



# **Champlain College Greenhouse Gas Inventory FY2022**

# FY2022: On the heels of the COVID-19 Pandemic...

The 2021-2022 Academic year moved to a more typical year, and yet there were still pandemic implications. The Burlington campus had:

- A few residence halls operating as isolation or quarantine halls; two completely unused (North, Sanders)
- Increased air exchanges and filtration in buildings, 24/7
- Few participants in study abroad, faculty-led field courses, or service trips
- Instituted Ozzi Box reusable containers for EATS meals, starting in January 2022 as a pilot roll out; disposable items otherwise used

# Why do we track our greenhouse gas emissions?

- Since 2017, Champlain\* is a member of the [Burlington 2030 District](#).
  - Goal: working to reduce building energy consumption, water use and transportation emissions 50% by 2030
  - \*technically, only the CCM building is represented in this membership
- Support City of Burlington's [Climate Action Plan](#) goals
  - Goal: The first target requires leveling off the growth of emissions by 2016 and bring them back to 2010 levels.
  - Goal: The second target involves an actual reduction of the 2010 emission levels by 2025. (p.10)
- Support State of Vermont's 2021 [Climate Action Plan](#)
  - Goal: to reduce emissions by 50% by 2030.
- [Climate Change is a Racial Equity Issue](#)



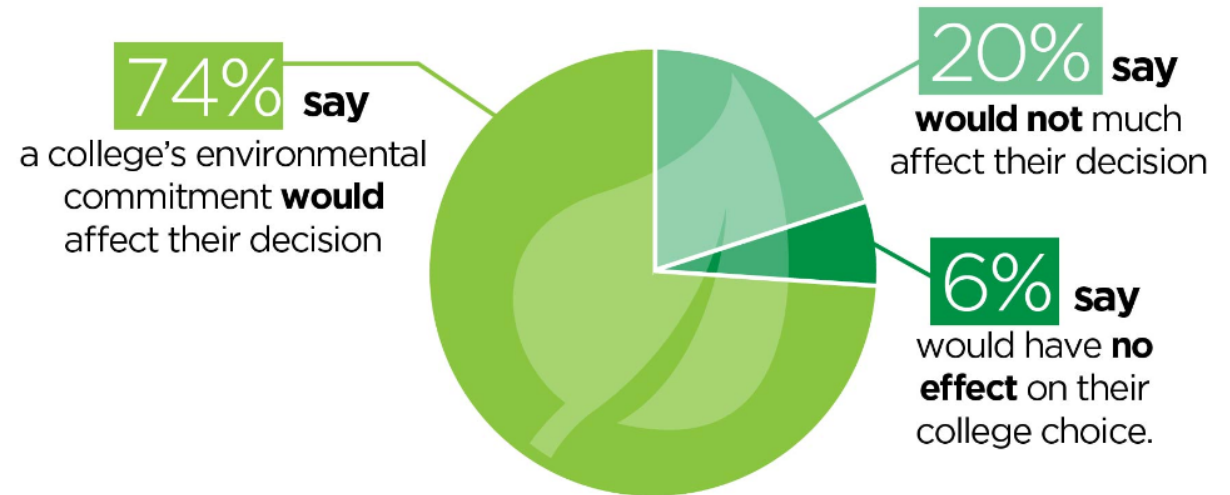
# Why? Students want it

## Prospective Students Show Sustained Interest in Campus Environmental Commitment

In Princeton Review's latest survey (2022) of high school students, called Hopes & Worries, 74% of students say a college's environmental commitment would impact their decision of where to attend.

