



THE UNIVERSITY OF  
**TENNESSEE**  
KNOXVILLE

# **Zero Waste Commitment**

**January 2020**

Prepared by the Committee on the Campus Environment  
and the Office of Sustainability for Chancellor Donde Plowman

## Zero Waste Commitment

The Vol Vision Strategic Plan indicates that the University of Tennessee, Knoxville is committed to “embracing the responsible stewardship of resources.” In furtherance of that stewardship, the university will strive to achieve Zero Waste\*, starting with the commitment to divert 50% of its waste by 2030. Our success will be built upon the following four pillars:

- 1) Expand Infrastructure & Diversion Strategies
- 2) Enhance Communication & Training
- 3) Emphasize Reuse, Repair & Redistribution
- 4) Campus Community Support

\*UT strives to reduce and divert as much waste as possible. The industry definition of Zero Waste is 90% diversion<sup>1</sup>. Although 90% is not “zero” waste, UT aspires to reduce total waste generated and divert remaining waste from landfills and incinerators.

This Zero Waste Commitment is a living document that will be regularly modified and updated to reflect changes in university funding, priorities, and available technologies. Still, UT will remain committed to fulfilling the goals laid out herein and continue its path towards responsible resource stewardship.

<sup>1</sup><http://zwia.org/standards/zw-business-principles/>

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## PLAN Summary

The Post-Landfill Action Network (PLAN) is a national non-profit that cultivates, educates, and inspires the student-led Zero Waste movement. The organization's Atlas program is an assessment framework to support universities and colleges in creating zero waste strategic plans.

Upon completing a detailed assessment of campus policies, infrastructure, and communication regarding waste, PLAN provided UT with a list of program recommendations and a baseline Zero Waste score. These results informed a series of strategic planning sessions that set the foundation for this commitment.

### **Funding:**

The Student Environmental Initiatives Facilities Fee approved \$5,000 to pay PLAN staff for the following:

- \$1,750 for an assessment with a formal report back on existing operations, identified gaps, and recommendations to address them
- \$3,250 for Strategic Plan Creation— in-person planning support by PLAN staff with key stakeholders on campus (likely recognized as a Zero Waste Task Force) to help create a plan for reaching Zero Waste based on recommendations in the assessment

### **Duration of Project:**

The assessment and plan creation started in September 2018, and was completed in March 2019 after two visits to campus, meetings with stakeholders, and several conference calls.

### **Benefits:**

The goal of a Zero Waste Plan is to help the university increase sustainability efforts on campus. Sustainability equates to efficiency, and greater efficiency results in greater cost savings. It is in the university's financial interest to become as efficient (sustainable) as possible. A Zero Waste Plan—and eventually a Zero Waste Policy—will allow the university to incorporate sustainability considerations into all of its processes, from sourcing and purchasing to infrastructure and disposal.

The short-term success of this project will be demonstrated by the completion of a detailed Zero Waste Plan with concrete steps to decrease waste on campus and divert more of that waste from the landfill. Long-term success will manifest in lower yearly totals of waste sent to the landfill from campus and reduced waste hauling fees overall.

