



ZERO WASTE AT APPALACHIAN SRAPPA 2018

Jennifer Maxwell

Sustainability Program Manager

Office of Sustainability



Why Zero Waste?



Reduce the university's impact on the environment

Increase awareness of personal waste stream

Reduce unnecessary and wasteful purchasing

Increase recycling revenues while reducing landfill fees

Increase effectiveness of waste handling and housekeeping processes

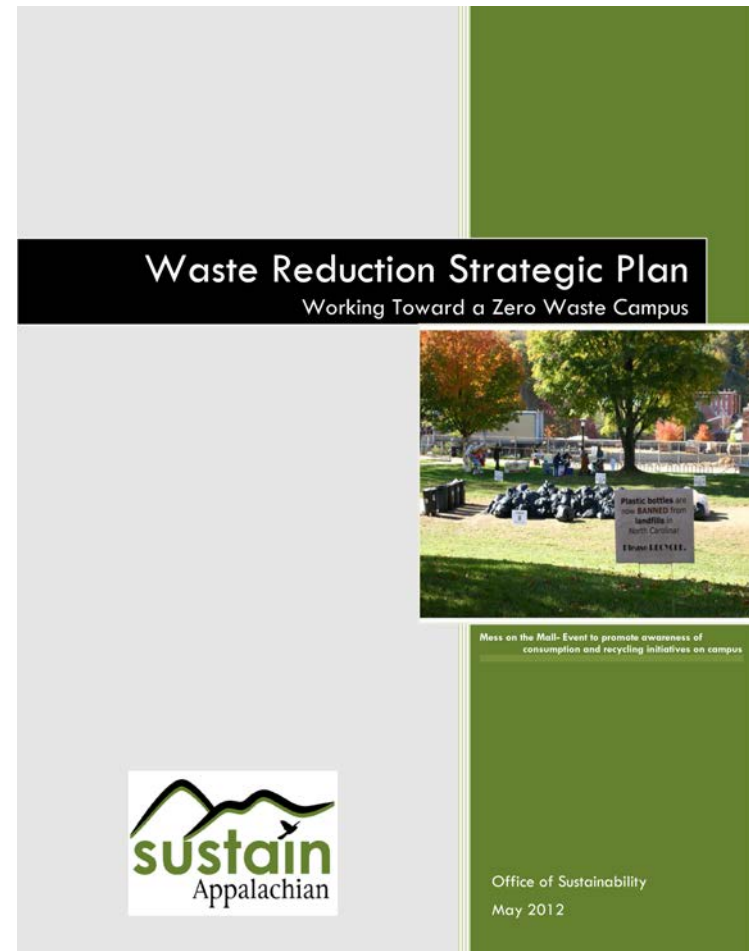
Educate our students and community members in environmental stewardship





What's The Plan

- *Policy*- The UNC System Sustainability Policy- 600.6.1
- *Waste Reduction Strategic Plan*- guiding document
- *Office of Sustainability*- guides the process





Waste Audit

- Contracted with Kessler Consulting, Inc.
- Solid Waste and Hazardous Waste
- 35 buildings- all types represented
- 2 weeks and 2-24 hour samples
- Benchmark of where we are- 43% diversion currently
- Identify opportunities for growth



- [illegible]



Mini-Bin Program



- Faculty and staff empty their own containers
- Centralized collection sites
- Trashcans removed from classrooms as well (not labs)
- Rollout over semester and summer
- No more bag liners- saved 88,500 liners from landfill annually



Outside Collections

- Less is More- Reduce the amount of walkway sites
- Colocation
- Refurbishing of Containers





Messaging and Collections

MIXED RECYCLING

PLASTIC

- Bottles
- Takeout Containers and Clamshells
- Plastic Cups
- Tubs



PAPER

- Office papers
- Newspaper
- Magazines
- Paperboard



METAL

- Aluminum Cans
- Steel Cans
- Pans (with no food residue)



GLASS

- (All Colors)
- Bottles
- Jars



CARTONS



PLASTIC GROCERY BAGS and PLASTIC PACKAGING- These can be recycled in student union special recycling area or the Office of Sustainability (East Hall).

CORRUGATED CARDBOARD should be placed in the BLUE cardboard dumpsters throughout campus.

zerowaste.appstate.edu



LANDFILL/TRASH

ALL LEFTOVER FOOD

- Please COMPOST where available



SINGLE-USE ITEMS

- Disposable cups
- Drink lids
- Straws
- Plastic Utensils
- Condiment Packets
- K-Cups



PACKAGING

- Foil snack bags
- Plastic packaging and ziploc bags
- Chips and candy wrappers



NAPKINS / PAPER TOWELS



ALL STYROFOAM



zerowaste.appstate.edu



COMPOST

ALL LEFTOVER FOOD



EMPTY PIZZA BOXES



PAPER

- To-Go Boxes
- Napkins
- Paper towels
- Wax deli paper



ITEMS LABELED "COMPOSTABLE"



TEA BAGS

COFFEE FILTERS

COFFEE GROUNDS

zerowaste.appstate.edu





Compost

- Composting begins as a student project in 1999
- New facility opened in 2011- expanding capacity
- All compost reused on campus!
- Student Union collecting post consumer at all events





Compost

Screenener

Mixer/Grinder

Compost Tea Brewer





Compost



More Efficient
Collections
Better Education
Expansion

COMPOST

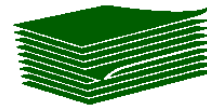
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PIZZA BOXES



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COFFEE FILTERS

COFFEE GROUNDS

TEA BAGS



zerowaste.appstate.edu





Zero Waste Stadium



- 2008- Recycle at The Rock program developed in tailgate lots
- 2014- Zero Waste stadium efforts- compost and recycling zones in stadium
- 2015- Zero Waste expansion into field house



Funding Sources

- State Operating Budget
- Foundation Funds (Sustainability Development Officer)
- Internal Grant Funds (REI)
- External Grants Funds



Sustainable Purchasing



- Contract Language-
Pouring Rights
- Identify where we are
- Develop plan for
moving forward
- Focus on waste
reduction- **REDUCE!**



Questions?

Jennifer Maxwell

Sustainability Program Manager

Appalachian State University

828-262-2667

maxwelljb@appstate.edu

www.zerowaste.appstate.edu

www.sustain.appstate.edu



Recycling Gains: Does Recycling Make More Sense Than Landfilling?

Brittany Morra
Recycling Coordinator
Clemson University



Clemson Waste Stats

*Clemson
composted over 1
million pounds of
material last
year!*



50,501 lbs

of food, cardboard, plastic, aluminum,
and glass recycled from the
Furman Game! Go Tigers!

Who has a recycling program
at their school?

Why have a recycling program?

Triple Bottom Line



<https://sustain.wisconsin.edu/sustainability/triple-bottom-line/>

The economics

Start up, maintenance, and operations costs

1. Selling recyclable commodities isn't going to make you rich
2. Recycling *can* cost less than landfilling

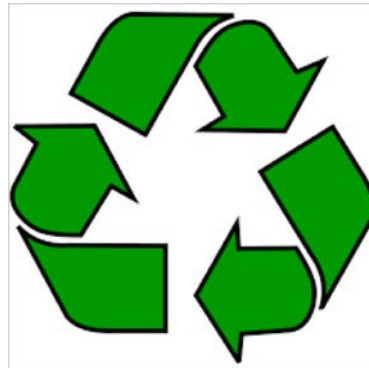


Clemson Costs

Cost per ton landfill = \$120



Cost per ton recycling = \$90



Avoided costs

\$30/ton savings x 1,281 tons = **\$38,430**

How do I get started?

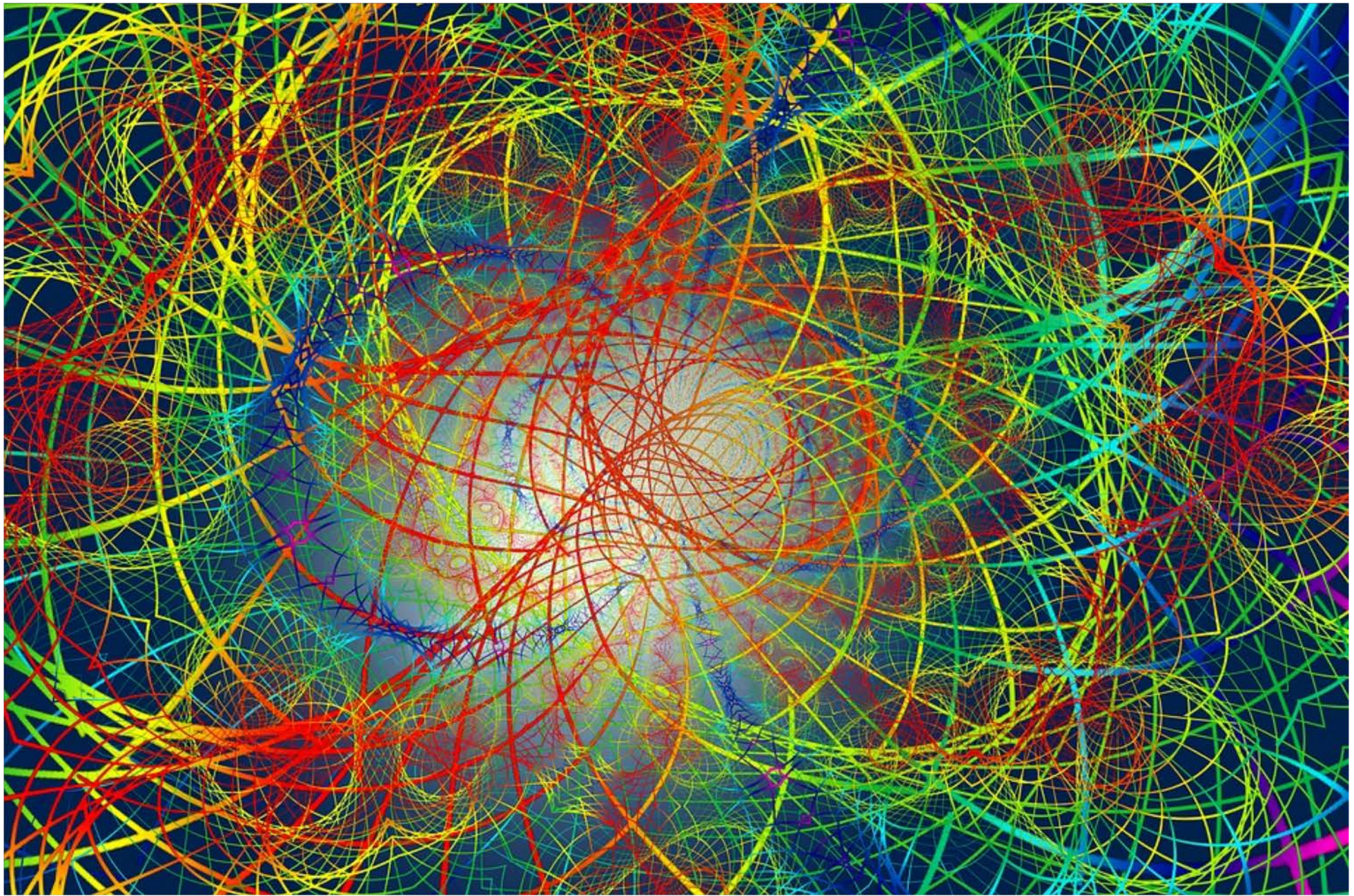
Starting budget

What does it cost you to landfill?

That's what you have to work with.

Waste Streams

Now that you know your baseline budget, understand what your waste streams are.