## Going Green

### School commitment to the environment affecting school choice



# Included emission sources at Champlain College

## Scope 1 – Direct

- Natural Gas Consumption
- Vehicle Fleet & Shuttle
- Fertilizer
- Refrigerants

31.5%

## Scope 2 – Upstream

- Electricity Purchased from the Regional Grid

37%

## Scope 3 – Indirect

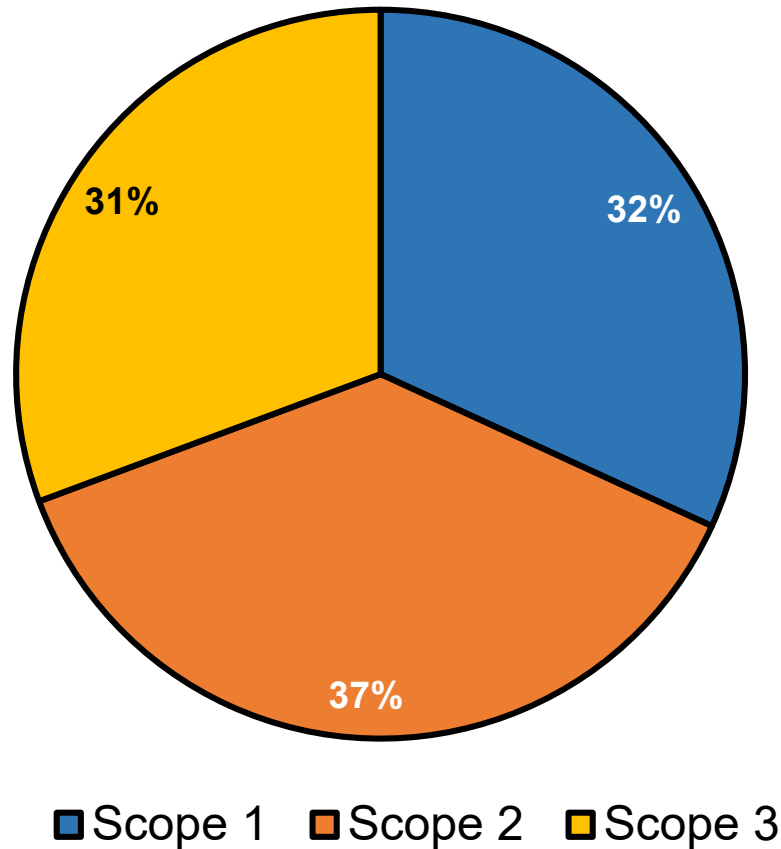
- Employee & Student Commuting
- Employee Air Travel & Student Study Abroad
- Personal Mileage Reimbursement
- Landfill Waste
- Wastewater
- Purchased Paper
- T&D Losses

31.5%

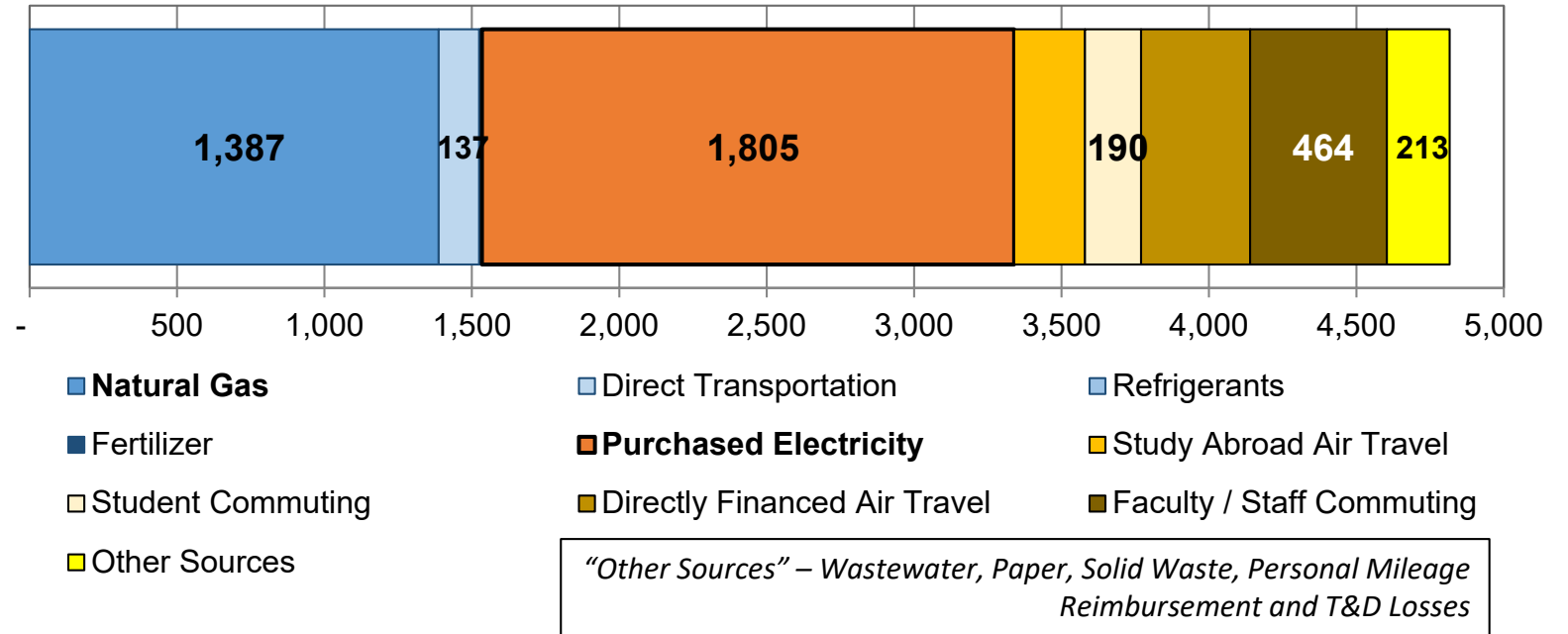
Increasingly Difficult to Control and Mitigate These Sources of Emissions