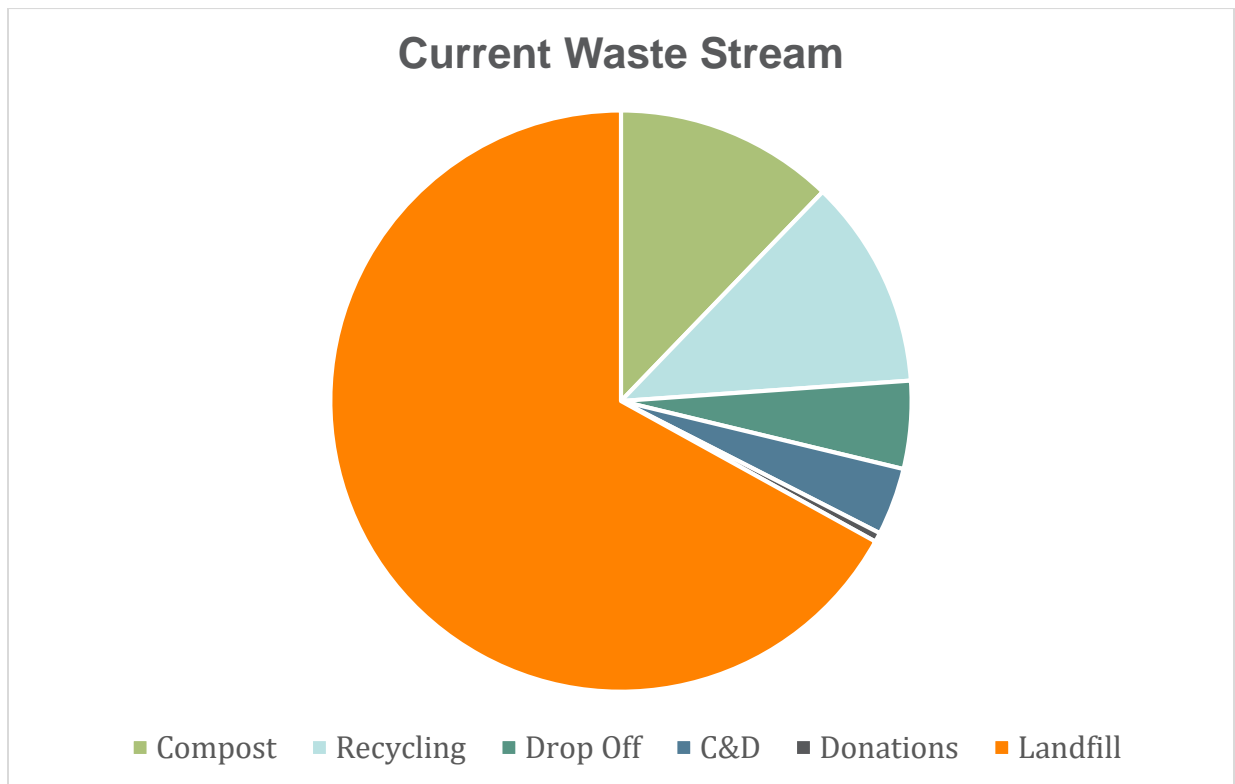
## Where Have We Been?

<b>Fiscal Year</b>	<b>Regular Landfill Tons</b>	<b>Tons Diverted</b>	<b>% Diverted from Regular Landfill</b>
2007	9161.9	913.36	9.07%
2008	7529.81	1087.19	12.62%
2009	8292.21	1144.29	12.13%
2010	8505.48	1224.68	12.59%
2011	9042.03	1503.64	14.26%
2012	9407.46	2839.04	23.18%
2013	8872.67	2042.33	18.71%
2014	6308.83	2776.73	30.56%
2015	6551.54	2994.11	31.37%
2016	6795.62	2798.26	29.17%
2017	7671.24	3309.85	30.14%
2018	6426.79	3176.20	33.08%

## Where Are We Now?

With our current programming approximately 33% of campus waste is diverted from landfill. Waste from FY18 was disposed of as follows:

Waste Stream	Percentage of Total Waste
On-Campus Compost Pick-Up	12.26%
On-Campus Recycling Pick-Up	11.66%
Public Recycling Drop Off (Hard-to-Recycle Material)	4.88%
Construction & Demolition Recycling (incomplete data)	3.75%
Food and Textile Donations	.52%
Landfill	66.92%
<b>Total</b>	<b>100%</b>



### Additional Efforts

- Zero Waste Gameday Recycling (currently at ~30% diversion rate over the course of the 2018 season)
- Occasional large-scale Zero Waste Events such as Picnic on the Plaza
- The Mug Project, saved as estimated 72,000 single-use plastic bottles in FY18

## What Is Currently in Progress?

- Hand Dryer Installations: expected completion date of June 2020
- My Tiny Trash Implementation: expected completion date of June 2020
- Bin and Signage Standardization: expected completion date of June 2020
- In-depth building by building waste audits: expected completion date of June 2022

