The background of the entire image is a dark blue color, overlaid with a pattern of various green leaves and branches in a watercolor style. The leaves are scattered across the frame, with some appearing more prominent than others. The text is centered in the upper half of the image.

CWRU  
Office of Energy &  
Sustainability's  
Eighth Annual

BIG GREEN EVENT

# CWRU Sustainability Team

Part of the Division of Campus Planning & Facilities Services

[sustainability@case.edu](mailto:sustainability@case.edu) & [energymanager@case.edu](mailto:energymanager@case.edu)

**SUSTAINABILITY  
IS A TEAM SPORT**

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- Stephanie Corbett  
Director of Energy & Sustainability & the University Farm  
[ssc72@case.edu](mailto:ssc72@case.edu)
- Erika Weliczko  
Energy Manager  
[emw3@case.edu](mailto:emw3@case.edu)
- Just hired a Sustainability Manager starting early April, replacing Erin Kollar's position, has been vacant since June
- Student Sustainability Ambassadors
- Summer SURES Research Interns

# What the Office of Energy & Sustainability Works On

- Climate Neutrality Action Plan Management
- Energy, GHG & Sustainability Data Collection and Reporting
- Energy Efficiency Projects and Campus Energy Metering
- Advise and do education on:
  - Recycling, Waste and Compost
  - Sustainable Transportation
  - Green Buildings and Grounds
- Campus Engagement in Energy & Sustainability
  - *Sustainability House residential program (sunsetting at the end of this year)*
  - *Student Sustainability Ambassador internship program*
  - *Green Bag Lunch Series coming back soon*
  - *Committees we host: - Bike committee - Climate Action Plan Committee - Tree & Bee Committee*

# The University Farm Has 3 Broad Strategic Focus Areas



app.energycap.com/app/dashboards/user/2179

Case Western Reserve University

Default User Dashboard

# CWRU Energy Data

<https://login.energycap.com/>  
use your CASE ID (abc123) to login

**Total Campus Energy Use Intensity**

Month	Electric (MMBtu)	Steam (MMBtu)	Chilled (MMBtu)	Sewer (MMBtu)	Water (MMBtu)	Other (MMBtu)
Jan 2021	100,000	30,000	10,000	5,000	5,000	5,000
Feb 2021	105,000	35,000	10,000	5,000	5,000	5,000
Mar 2021	110,000	40,000	10,000	5,000	5,000	5,000
Apr 2021	115,000	45,000	10,000	5,000	5,000	5,000
May 2021	120,000	50,000	10,000	5,000	5,000	5,000
Jun 2021	125,000	55,000	10,000	5,000	5,000	5,000
Jul 2021	130,000	60,000	10,000	5,000	5,000	5,000
Aug 2021	135,000	65,000	10,000	5,000	5,000	5,000
Sep 2021	140,000	70,000	10,000	5,000	5,000	5,000
Oct 2021	145,000	75,000	10,000	5,000	5,000	5,000
Nov 2021	150,000	80,000	10,000	5,000	5,000	5,000
Dec 2021	155,000	85,000	10,000	5,000	5,000	5,000
Jan 2022	160,000	90,000	10,000	5,000	5,000	5,000
Feb 2022	165,000	95,000	10,000	5,000	5,000	5,000
Mar 2022	170,000	100,000	10,000	5,000	5,000	5,000
Apr 2022	175,000	105,000	10,000	5,000	5,000	5,000
May 2022	180,000	110,000	10,000	5,000	5,000	5,000
Jun 2022	185,000	115,000	10,000	5,000	5,000	5,000
Jul 2022	190,000	120,000	10,000	5,000	5,000	5,000
Aug 2022	195,000	125,000	10,000	5,000	5,000	5,000
Sep 2022	200,000	130,000	10,000	5,000	5,000	5,000
Oct 2022	205,000	135,000	10,000	5,000	5,000	5,000
Nov 2022	210,000	140,000	10,000	5,000	5,000	5,000
Dec 2022	215,000	145,000	10,000	5,000	5,000	5,000
Jan 2023	220,000	150,000	10,000	5,000	5,000	5,000

