place away from onions. Add an apple to avoid early sprouting.
- ☐ Freeze veggie scraps for stock and surplus fruit for smoothies.
- ☐ Got surplus? Can, dehydrate or keep in cool dark spot.
- ☐ Donate extras to gleaners, food banks and soup kitchens. Learn about local food system; teach others.

#### SEPARATE ORGANICS

- ☐ Place yard debris and, if allowed, food scraps, food soiled paper towels and napkins, in compost.
- ☐ Remove twist ties and plastic produce labels.
- ☐ Line food scraps container with newspaper. Keep container in frig. Freeze big items until collection day.
- ☐ Set up a your own home composting system. Learn the rules in advance. Consider worms - may be less work.

(continued on flip side)





# How Low Can You Go? - B

## How Low Can You Go? Zero Waste At Home, School, Work & On The Go

Check off actions you already practice. Draw a line through the impossible and circle a few you are willing to take on. Set a goal, make a plan and go for it! Don't expect perfection and don't give-up. Revisit list again in a few weeks and pick a few more. For background information and links visit [www.zerowasteusa.org](http://www.zerowasteusa.org). Prepared by Zero Waste Action.

### 1. AT HOME

#### SELF/FAMILY CARE

- ☐ Make your own masks, scrubs, moisturizers, make-up.
- ☐ Use handkerchiefs and cotton swabs with paper sticks.
- ☐ Buy quality products in reusable nontoxic containers.
- ☐ Experiment with bar shampoo, bamboo toothbrushes...
- ☐ Try reusable towels, cloth diapers, menstrual products.

#### PET CARE

- ☐ Pick up pet waste with used plastic bags. Try cutting the sealed edge of air filled packing bags.
- ☐ Use a natural cat litter - pine pellets, wheat, paper...
- ☐ Fleas? Try diatomaceous earth after a bath.
- ☐ DIY natural pet food and treats.

### 2. AT SCHOOL & WORK

- ☐ Form a Green Team with clear mission and tasks.
- ☐ Include food service and custodial staff in your efforts.
- ☐ Monitor bins; fine tune bin size and pick-up frequency.
- ☐ Install trash and recycling stations with clear signage.
- ☐ Train all involved to reduce, refuse, reuse, recycle, rot.
- ☐ Organize a book, magazine and music exchange.
- ☐ Create a reuse closet for office supplies and tools.

- ☐ Repair electronics and refill toner cartridges.
- ☐ Utilize reusable transport packaging.
- ☐ Hold Zero Waste meeting and events.
- ☐ Review the How Low Can You Go Business Checklist.

### 3. ON THE GO

- ☐ Create a system to manage your to-go reusables - handkerchief, napkin, cup, utensils, to-go-containers.
- ☐ Pack waste-free meals and snacks.
- ☐ Use a thermos for hot or cold food.
- ☐ Carry a bag to pick-up trash.
- ☐ No trash or recycling bins? Haul your trash home.

#### AT EVENTS, BEACH AND PARK

- ☐ Bring reusable, recyclable picnic supplies.
- ☐ Plan for leftovers; bring extra containers.
- ☐ Leave no trace; pick up after yourself, kids and pets.
- ☐ Do not release balloons or fishing line.

#### TRAVELING

- ☐ Pack just what you need. Try e-books and e-music.
- ☐ Bring your own toiletries, mesh bags and headphones.
- ☐ Flying? Bring an empty water bottle and snacks.

(continued on flip side)



# Thank You

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*Inspiring Communities*