## Current Waste Disposal Costs and Potential Diversion Reductions

Based on FY18 data:

<b>Fiscal Year</b>	<b>Diversion Rate Goal</b>	<b>Expected New Annual Waste Disposal Cost</b>
2018	33% (achieved)	\$356,619.29 (actual)
2030	50%	\$266,133.80
2040	70%	\$159,680.28
2050	90%	\$53,226.76

## Case Study: Austin Peay and Tickle Engineering Building

The goal of performing a waste audit is to physically analyze the composition of waste generated from a specific source. In this case, the landfill and recycling streams were collected from Austin Peay and Tickle Engineering during the below-mentioned timeframes and every discarded item was sorted based on its recyclability. The separations under “Material Found in Landfill Bins” highlight how much of the waste sent to landfill could have been diverted had it been thrown in the proper bin or, in the case of compostables and hard-to-recycle material, if the proper bin had been available. The “Material Found in Recycling Bins” represents actual material sent for recycling.

Type of Waste	Austin Peay (Pounds) 2/28-3/5/2019	Tickle Engineering (Pounds) 2/21-2/25/2019
<b>Material Found in Landfill Bins</b>		
True Landfill	45	50.6
Compostables	60	68
Standard Recyclables	30	63
Hard-To-Recycle Material	7	8
	<b>142</b>	<b>189.6</b>
<b>Material Found in Recycling Bins</b>		
Paper	78.8	67.8
Plastic/Cans	20	26.4
Cardboard	11.2	5.8
	<b>110</b>	<b>100</b>
<b>Total Waste</b>	<b>252</b>	<b>289.6</b>
<b>Current Diversion Rate: (Recycling/Total Waste)</b>	<b>110/252= 43.65%</b>	<b>100/289.6= 34.53%</b>
<b>Potential Diversion Rate: (Recycling + Compost in Landfill + Recyclables in Landfill) /Total Waste</b>	<b>207/252= 82.41%</b>	<b>239/289.6= 82.53%</b>

## What Are Other SEC Schools Doing?

University	Admin-Supported Zero Waste Goal	Unofficial/Undated Zero Waste Goal	No Zero Waste Goal
University of Alabama			<b>X</b>
University of Arkansas	<b>X</b>		
Auburn University			<b>X</b>
University of Florida		<b>X</b>	
University of Georgia		<b>X</b>	
University of Kentucky		<b>X</b>	
Louisiana State University		<b>X</b>	
Mississippi State University			<b>X</b>
University of Mississippi			<b>X</b>
University of Missouri			<b>X</b>
University of South Carolina		<b>X</b>	
<b>University of Tennessee, Knoxville</b>		<b>X</b>	
Texas A&M University	<b>X</b>		
Vanderbilt University	<b>X</b>		

- University of Arkansas' Zero Waste goal is set at rates of 50% diversion from landfill by 2021, 70% by 2027, and 90% by 2040<sup>1</sup>.
- Texas A&M University commits to a Zero Waste by 2050 goal outlined in the Sustainability Master Plan<sup>2</sup> endorsed by the University President and Chief Financial Officer.
- Vanderbilt University commits to achieving Zero Waste by 2030 in their Zero Waste Master Plan<sup>3</sup>.

<sup>1</sup><https://sustainability.uark.edu/about/zero-waste.php>

<sup>2</sup><http://sustainability.tamu.edu/Data/Sites/1/downloads/2018SMP.PDF>

<sup>3</sup><https://cdn.vanderbilt.edu/vu-wp0/wp-content/uploads/sites/69/2020/01/03105312/Zero-Waste-Master-Plan-12.18.19-Accessible-Version.pdf>



## Pillars/Focus Areas for Future UT Projects

Each potential project has been categorized under one of four pillars outlined in the commitment on page 1. The pillars act as an organizational structure for the commitment and will provide a simple breakdown of the commitment's overarching themes for ease of communication in outreach materials.