# Summary of Champlain's FY22 GHG Emission Sources

## GHG Emissions by Scope

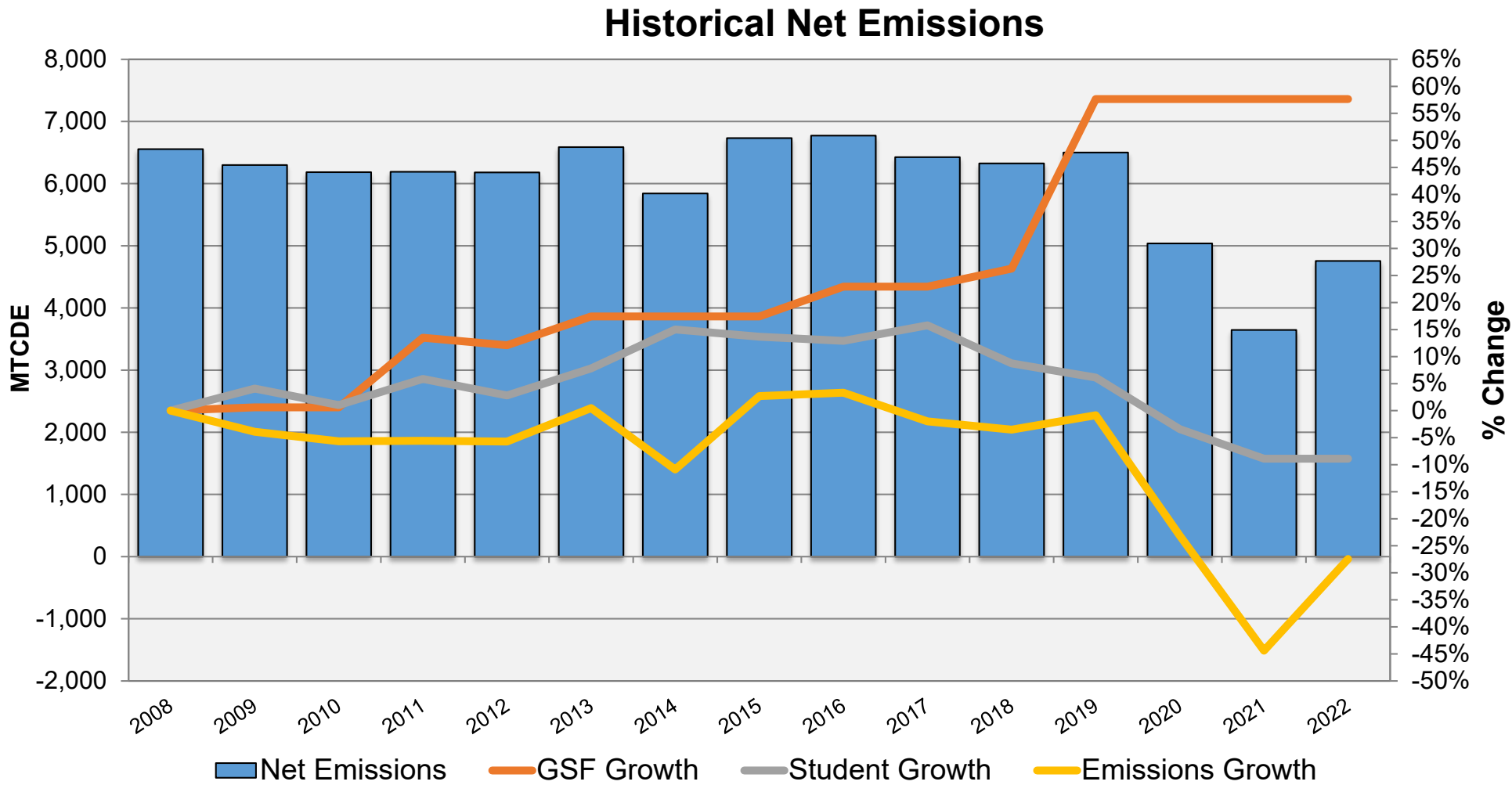


## Campus GHG Emissions by Source - MTCDE



This year still reflects a more atypical situation