Clemson Waste Streams

**Construction
and
demolition
recycling**



**General post
consumer
recycling**



Compost



Landfill



Back to Basics

- Plastic - #1 and #2 bottles and jugs
- Metal - Aluminum and steel cans
- Paper - Sorted office paper
- Cardboard - clean cardboard



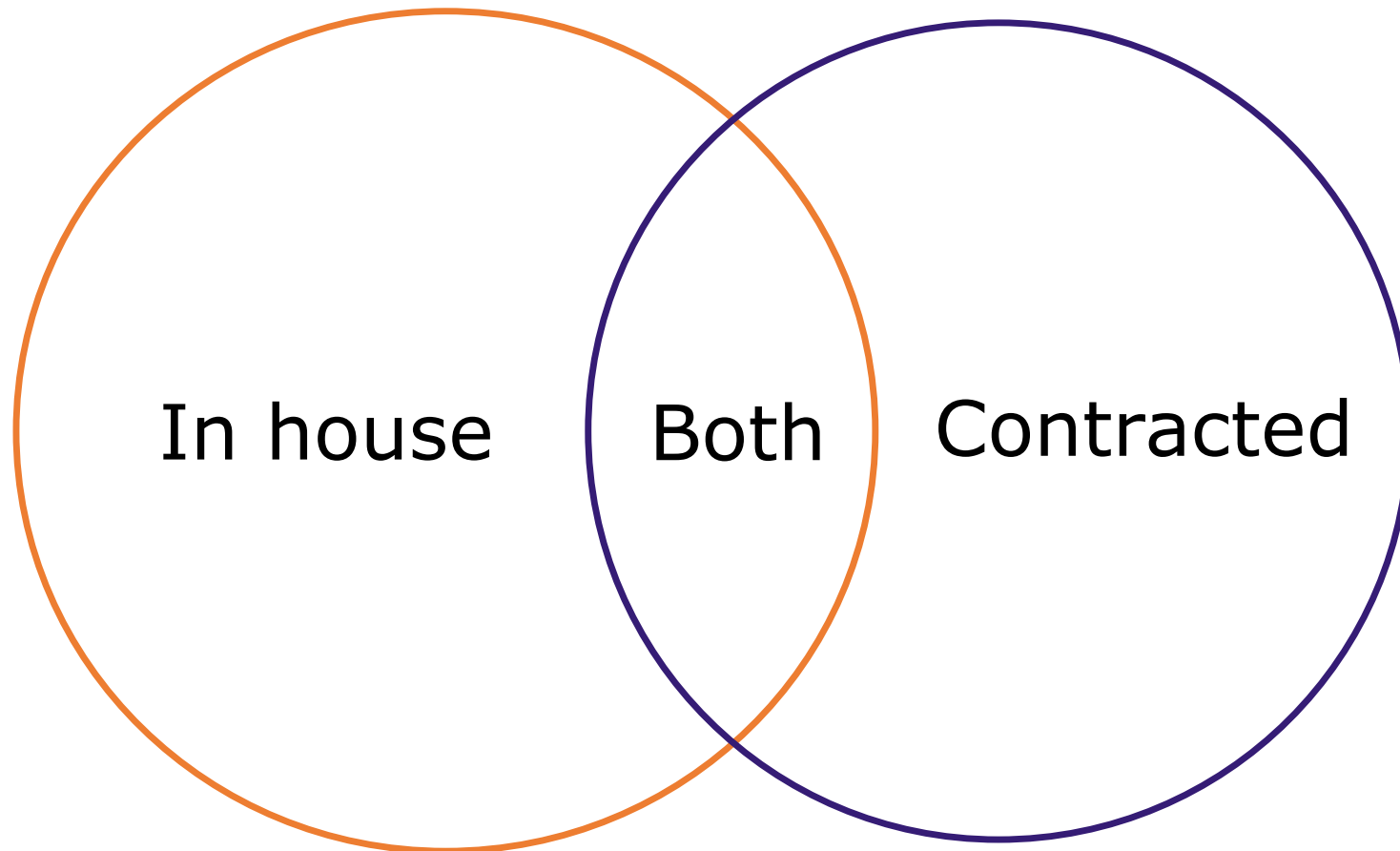
Recycling Program Anatomy

01	Bins
02	In-building collection system
03	Curbside/dumpster collection system
04	Sorting/quality control
05	Packaging
06	Connection to the market



Operations

How will you manage your program?



Recycling Program Anatomy

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Commodity values

**Commingle
\$86.40/ton**

**Plastic
\$160/ton
baled
\$117 loose**

**Aluminum
\$600/ton**

**Office paper
\$120/ton**

Funding

**Existing
departmental
funds**

**Revenue
generation**

Grants

**Charging for
service**

Best Practices

Do your research!

Resources:

- Conferences
- CRC/CRA
- CURC webinars and webinar archive (curc3r.org)
- Contact program managers of existing programs

Tips

Define your goals

Front load the sorting process

Communicate, communicate, communicate

Be consistent and clear

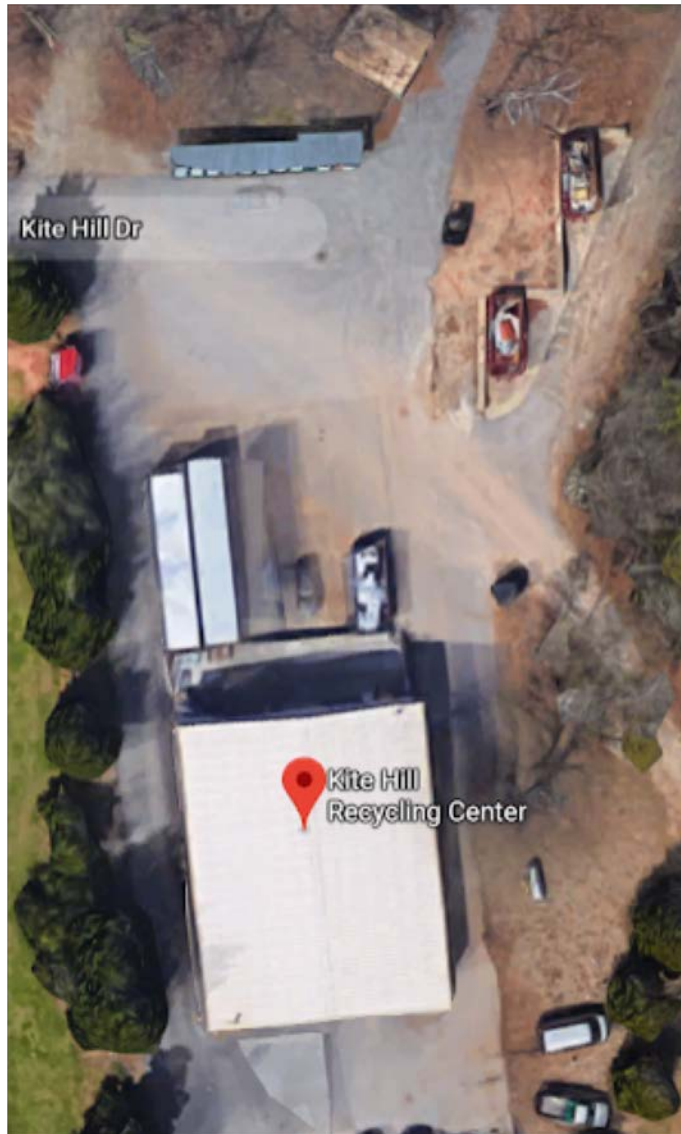
The End



For now...

Brittany Morra
bmorra@Clemson.edu

Clemson Waste Facilities



Recycling Advances at The University of Tennessee, Knoxville



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

RECYCLING

UT Recycling- Structure

In Facilities Services we:

- Collect recyclables from campus- 2 big packer trucks, 1 dump truck
- Education, Competitions
- Mug Project- bring a reusable mug anywhere on campus and SAVE \$\$!!
- Coordinate donations- food, clothing, furniture etc.
- Schedule all trash dumpster service for campus
- Compost food, paper towels etc. at our own ~2 acre compost site



Recycling = Hauling Savings

- Responsibilities for Waste AND Recycling in 2012
- 8yd dumpsters emptied on a schedule, most compactors too
- Recycling totals tracked by building, trash hauling reduced accordingly
- Eliminated convenience dumpsters
- 80% full lights on compactors, hooked up to data gathering panels to send alarm email to waste hauler, managers
- Pressure gauges on compactors can indicate same and call in for an empty
- Savings of \$185,000/yr. and counting

Standardization = Reduction

- Standardized trash and recycling containers, right size, clear liners = 400,000 lbs./yr. liner reduction
- Standardizing trash and recycling dumpsters, improved service
- Standardize soap, towels, and all custodial supplies, proportioning
- Hand dryers in major restrooms (composting paper towels didn't work!)



Standardization = Reduction

- Over 300 outdoor stand-alone trash cans
- Eliminate many, combine others, total of 100 combined, reduced stops
- New campus standard design to ALWAYS pair trash & recycling containers



My Tiny Trash

Started in Facilities Services Complex (FSC), expanding

- Each person responsible for emptying own trash and recycling = encouraging responsibility
- All recyclables can be put in one bin, separated at centralized stations
- Increases recycling
- Saves bags, labor
- FSC recycling 66%!

MY TINY TRASH
A WASTE REDUCTION INITIATIVE

THE UNIVERSITY OF TENNESSEE KNOXVILLE 

RECYCLING

Toss
non-recyclable items in Tiny Trash bin (candy wrappers, chip bags, foil, straws, etc.)

Empty
your own recyclables and Tiny Trash at least once a week.

Save
the planet.



PHONE
865.974.3480

EMAIL
RECYCLE@UTK.EDU

WEBSITE
RECYCLE.UTK.EDU



Composting

- Rolling collection carts for food waste
 - Replaced a trash compactor at largest dining hall- no cart tipper on new compactor
- 30 Collection sites for food waste/coffee grounds/paper towels/greenhouse material
- 3 dump trailers (14-yd) for manure
- Vet School saves ~\$20,000/yr in disposal costs
- Compactors emptied as needed, not weekly
- Over 1200 tons composted annually



Public Recycling Drop-off

- Open to everyone 24/7/365
- Focused on Faculty/Staff/Students



Recyclables:

- Paper*
- Aluminum Cans
- Steel Cans
- Cardboard
- Scrap Metal
- Pallets
- Plastics #1-7
- Batteries
- Electronics
- Printer Cartridges
- Glass Bottles/Jars**
- Plastic Bags/Wrap

*Items we sell

**Only recyclable here

E-Recycling with Mail Services

Small electronics, batteries, and printer cartridges:

- Campus Mail envelopes or Campus Mail pick-up spots
 - 400 stops all over campus
- Mail Services picks items up and delivers them to one location for us to pick up

Interdepartment Delivery

NOTE - CROSS OUT ENTIRE LINE WHEN RECEIVES AND RETURNED TO SENDER

DATE	DELIVER TO	DEPARTMENT	BY	DATE

Beyond Recycling

- Donations- Food, Clothing, Furniture, theater props
- Free Store
- Garden (Grow Lab)- donate garden veggies



Questions?

Contact/Follow us!