**Residential EUI**

Month	Electric (MMBtu)	Steam (MMBtu)	Chilled (MMBtu)	Sewer (MMBtu)	Water (MMBtu)	Other (MMBtu)
Jan 2021	10,000	5,000	2,000	1,000	1,000	1,000
Feb 2021	11,000	5,500	2,100	1,100	1,100	1,100
Mar 2021	12,000	6,000	2,200	1,200	1,200	1,200
Apr 2021	13,000	6,500	2,300	1,300	1,300	1,300
May 2021	14,000	7,000	2,400	1,400	1,400	1,400
Jun 2021	15,000	7,500	2,500	1,500	1,500	1,500
Jul 2021	16,000	8,000	2,600	1,600	1,600	1,600
Aug 2021	17,000	8,500	2,700	1,700	1,700	1,700
Sep 2021	18,000	9,000	2,800	1,800	1,800	1,800
Oct 2021	19,000	9,500	2,900	1,900	1,900	1,900
Nov 2021	20,000	10,000	3,000	2,000	2,000	2,000
Dec 2021	21,000	10,500	3,100	2,100	2,100	2,100
Jan 2022	22,000	11,000	3,200	2,200	2,200	2,200
Feb 2022	23,000	11,500	3,300	2,300	2,300	2,300
Mar 2022	24,000	12,000	3,400	2,400	2,400	2,400
Apr 2022	25,000	12,500	3,500	2,500	2,500	2,500
May 2022	26,000	13,000	3,600	2,600	2,600	2,600
Jun 2022	27,000	13,500	3,700	2,700	2,700	2,700
Jul 2022	28,000	14,000	3,800	2,800	2,800	2,800
Aug 2022	29,000	14,500	3,900	2,900	2,900	2,900
Sep 2022	30,000	15,000	4,000	3,000	3,000	3,000
Oct 2022	31,000	15,500	4,100	3,100	3,100	3,100
Nov 2022	32,000	16,000	4,200	3,200	3,200	3,200
Dec 2022	33,000	16,500	4,300	3,300	3,300	3,300
Jan 2023	34,000	17,000	4,400	3,400	3,400	3,400

**Commodity Cost (FY22)**

Commodity	Cost	Change	Use	Unit Cost	Change
Electric	\$ 28,539,922	↑11%	↑7%	\$ 0.075 /kWh	↑8%
Steam	\$ 8,474,526	↑15%	↑3%	\$ 14.123 /kib	↑1%
Chilled Water	\$ 6,909,032	↑16%	↑17%	\$ 0.241 /Ton Hr	0%

**Commodity Performance Comparison**

Commodity	Cost	Change	Use	Unit Cost	Change
Electric	\$ 28,539,922	↑11%	↑7%	\$ 0.075 /kWh	↑8%
Steam	\$ 8,474,526	↑15%	↑3%	\$ 14.123 /kib	↑1%
Chilled Water	\$ 6,909,032	↑16%	↑17%	\$ 0.241 /Ton Hr	0%

**Dorm Usage (last FY)**

Dorm	Usage (MMBtu/Sq)
Fribley Commons	0.176
Leahy Commons	0.159
Carlton Commons	0.136
Storrs	0.134
Cutler	0.132
Pierce	0.131
Hitchcock	0.130
Michelson	0.125
Clarke Tower	0.113
Glaser	0.113
Kusch	0.104
Staley	0.102

TIP: Press [d] to show/hide database information

Erika Weliczko | cwr

## *Proposed: Solar PV*

### Murray and Hill Buildings

- Seeking LEED Gold certification
- Consider PV for new dorms to open in Fall of 2024
- Offset 5-10% of electricity usage

Which building uses more energy per square foot?

**Adelbert Hall**



**Peter B. Lewis**



Which building uses more energy per square foot?

**Adelbert Hall = 233 kbtu/SF**

Peter B. Lewis = 203 kbtu/SF





Which building uses more energy per square foot?

**Wyant Athletic and Wellness Center**



**Nord Hall**



Which building uses more energy per square foot?

**Wyant Athletic and Wellness Center**  
**= 160 kbtu/SF**



Nord Hall = 120 kbtu/SF



Which building uses more energy per square foot?

**Thwing**



**TVUC**



Which building uses more energy per square foot?