with Scope 3 being lower. This figure remains low due to the decreased amount of international travel in FY22.

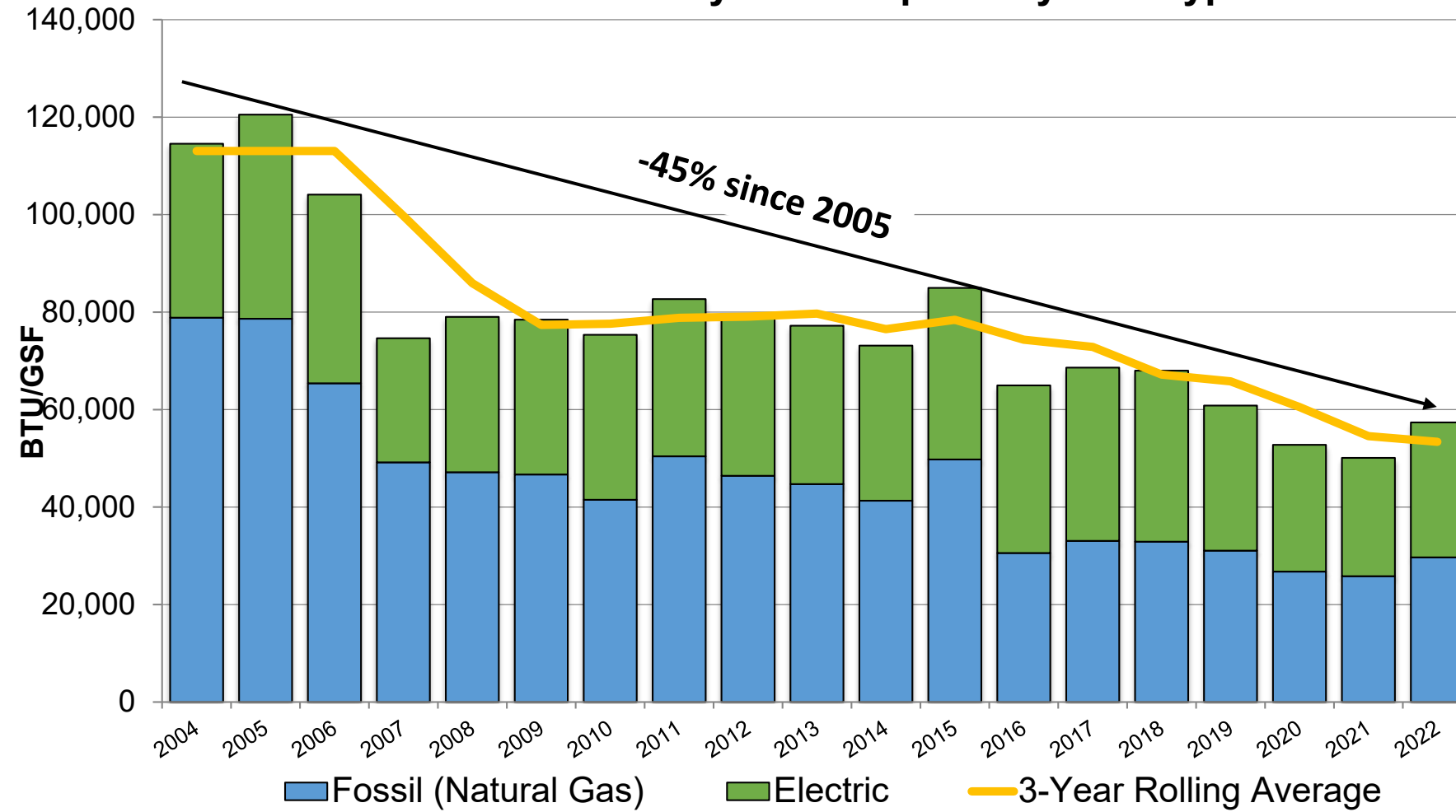
# Emissions Significantly Lower due to COVID conditions