- Email: recycle@utk.edu
- Phone: 974-3480
- Web: <http://recycle.utk.edu>
- Facebook: <https://www.facebook.com/utrecycling/>
- Twitter: https://twitter.com/UT_Recycling
- Instagram: <https://www.instagram.com/utrecycling/>



2018 Campus Recycling & Waste Reduction Survey Highlights

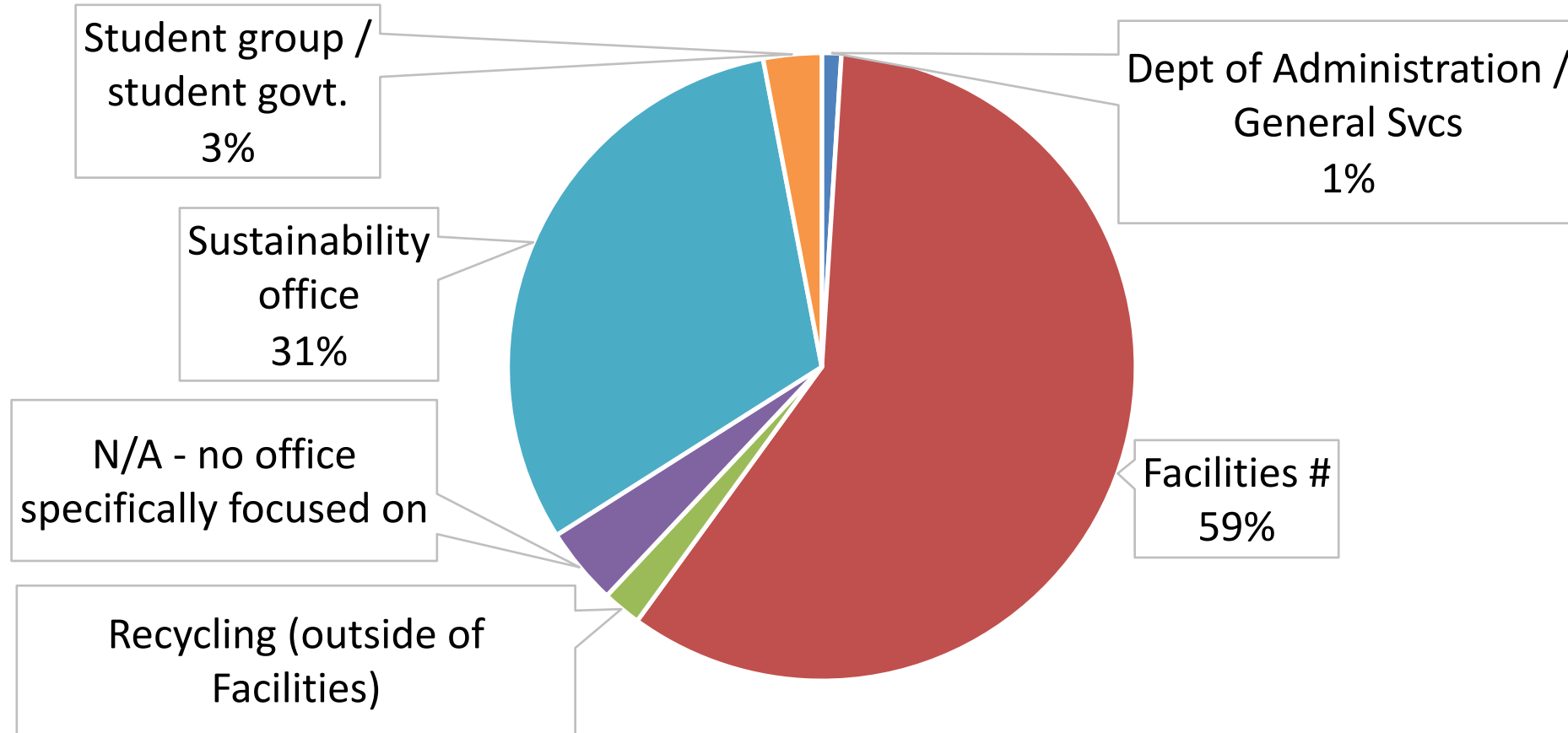
SRAPPA Conference

**Greenville, SC
October 8, 2018**

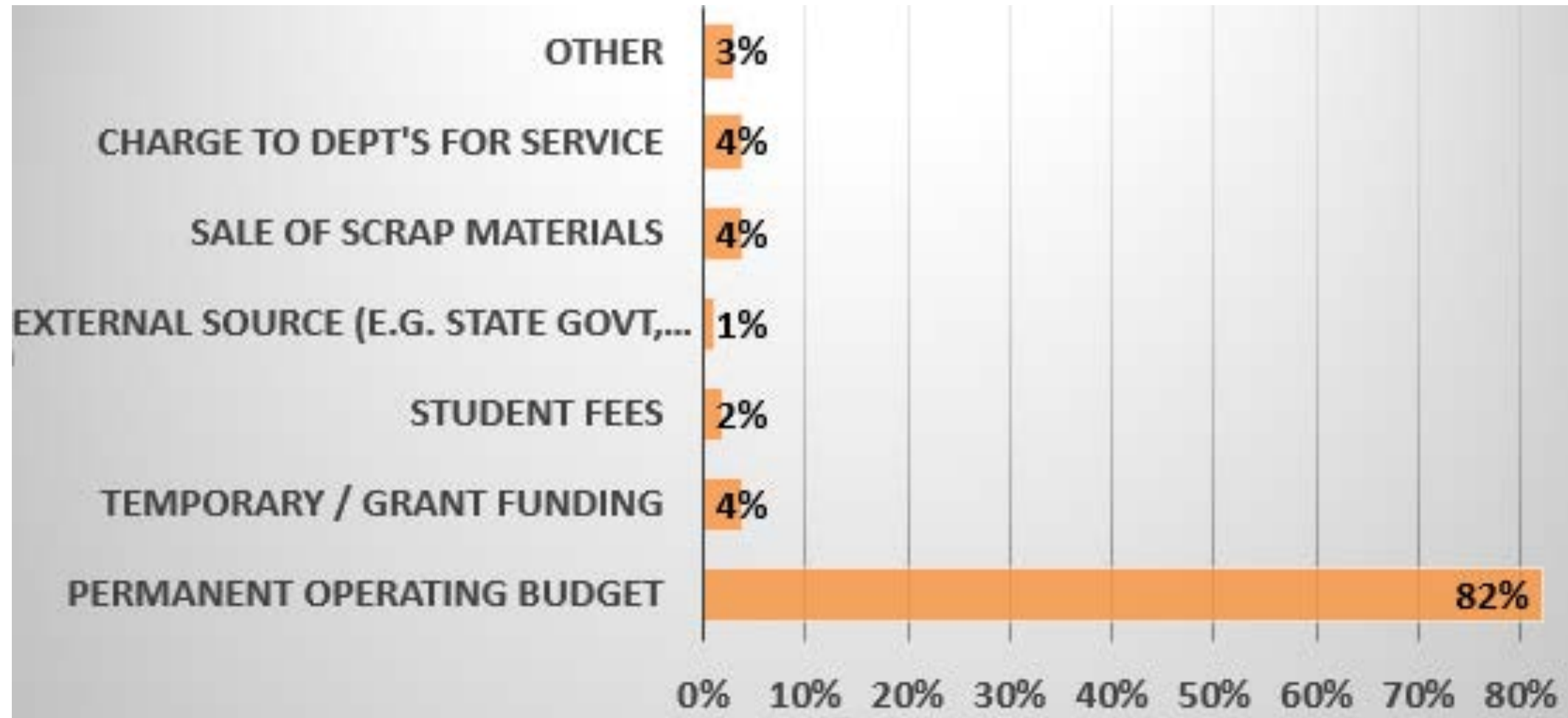
Project Overview

- College & University Recycling Coalition (CURC) is a 501c3 non-profit
- Developed survey in fall 2017
- Goal:
 - Document common practices and trends at C's & U's across US and Canada
 - Provide tool for schools to compare against peers
- 29 questions covering general recycling & waste reduction practices
- 312 institutions participated

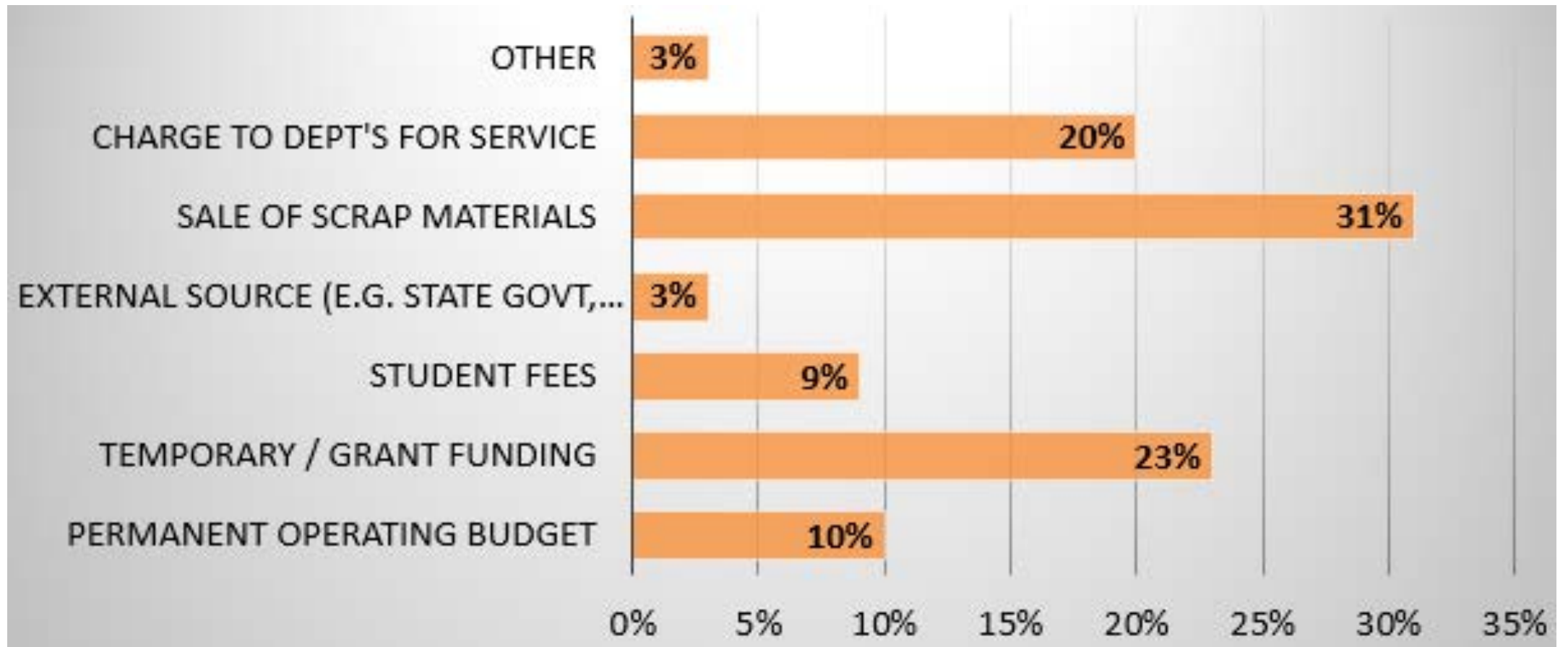
What office takes the lead on advancing your recycling/waste program?



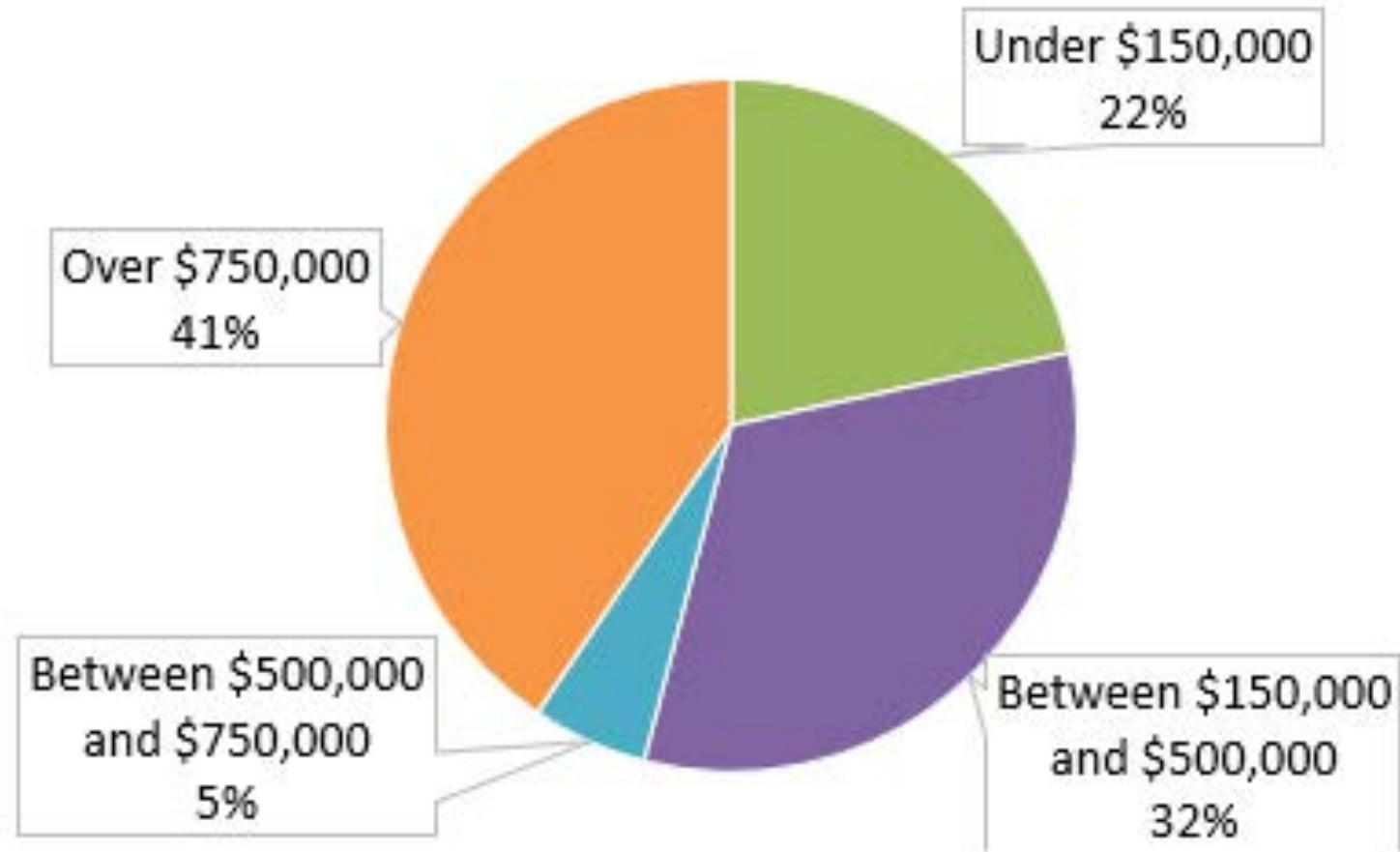
#1 Source of Funding for Recycling Program?