Thwing = 233 kbtu/SF

**TVUC = 268 kbtu/SF**





## What is the Freezer Challenge?

The International Institute for Sustainable Laboratories (I2SL) and My Green Lab partner to encourage laboratories across the world to **achieve greater energy efficiency and cold storage practices** with the annual Freezer Challenge! The competition runs from **January 1st to July 1st**.

## How do you participate?

- All laboratories with Ultra Low Temp should **register at: [www.freezerchallenge.org](http://www.freezerchallenge.org)**
- Points are awarded for actions that improve lab cold storage practices. **Track your points using the Freezer Challenge scoresheets.**

## Why participate?

- **Proper disposal** of unneeded, unwanted, or non-viable samples from refrigeration units. ([case.edu/ehs/waste-disposal](http://case.edu/ehs/waste-disposal))
- Improved researcher access to laboratory samples and reagents.
- Prolonged lifespan of freezers via preventative maintenance.
- Lower energy bills!

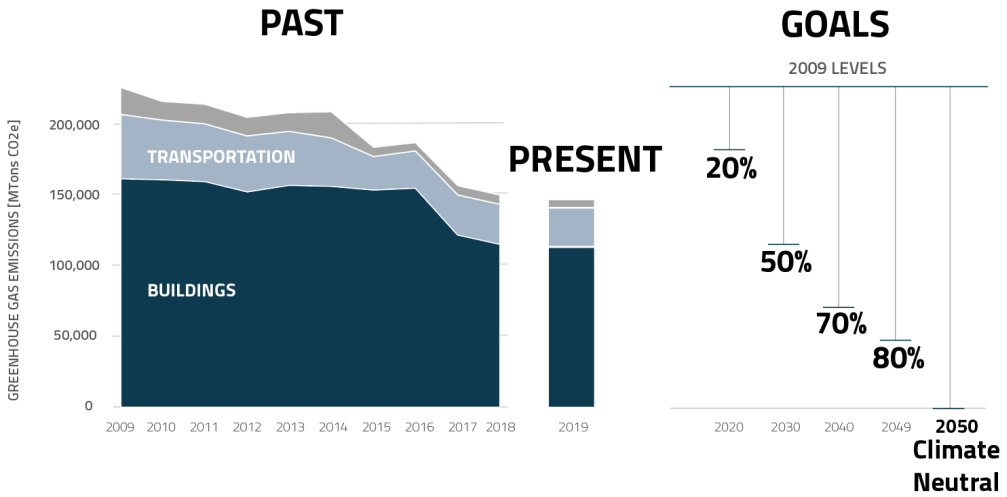
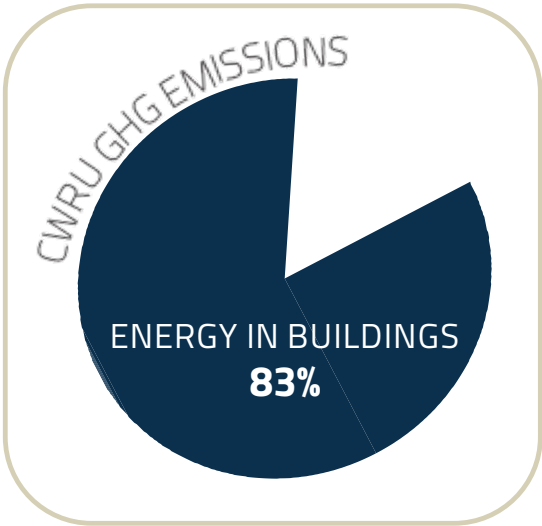
WHAT: Get points for:

- Clear boxes
- Scrape ice
- Consolidate samples

*[freezerchallenge@case.edu](mailto:freezerchallenge@case.edu)*

*CWRU is committed to carbon neutrality by 2050*

**CLIMATE ACTION PLAN**

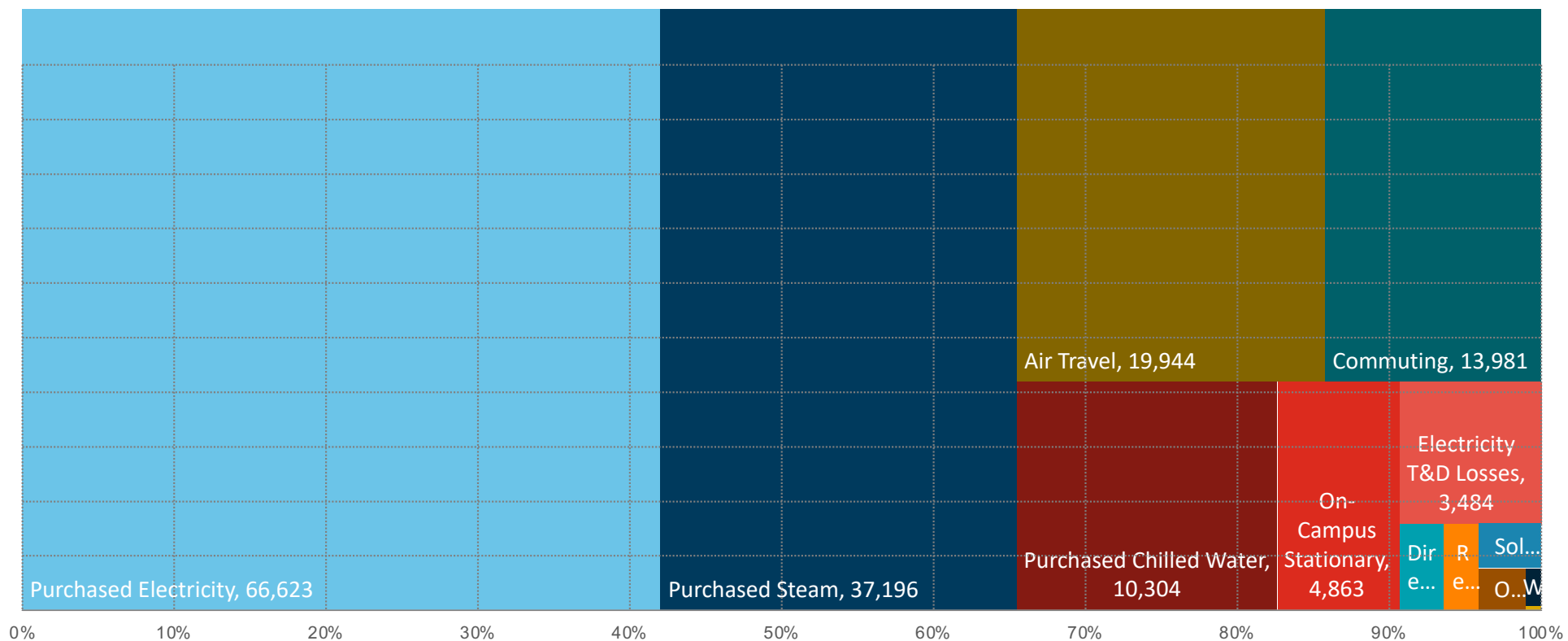


# CWRU Greenhouse Gas Inventory – Carbon Accounting

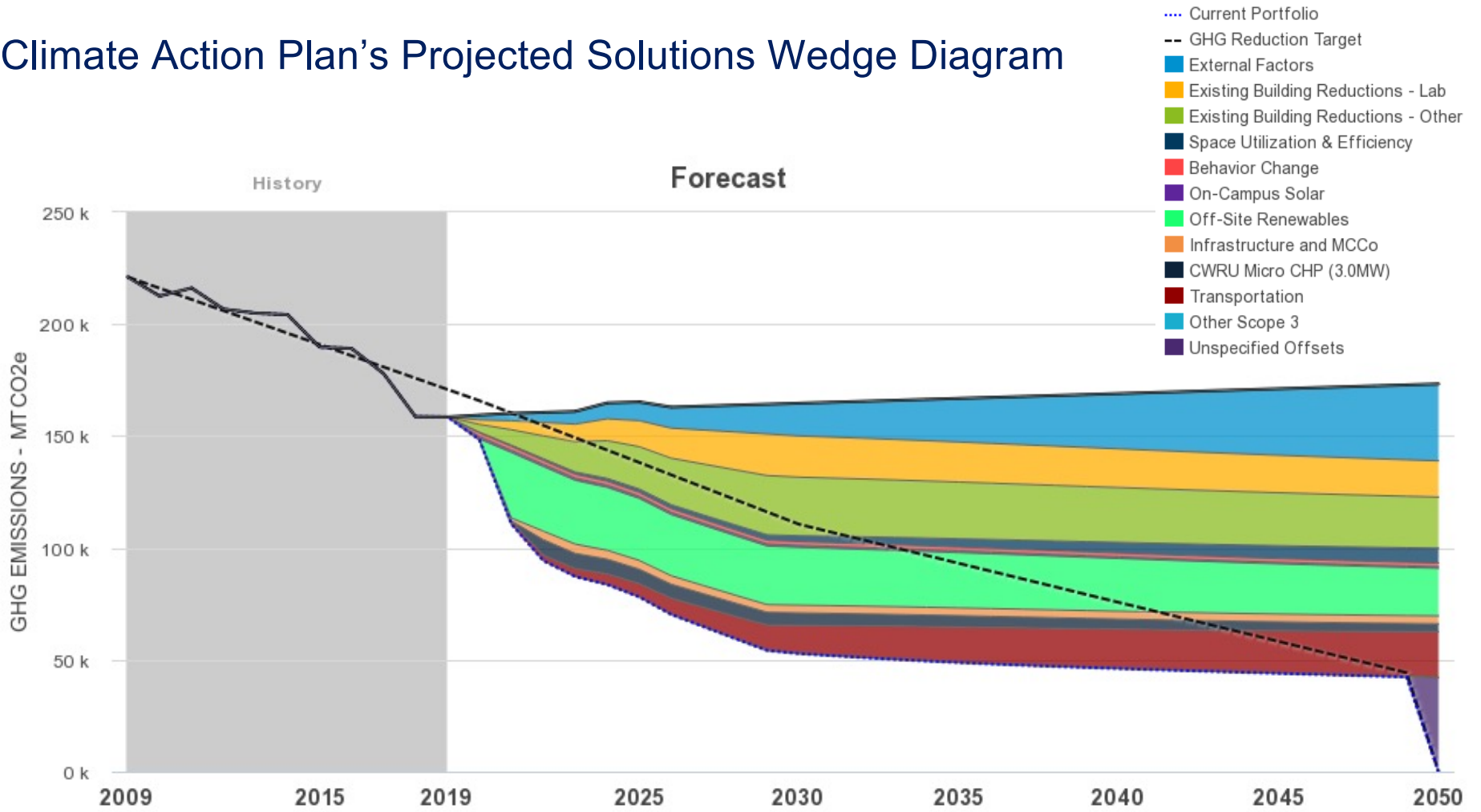
Items too small to see name:

- Direct Transportation
- Fertilizer & Animals
- Refrigerants & Chemicals
- Other Directly Financed Travel
- Solid Waste
- Wastewater

The major sources of emissions are depicted in the tree map below, 158,519 MTCO<sub>2</sub>e.