### Expand Infrastructure for Diversion Strategies (Compost & Recycling)

- Food recovery institutionalization
- Compost program expansion
- Construction & Demolition waste tracking and management
- Full-time Steam Plant Hill bulky waste transfer station operator
- Waste audits & characterization studies
  - Transition dumpsters to trash compactors when possible
  - Require dumpster weight per location in next waste contract
  - Diversion rate "heat" map
- Hard-to-recycle material expansion
  - Lab/greenhouse/non-traditional classroom waste diversion
- Printing minimization
  - Transition to email receipts instead of print (some groups are already doing this)
  - Default double-sided printing on all UT computers
  - Require syllabi and non-essential class materials to be digital only when possible
  - Electronic record retention
  - Electronic event programs and invitations when possible
- Zero Waste Tailgate expansion
  - Glass bottle ban
  - Create a simple to follow guide for the public to adhere to while on campus
  - Require compostable items in All-Occasions areas (Circle Park, Vol Village)

### Enhance Communication & Training

- Food waste awareness campaign
  - Weigh the Waste/ "Take only what you can eat" campaign
  - Full cost accounting on menus: food waste, order choices, and greenhouse gas emissions
- Zero Waste Event Standardization
  - Event above a certain size/specific events MUST be zero waste, and eventually every event
  - Institutionalize food recovery process for catering/events
  - Green Event Certification Program
- Stakeholder Training Programs
  - Service Personnel Training Program
  - Building Representative Training Program
  - IT Personnel Training Program
  - New Student and Employee Orientation
  - Ambassadors: Environmental chairs within student organizations, athletic teams, Greek life, residence halls, academic departments
- Phased Environmentally-Preferable Purchasing Policy
  - Remove single-use disposables
  - Incorporate reusables

## **Emphasize Reuse, Repair & Redistribution**

- Expand Mug Project model to other serviceware
  - To-go container program across entire campus (a few dining facilities have offered this)
  - Bring Your Own Everything discounts
  - Train POD Markets to ask before distributing plastic bags with the expectation of banning plastic bags entirely at some future date
- Reusable Office Supply Exchange (ROSE)
  - Protocol for inter-departmental sharing before Surplus (from paperclips to cabinets)
  - Circulate ROSE items through campus mail for maximum ease of adoption
- Surplus expansion and communication
  - Rebates for departments on the items sent to Surplus
  - Requiring/incentivizing staff to purchase supplies from Surplus
- Maker/Repair Space for all of campus—use TCE's Innovation & Collaboration Studio as a base

## **Campus Community Support**

- Food Share Kitchen
- Lending Library
- Permanent Free Store
  - Standardize Lost & Found Procedures to recoup items
  - Bike impoundments
  - Graduation Gown Collection and Distribution
  - Move-Out Collection Recirculation
- Available Material Notification System
  - Surplus items
  - Food
  - ROSE

# The Next 10 Years

Pillar	Projects	2020	2021	2022	2023	2024
Expand Infrastructure For Diversion Strategies	Hand Dryer Installs	Progress bar	Progress bar			
	My Tiny Trash	Progress bar	Progress bar			
	Bin and Signage Standardization	Progress bar	Progress bar			
	Waste Audits & Characterizations	Progress bar	Progress bar			
	Food Recovery Institutionalization	Progress bar				
	FT Steam Plant Hill Operator		Progress bar			
	Compost Expansion			Progress bar		
	Hard to Recycle Material Expansion				Progress bar	
	C&D Waste Tracking and Management					Progress bar
	Food Waste Awareness Campaign	Progress bar	Progress bar			
Enhance Communication and Training	Stakeholder Training Programs: Phase I	Progress bar	Progress bar			
	Zero Waste Event Standardization		Progress bar			
	Phased Environmentally-Preferable Purchasing Policy	Progress bar	Progress bar			
	Expand Mug Project Model to Other Serviceware	Progress bar	Progress bar			
	Surplus Expansion & Communication			Progress bar		
Emphasize Repair, Reuse, and Redistribution	Permanent Free Store	Progress bar				
	Available Material Notification System				Progress bar	
Campus Community Support					Progress bar	