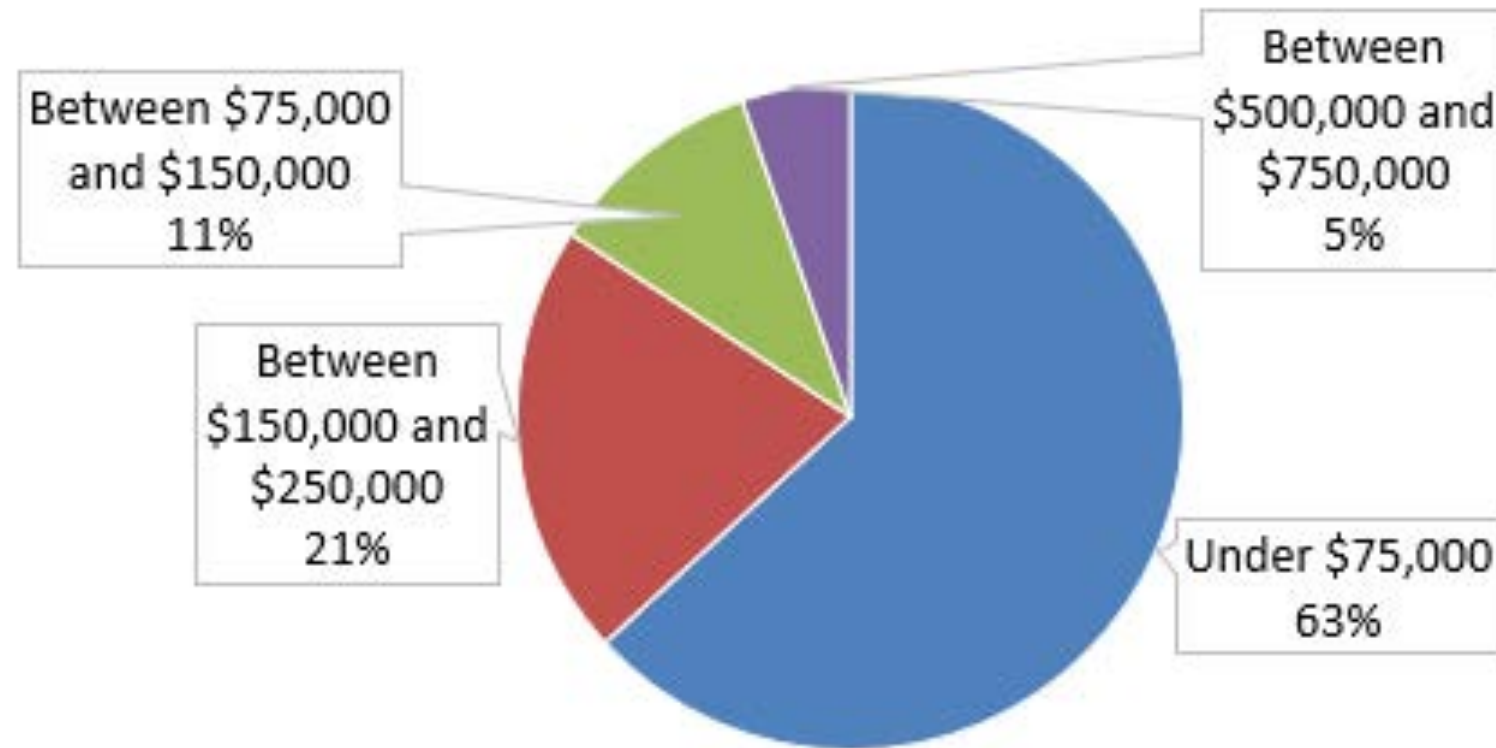
#2 Source of Funding for Recycling Program?



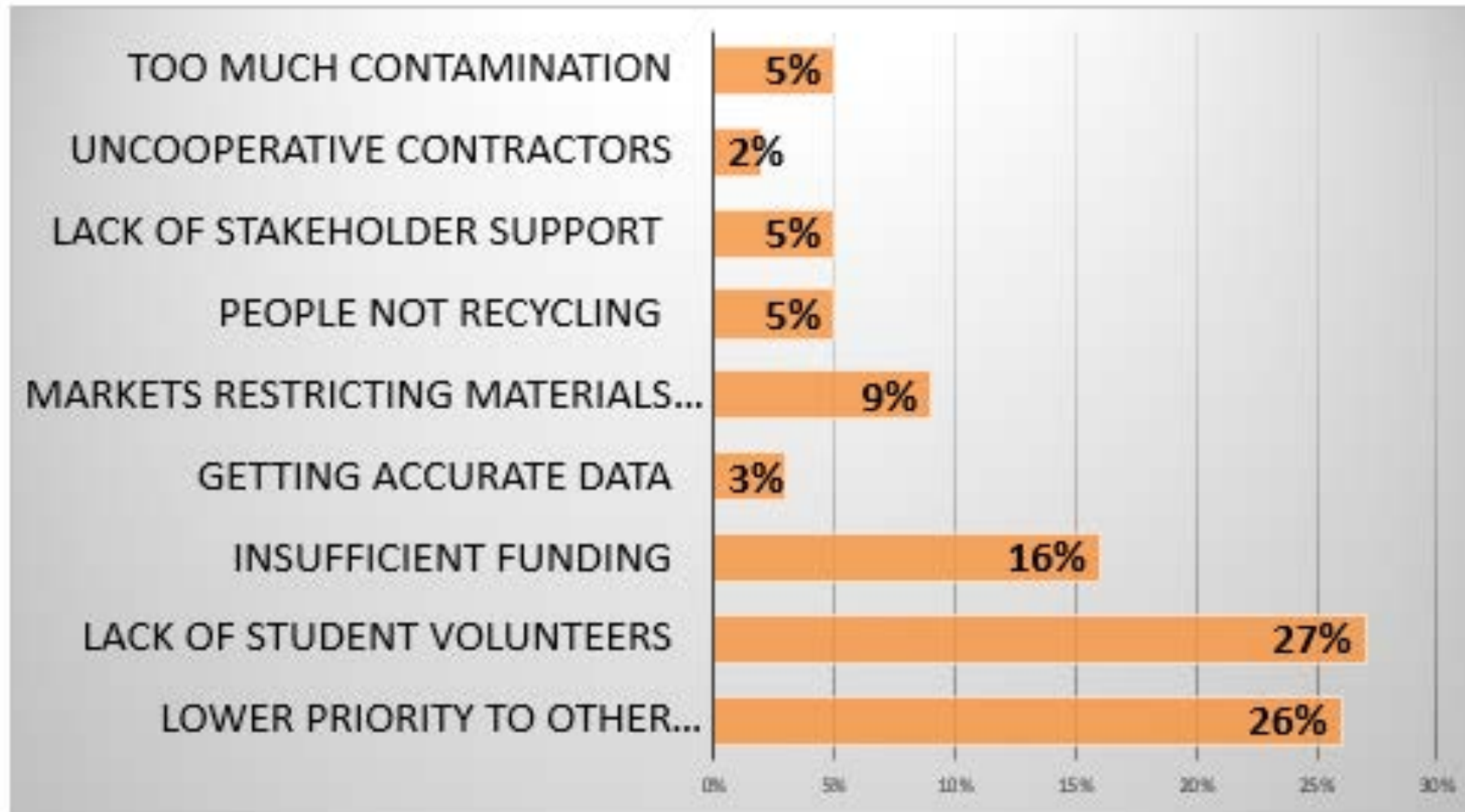
Waste & Recycling Budget: Large, 4 year



Waste & Recycling Budget: Medium, 4 year



#1 Barrier to Recycling Program



Identifying the ROI in Recycling

- Integrated approach to waste management:
 - Revenue from scrap materials
 - Avoided disposal costs
- Optimizing collection:
 - Infrastructure
 - Service
- Integrated management & budgeting

Non-Financial ROI

- ~~Waste management~~... Sustainable Materials Management
 - Looking upstream... to Procurement
 - Eliminate waste / eliminate costs
- Achieving GHG reduction / sustainability goals
 - Real GHG reduction comes from avoided consumption
- Communicates value of institution
 - 54% of applicants in 2014 Princeton Review survey cited as significant to college selection

Questions?