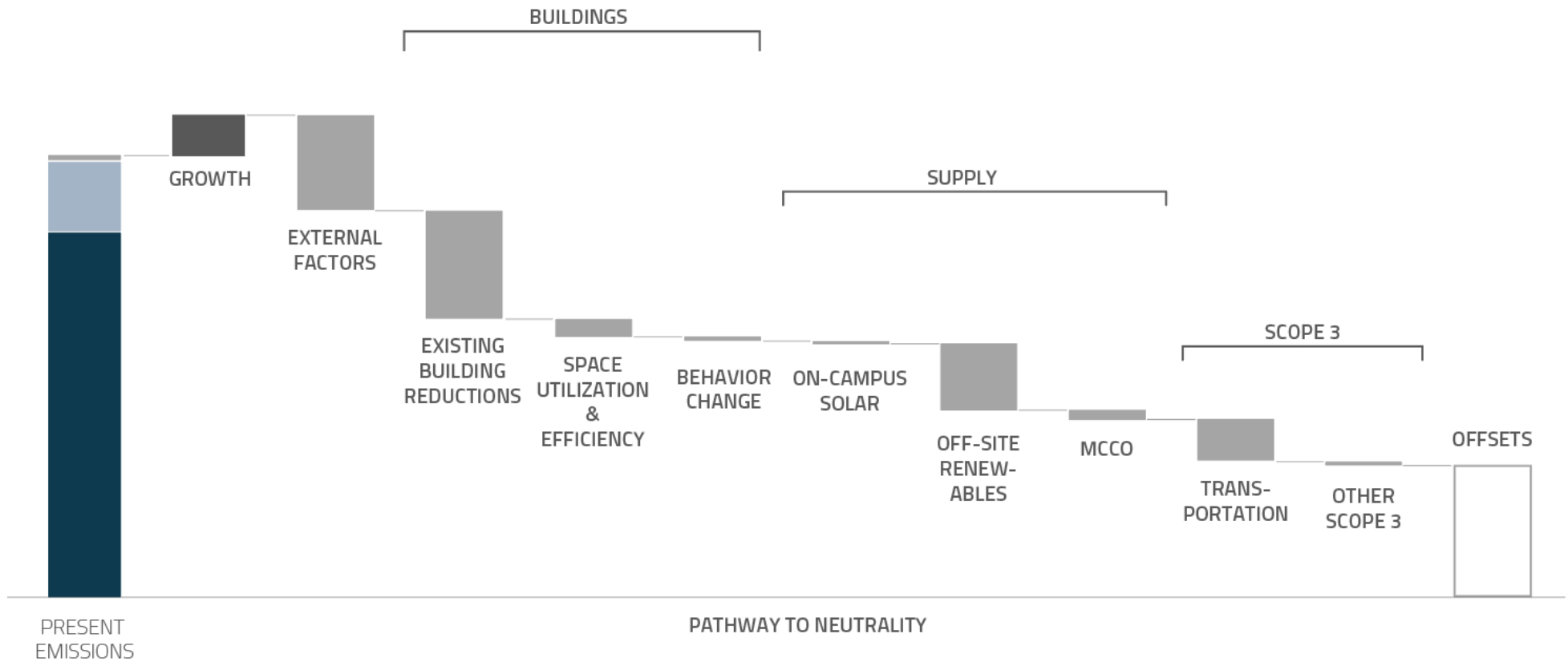


# The Climate Action Plan's Projected Solutions Wedge Diagram





# CWRU Pathway to Neutrality - Our 2020 Modeled Solutions / Opportunities





## Leadership in Energy and Environmental Design

A leading-edge system  
for certifying the  
greenest performing  
buildings in the world



## University Certified Green Buildings

1. North Residential Village - Silver (Houses 1-4,6,7)
2. North Residential Village - Gold (House 5 only)
3. Tomlinson Hall - Silver
4. Tinkham Veale University Center - Gold
5. Wyant Athletics and Wellness Center - Silver
6. New STJ Residence Hall – Gold
7. Linsalata Alumni Center - Gold
8. MSASS– LEED Interior Silver
9. Samson Pavilion Health Education Campus – Gold
10. Dental Clinic - Silver
11. Fribley – Silver v. 4
12. Maltz Performing Arts Center, phase 2 – Gold v. 4

# Recycling Best Practices @ CWRU

- Consistent bin type across campus
- Consistent signage and language across campus
- Simple signage that is consistent with state and national best practices
- Signage/images always with the bin attached w/ frame or sticker
  - Signs/stickers that can easily be updated
- Ideally invest in connected infrastructure



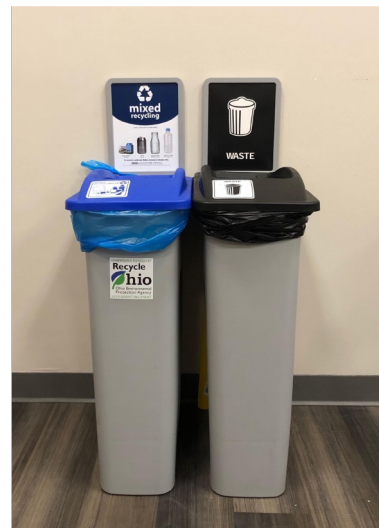
[www.case.edu/sustainability](http://www.case.edu/sustainability)



**To recycle cardboard: flatten and place between bins.**

To reorder: [www.recycleacrossamerica.org](http://www.recycleacrossamerica.org)

© The standardized labels for recycling bins are copyright and trademark protected by Recycle Across America®, © 2013-2015 non-profit, dedicated to making it easier for people to recycle right. All rights reserved.