Pillar	Projects	2025	2026	2027	2028	2029
Expand Infrastructure For Diversion Strategies	Compost Expansion	██████████	██████████	██████████	██████████	██████████
	Hard to Recycle Material Expansion	██████████	██████████	██████████	██████████	██████████
	C&D Waste Tracking and Management	██████████	██████████	██████████	██████████	██████████
	Printing Minimization	██████████	██████████	██████████	██████████	██████████
	Zero Waste Tailgate Expansion	██████████	██████████	██████████	██████████	██████████
	Stakeholder Training Programs: Phase II	██████████	██████████	██████████	██████████	██████████
Enhance Communication and Training	Maker/Repair Space	██████████	██████████	██████████	██████████	██████████
	Reusable Office Supply Exchange	██████████	██████████	██████████	██████████	██████████
Emphasize Repair, Reuse, and Redistribution	Food Share Kitchen	██████████	██████████	██████████	██████████	██████████
	Lending Library	██████████	██████████	██████████	██████████	██████████
Campus Community Support	Available Material Notification System	██████████	██████████	██████████	██████████	██████████

# Current Challenges to Achieving Zero Waste and Where Help Is Needed

## Finances:

- Propose combining the UT Recycling budget with the University's waste budget
  - Recoup cost-savings from reduced waste/tipping fees to implement new programs or bolster existing programs that will bring further reduction and cost-savings
  - Since 2012 when UT Recycling took over management of the waste hauling contract, changes made to dumpster scheduling save \$196,483.45 annually, currently absorbed back into the university budget

## Policy Opportunities:

- Require events of a certain size (ex: 200+ attendees) to be zero waste
- Remove single-use disposables (plastics and non-recyclables/non-compostables)
- Implement a glass bottle ban on football game days
- Amend state law to enable surplus to sell directly to students/campus below certain dollar value or before bidding online
- Enforce printing minimization policies:
  - Transition to email receipts instead of print
  - Default double-sided printing on all UT computers
  - Require electronic syllabi and non-essential class materials
  - Electronic record retention
  - Electronic event programs and invitations
- Standardizing Lost & Found procedures, bike impoundment procedures to direct unclaimed items to the Free Store

## Infrastructure:

- Incorporate a notification system for available food and goods into existing campus apps
- Approve funding for a more robust compost pick-up system and full-time driver
- Designate a space and funding for a Food Share Kitchen for students
- Designate a permanent location for the Free Store

## **Interviewees and Strategic Planning Group Members:**

Abigail Brumfield, Dean of Students Office  
Adam Klibisz, Class of 2021  
April Case, Environmental Health and Safety  
Blake Reagan, Purchasing  
Brian Ranger, Laboratory Safety Services  
Carolyn Brown, AmeriCorps Member, Office of Sustainability  
Chris Weddig, McClung Museum  
Dave Levins, Sports and Entertainment, Aramark  
Don Conard, Clarence Brown Theater  
Emily Fenichel, Vol Dining  
Jason Fogarty, Clarence Brown Theater  
Jeff Wattenbarger, Warehousing and Surplus Property  
Katy Locke, RecSports  
Leah McCord, AmeriCorps Member, Grow Lab/Office of Sustainability  
Mary Leslie Patterson, Vol Dining  
Mike Rotella, Environmental Health and Safety  
Mike West, University Housing  
Payton Myers, Class of 2020  
Preston Jacobsen, Energy Management  
Tim Price, University Printing and Mail  
Trey Knight, UT Outdoor Pursuits  
Tyger Glauser, Special Events  
Will Shavers, Class of 2019  
Zoë Norton, Class of 2020

## **Recognitions:**

Author: Annalisa Tarizzo, AmeriCorps Member, Office of Sustainability  
Jay Price, Sustainability Manager, Office of Sustainability  
Meghann Cranford, Post-Landfill Action Network  
Christopher Kane, Post-Landfill Action Network  
Emma Heins, Class of 2020  
Kendall Wimberley, Class of 2020  
Simon Jolly, Class of 2022  
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Student Environmental Initiatives Committee  
Environment and Sustainability Committee of the Student Government Association  
Students Promoting Environmental Action in Knoxville (SPEAK)