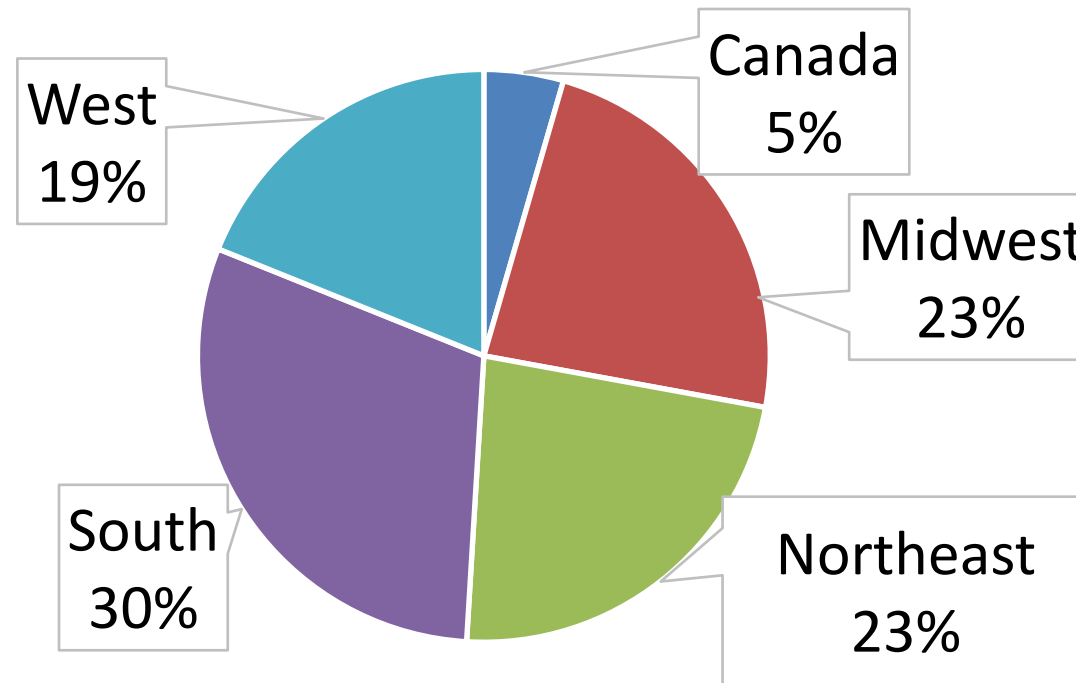
Alec Cooley

aleccooley@comcast.net

www.curc3r.org

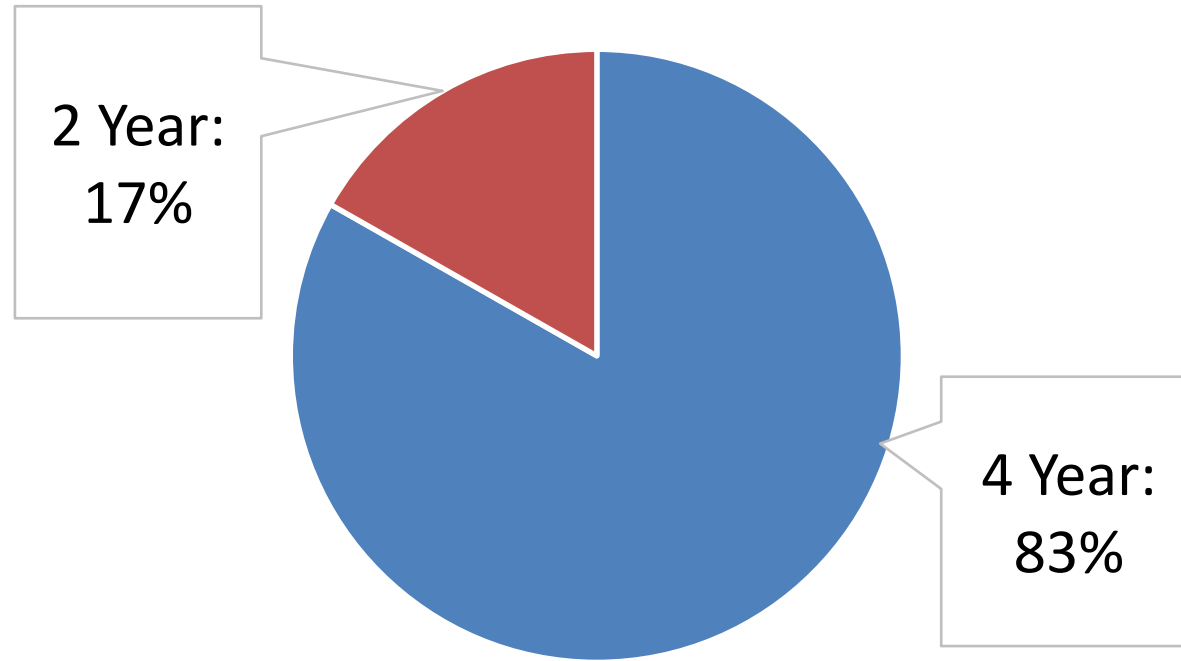
Profile of Survey Responses

Geographic Distribution



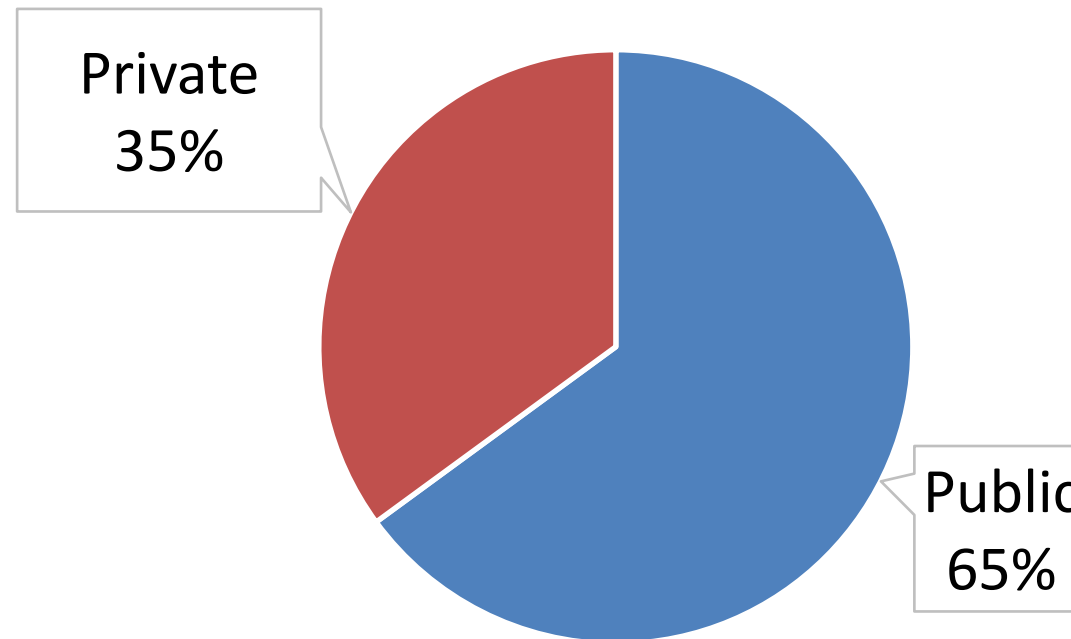
Profile of Survey Responses

Type of Institution



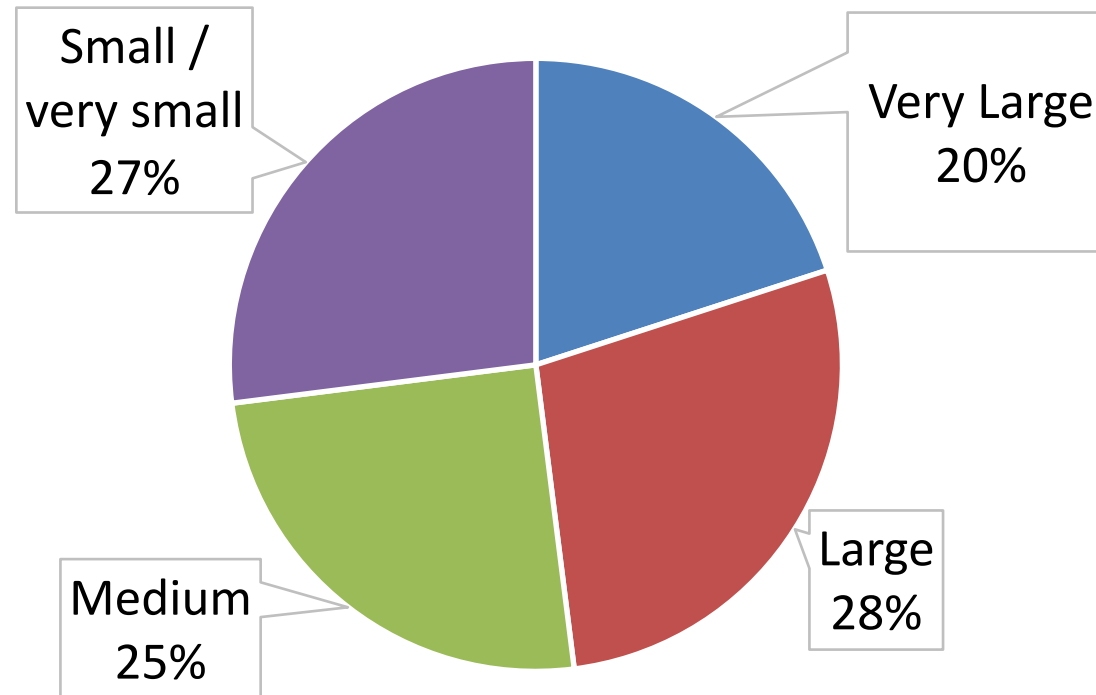
Profile of Survey Responses

Private vs Public



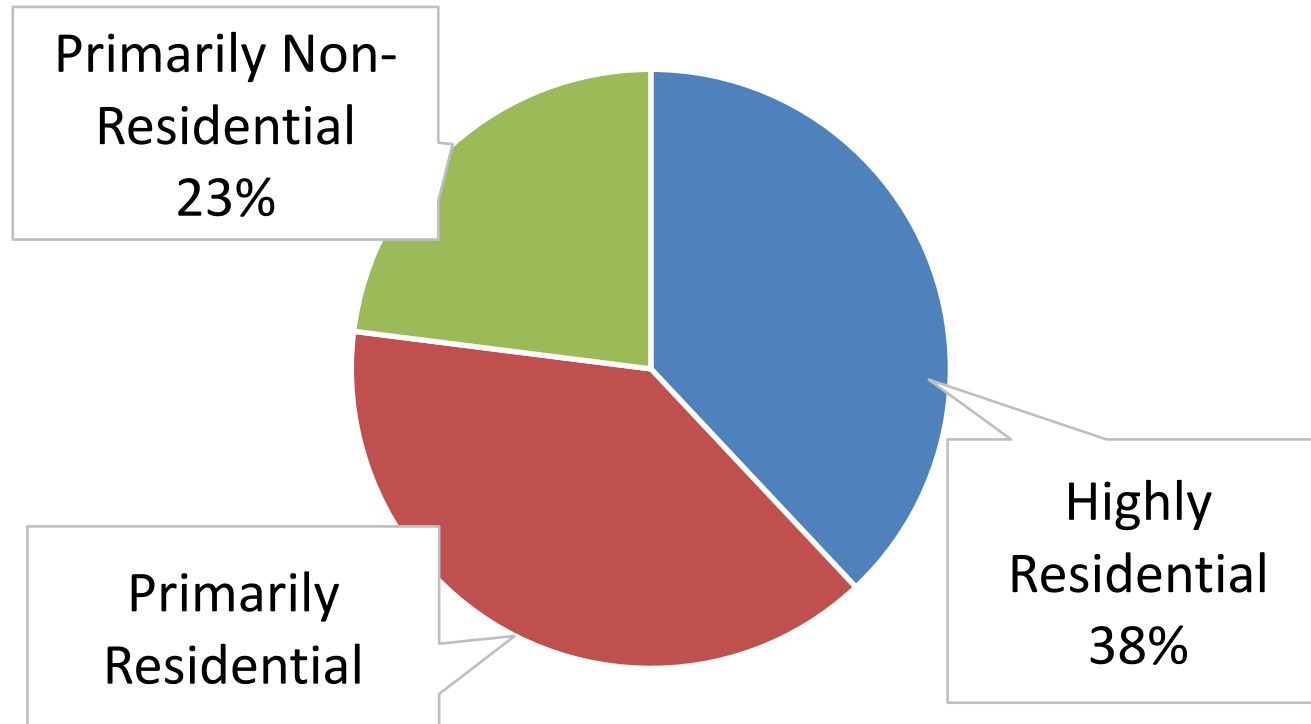
Profile of Survey Responses: 4 Year Schools