## 2022-2023 Sustainability Ambassadors

Working on:

- Res Hall Energy Contest/CWRU Unplugged
- Tree Campus Requirements
- Recycle: Race to Zero Waste
- Fix it Events
- Earth Day Alumni Event
- Farm Engagement Events
- Freezer Challenge for Ultracold Freezers
- 2030 District Data
- Geolocating Bike Fix Its & Bike Racks
- Water Bottle Filling Station Updates

Sofie Iwamasa

Gillian Williams

Sara Olmsted

Michaela Galarza

Liz De Vaux

Kathy Du

Cecile Laundre Hernandez

- Several additional student hires just interviewed



# REScycle



## What is REScycle?

- ❑ CWRU's end-of-the-year move-out donation program.
- ❑ REScycle allows undergrads to donate items that they no longer need or want while keeping good, **usable** items out of the landfill.

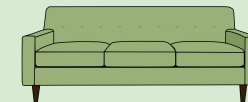
## Where to donate?

- ❑ Students living in on-campus housing will find a large box in a common area in their Residence Hall.
- ❑ There will also be a small box to collect **unused** and **unopened** personal care items and food.



## Where should be donated?

- ❑ Items in **good condition** such as:
  - ❑ Clothes 
  - ❑ Shoes
  - ❑ Sports equipment
  - ❑ Small appliances
  - ❑ Unopened personal care products
- ❑ Larger items such as furniture (request on myhousing for pick-up)





### Second Saturday

Join us at various locations across Cleveland neighborhoods.

10 am - 1 pm

### Fourth Mondays

Join us each fourth Monday at Sears think[box].

3 - 7 pm

Have a broken item or piece of clothing that needs repair?

Come to a free workshop where coaches teach and assist you with repairs.

Visit our website to learn more.



### Next Workshops:

- Saturday, March 11th at the Solid Waste District
- Monday, March 27th at think[box]

### How can you help?

- Attend a workshop!
- Spread the word on Facebook, Twitter, etc.
- Become a coach, sign up online



# Things You Should Know About

- Transportation happenings
  - CWRU Transportation Safety Taskforce,
  - University Circle Sustainable Transportation Committee
  - Campus Bike Committee
  - Bike Sharing draft options
  - NOACA Regional Climate Action Plan Taskforce
- Sustainability Office is working on this year:
  - Sustainability Plan
  - Climate Action Plan Online Scorecard
  - Energy Conservation Plan
  - Working on validating and funding requests for the 10 CAP solutions
  - Working to implement 3 additional President Kaler sustainability/climate related Commitments:
    - Electrify the fleet, bring back pedal bike share, further fund energy efficiency in existing building
- New SAC Sustainability rep. Carlier Myers

OHIO INDEPENDENT  
ARBORIST ASSOCIATION

integrating  
**nature**  
for Healthier Communities

Exploring the evidence base to support implementation  
of policies, programs and practices.

JOIN US  
TUESDAY, MARCH 14TH  
8:30 a.m. - 4:00 p.m.

Case Western Reserve University  
TINKHAM BALLROOM

**GUEST SPEAKERS:**  
Kathleen Wolf Ph.D.  
Theresia Hazen  
Heather Venhaus

REGISTER ONLINE:  
<https://ohioarborist.org/calendar/>


PARTNERSHIP WITH:  
CASE WESTERN RESERVE UNIVERSITY  
Cleveland Clinic

# University Farm Programs

1. For credit class site, mostly Biology
2. Biology Field Station & other research
3. Continuing Education
4. Athletics/Cross Country
5. Farm Food Program (including the compost operation)
  1. Volunteer/service opportunities
6. Special Events including internal and external space rentals, picnics & school-based program use
7. 2-3 Residential units rented at market rate
8. Grounds & Maintenance operations
9. General community recreation use





The background of the entire image is a dark blue color, overlaid with a pattern of various green leaves and branches. The leaves are rendered in a watercolor style, with soft edges and varying shades of green, from light lime to deep forest green. Some leaves are simple and oval-shaped, while others are more complex with multiple leaflets on a stem. The pattern is dense and covers the entire area.

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