Size

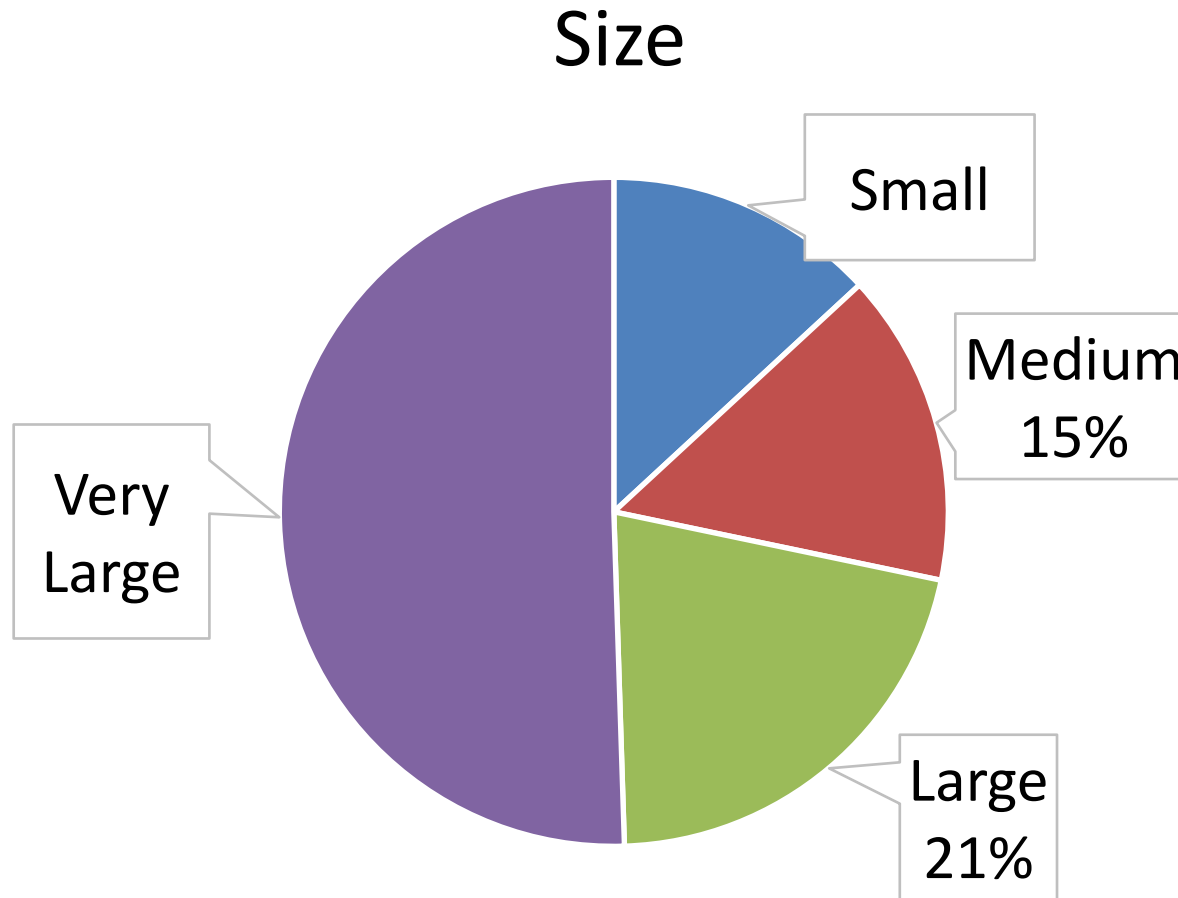


Profile of Survey Responses: 4 Year Schools

Residential vs Commuter

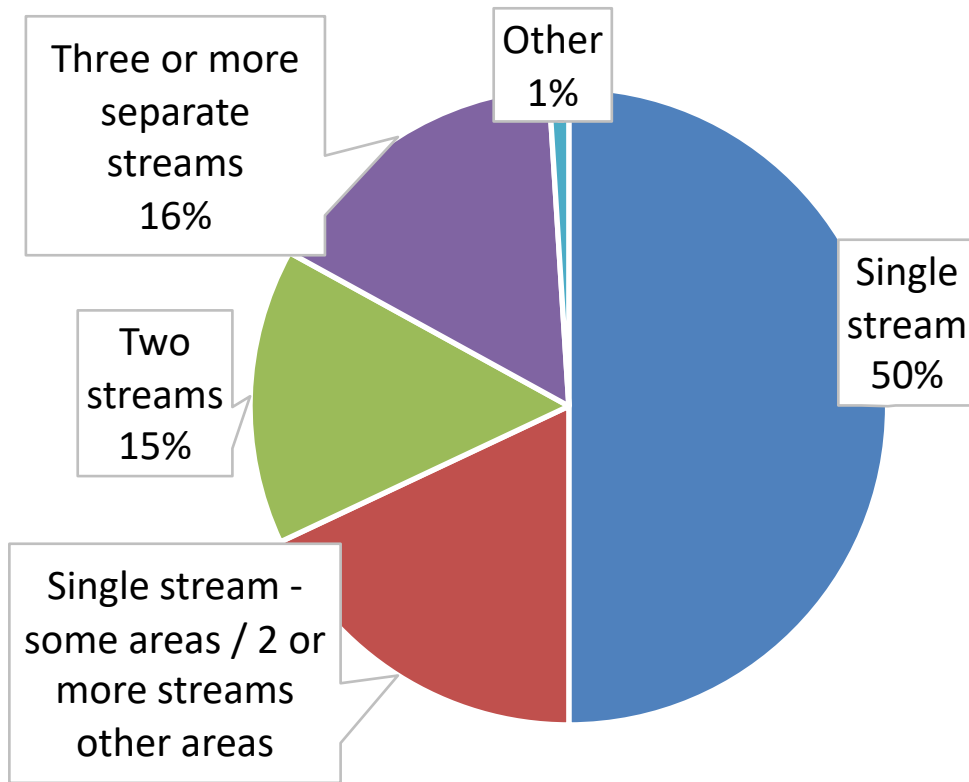


Profile of Survey Responses: 2 Year Schools

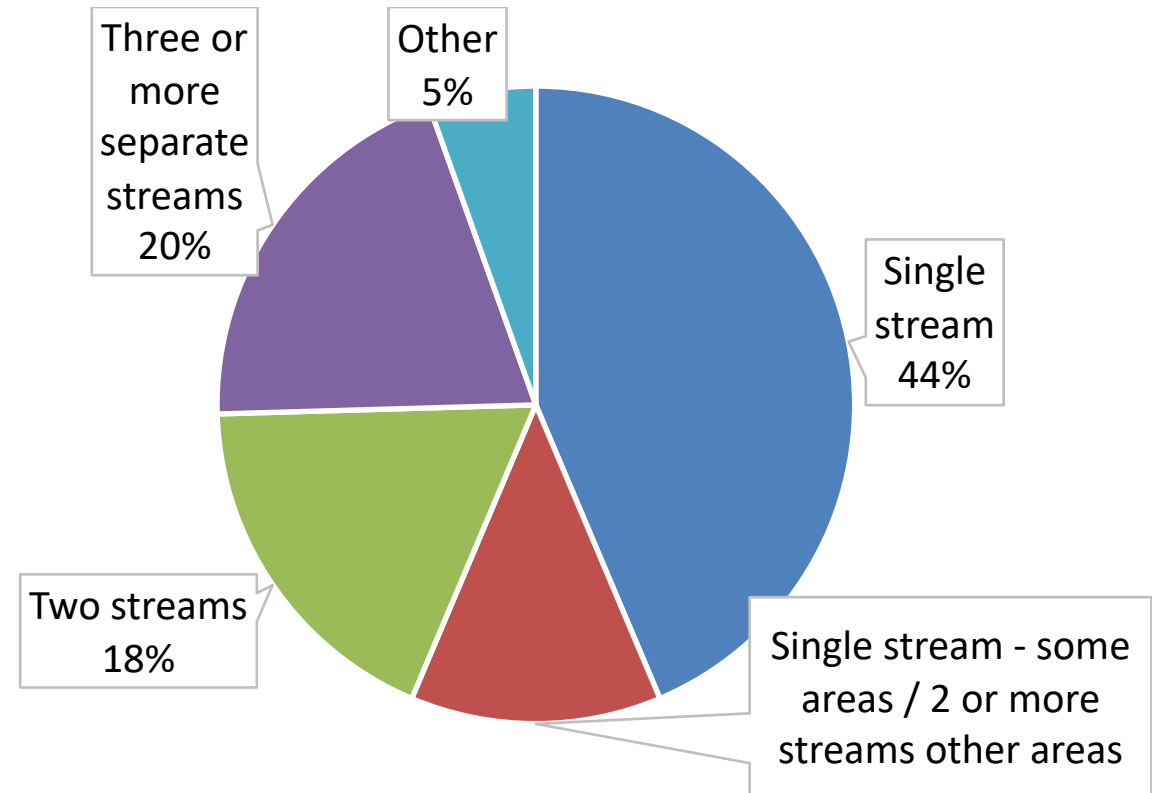


How many bins are recyclables sorted into?

Full Survey

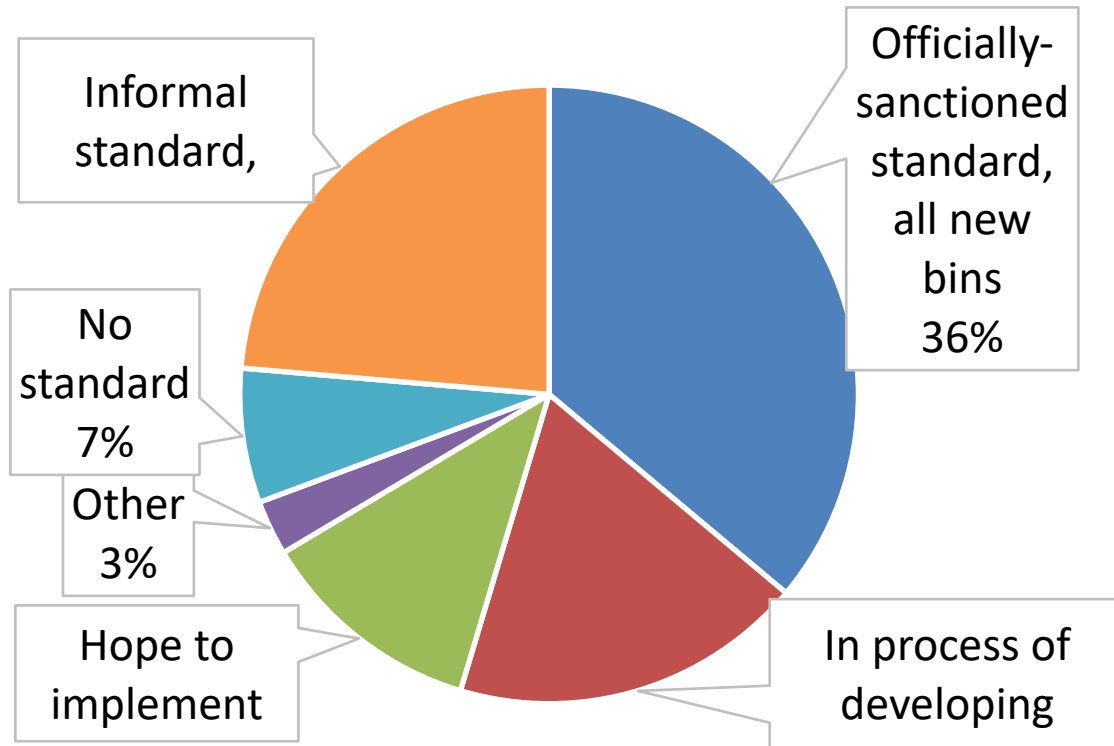


High Performers

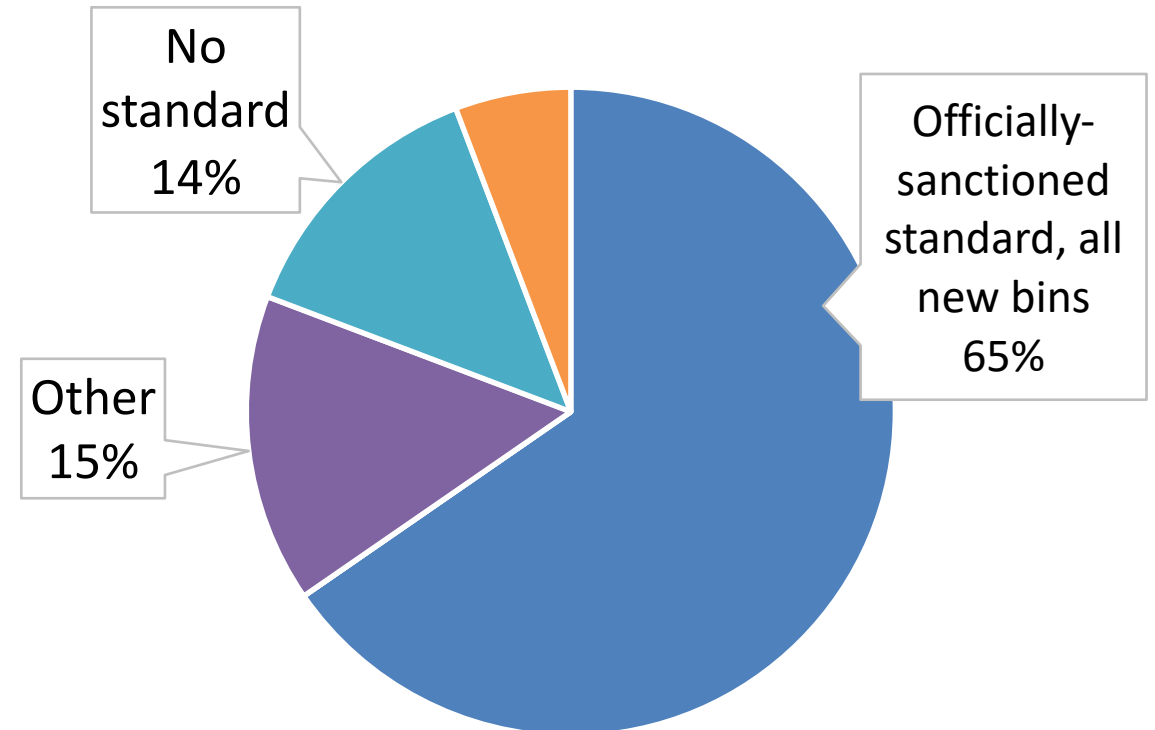


Does your campus have recycling bin campus standards?

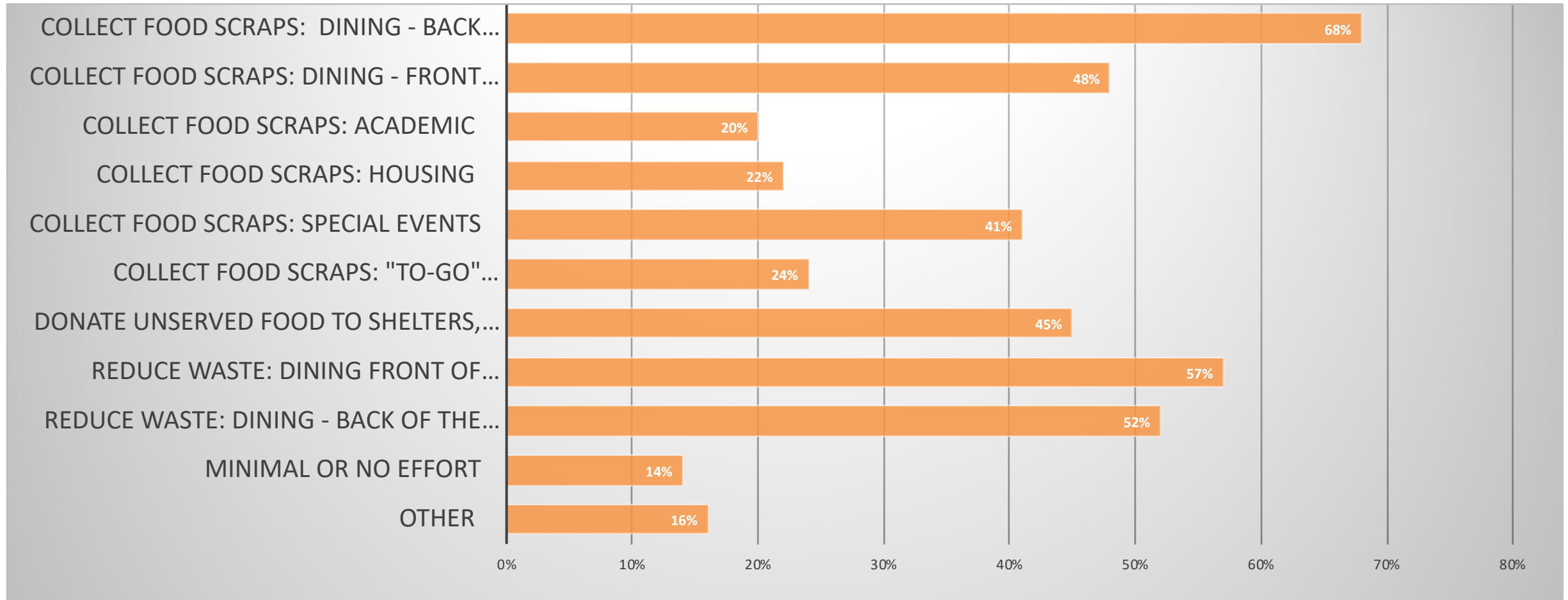
Full Survey



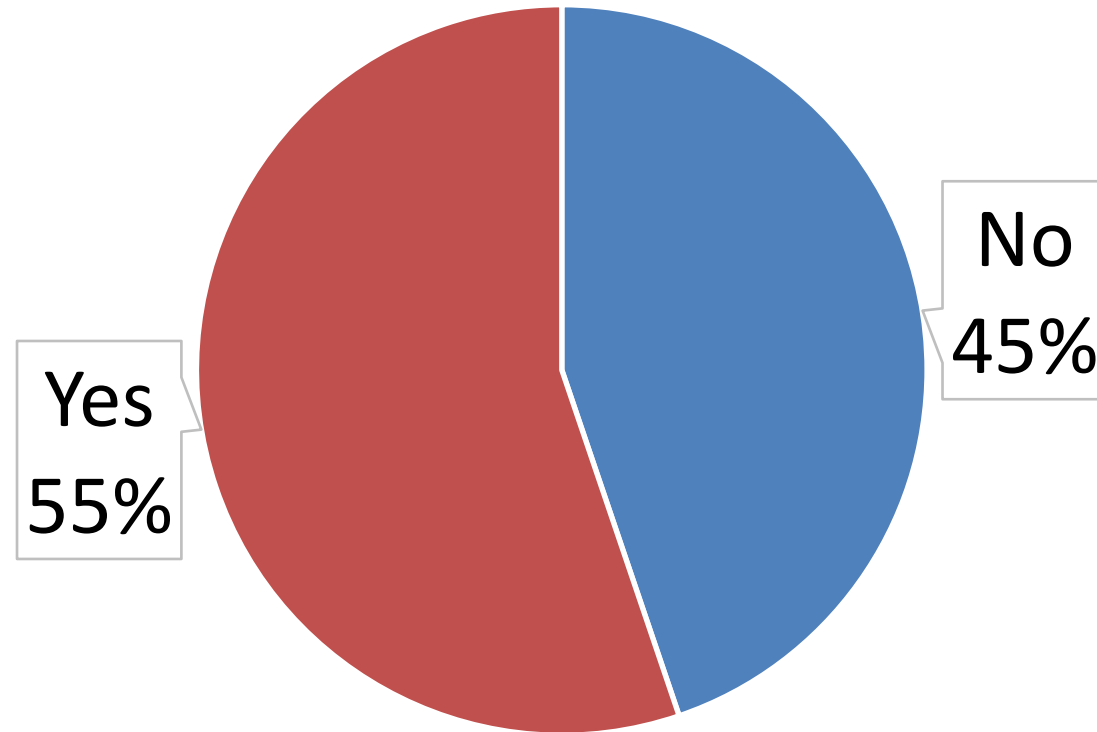
High Performers



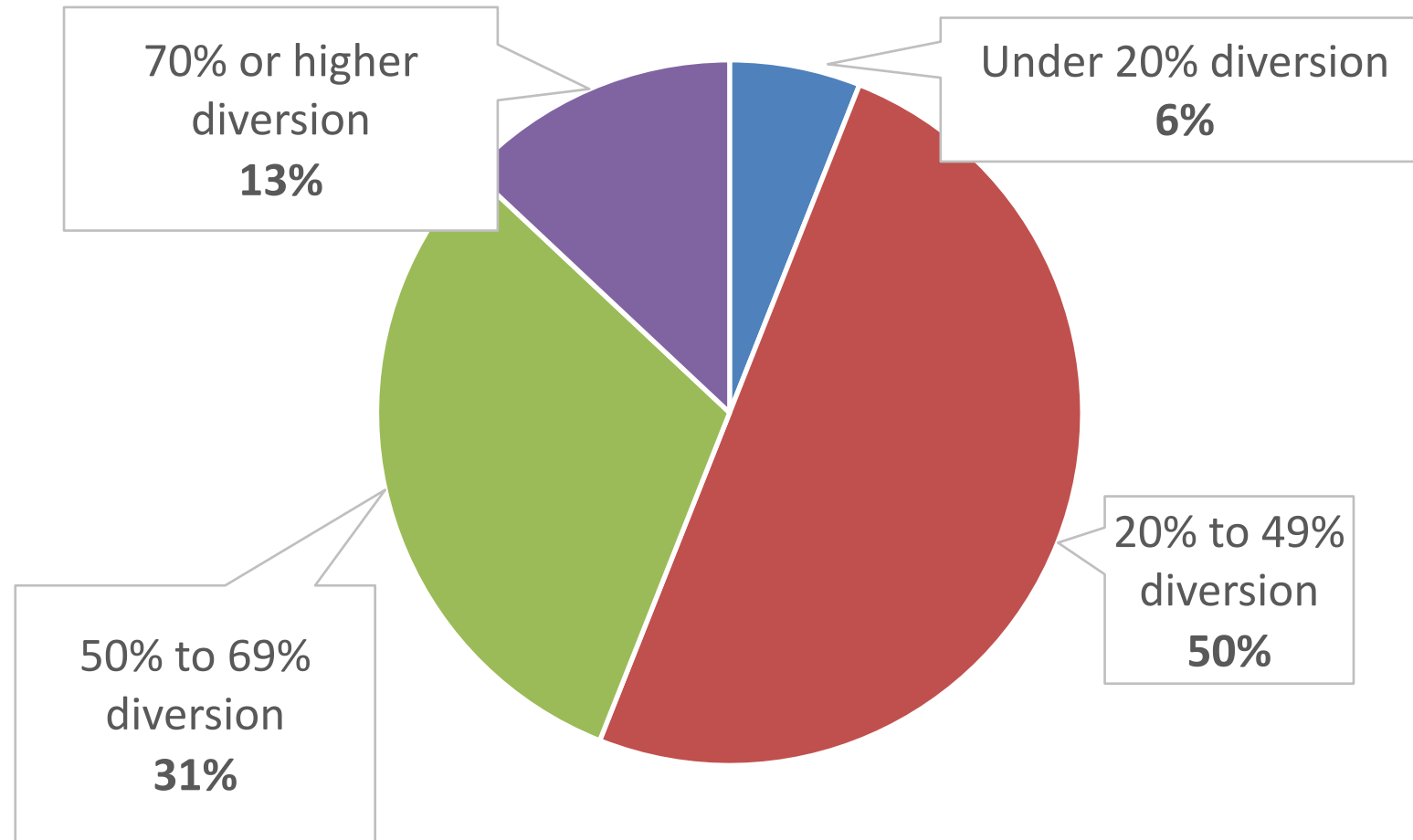
Food scrap collection areas



Campus Official Diversion Rate?

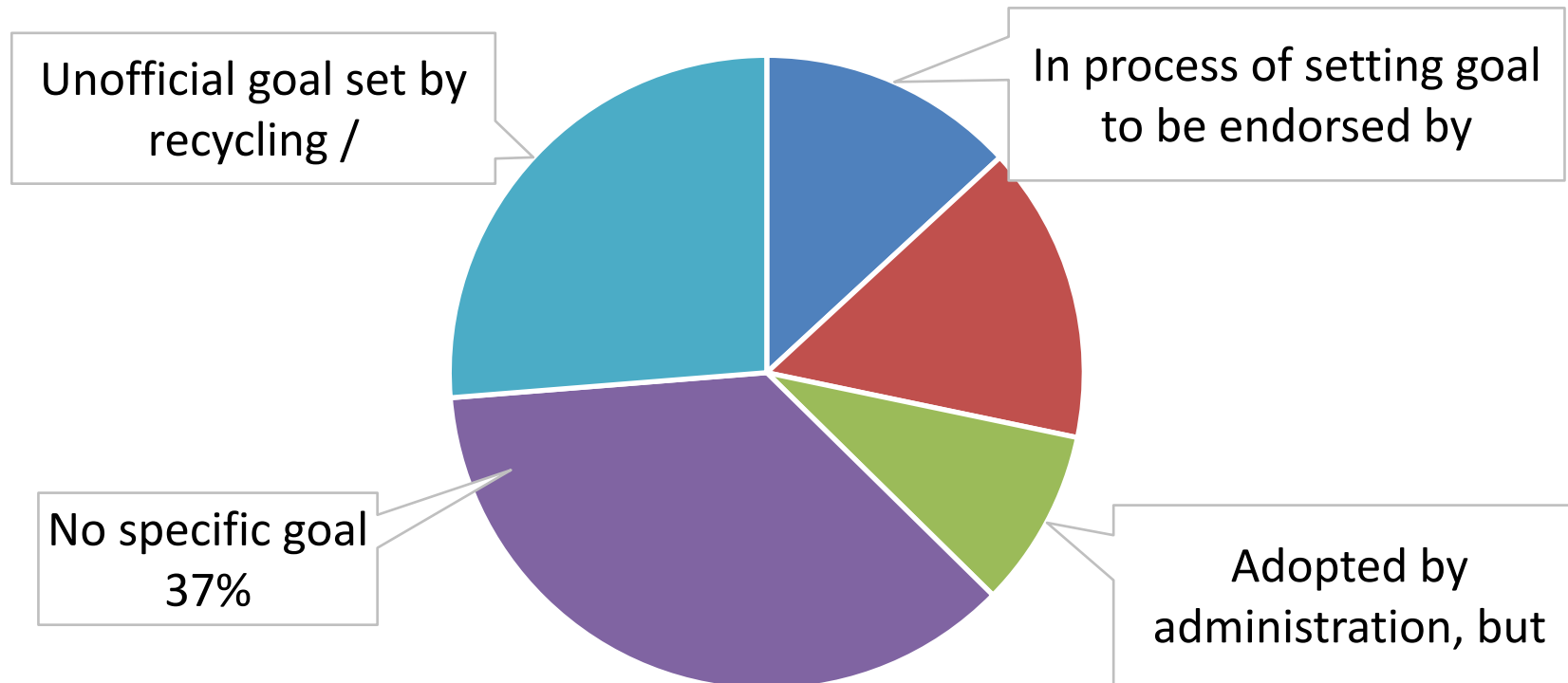


What is your diversion rate?

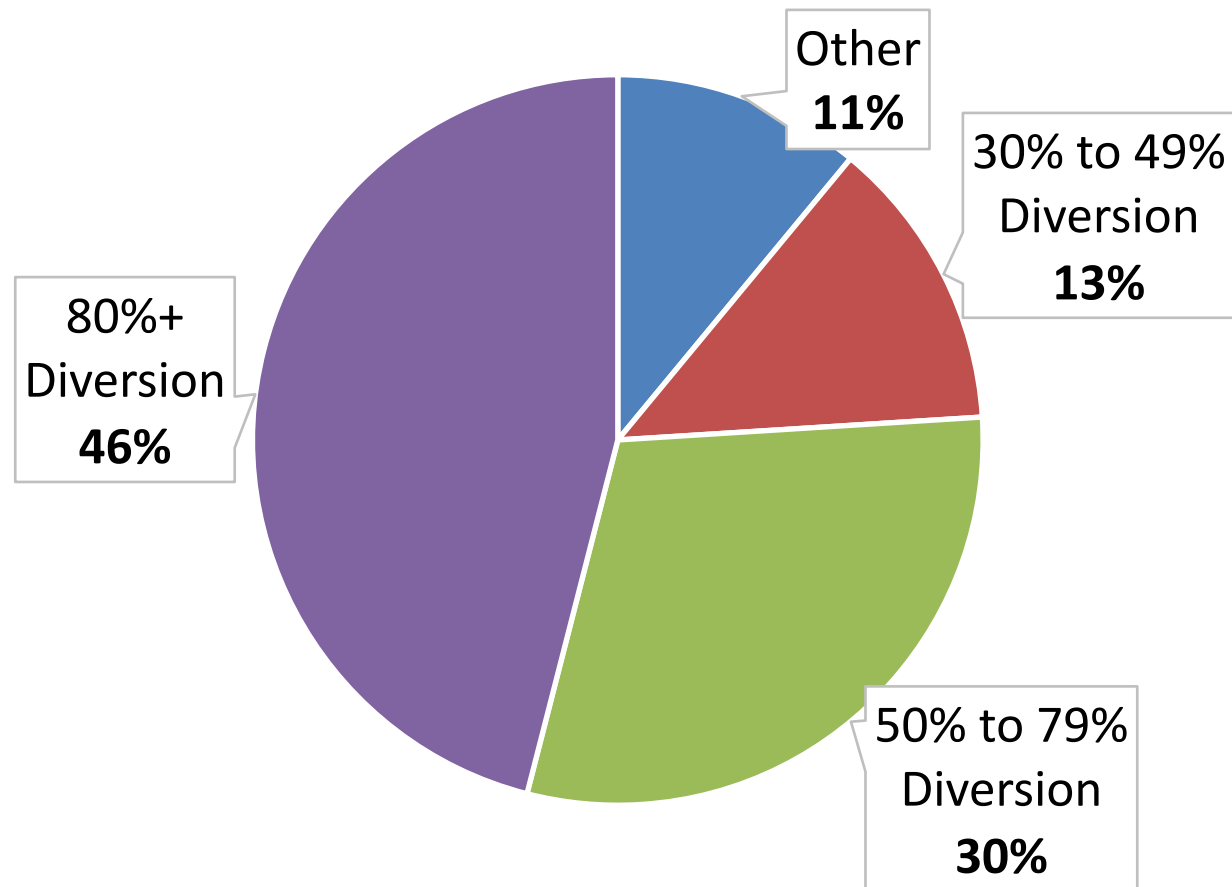


Does the campus have formal zero waste/diversion goals?

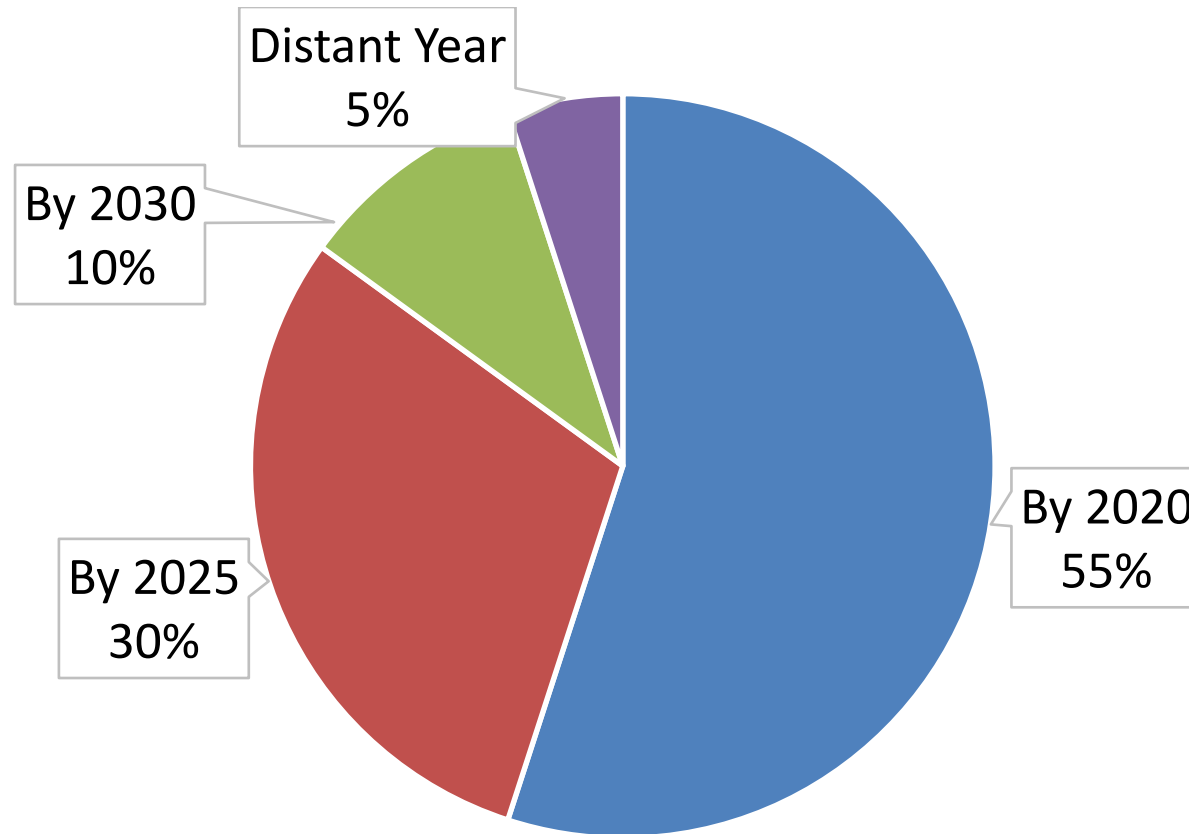
Full Survey



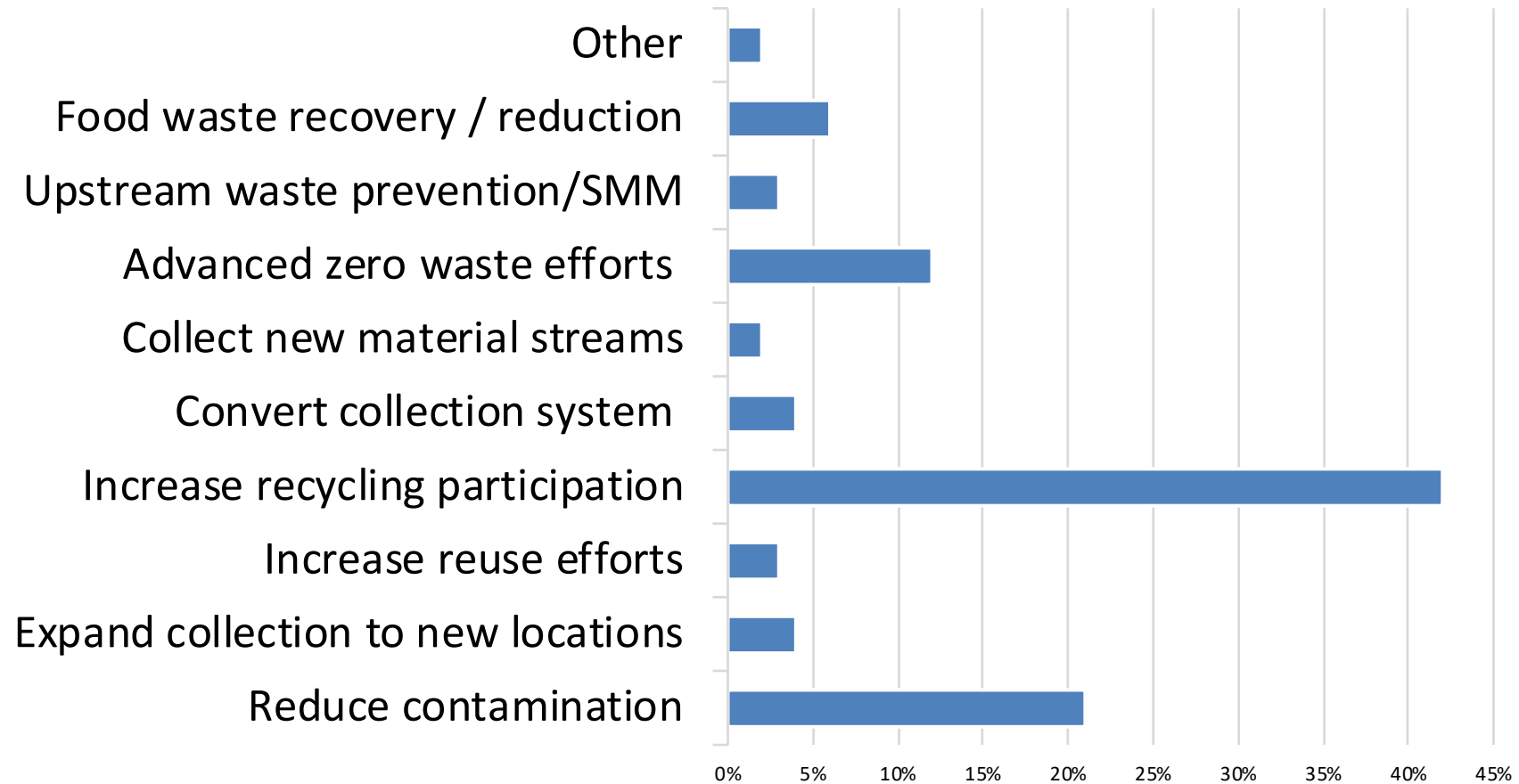
B: What is the goal?



C: By what year?



Rank the Current Priorities



2nd Highest Priority