Since 2008, emissions decreased by 27%. Increase from FY21 reflects return to campus and some international travel.

# Energy Use on a Steady Decline

## Total Utility Consumption By Fuel Type



Compared to prior year:

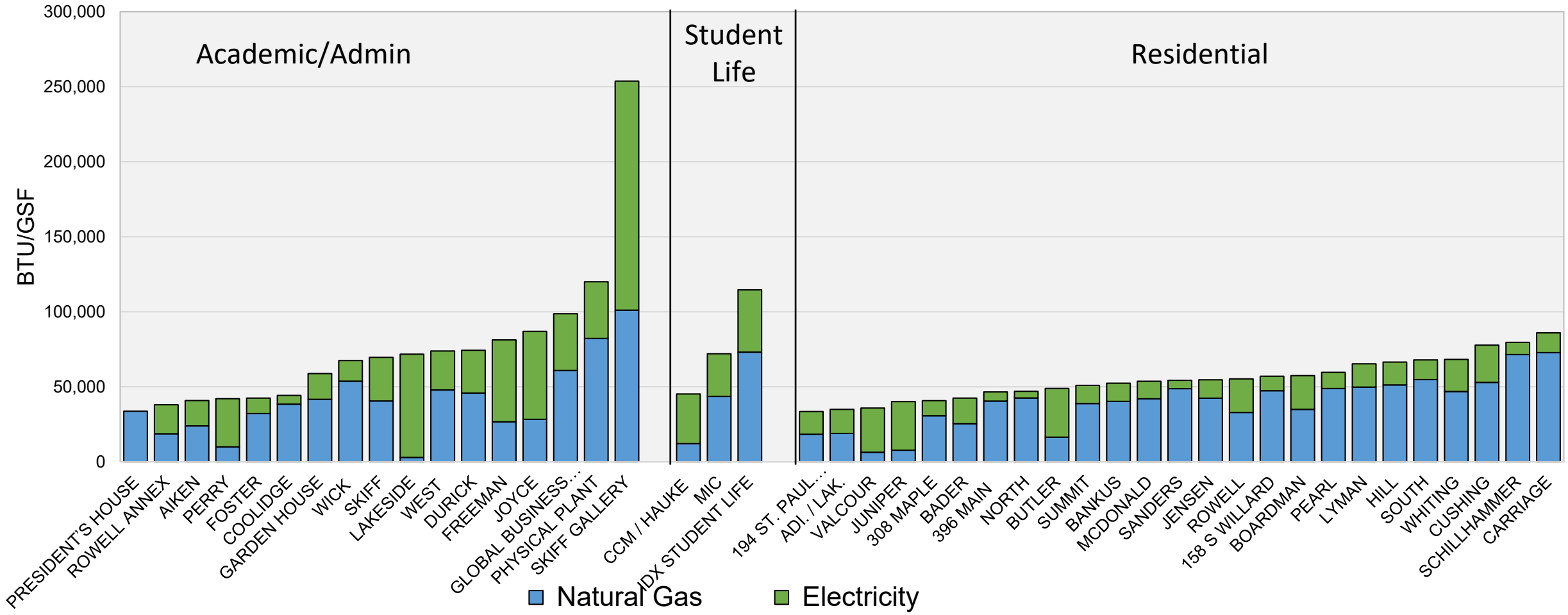
Gas: 2% Gross Increase  
 Residential: 11% net increase  
 Acad/Admin: 21% net increase

Electricity: 14% Gross Increase  
 Residential: 14% net increase  
 Acad/Admin: 14% net increase



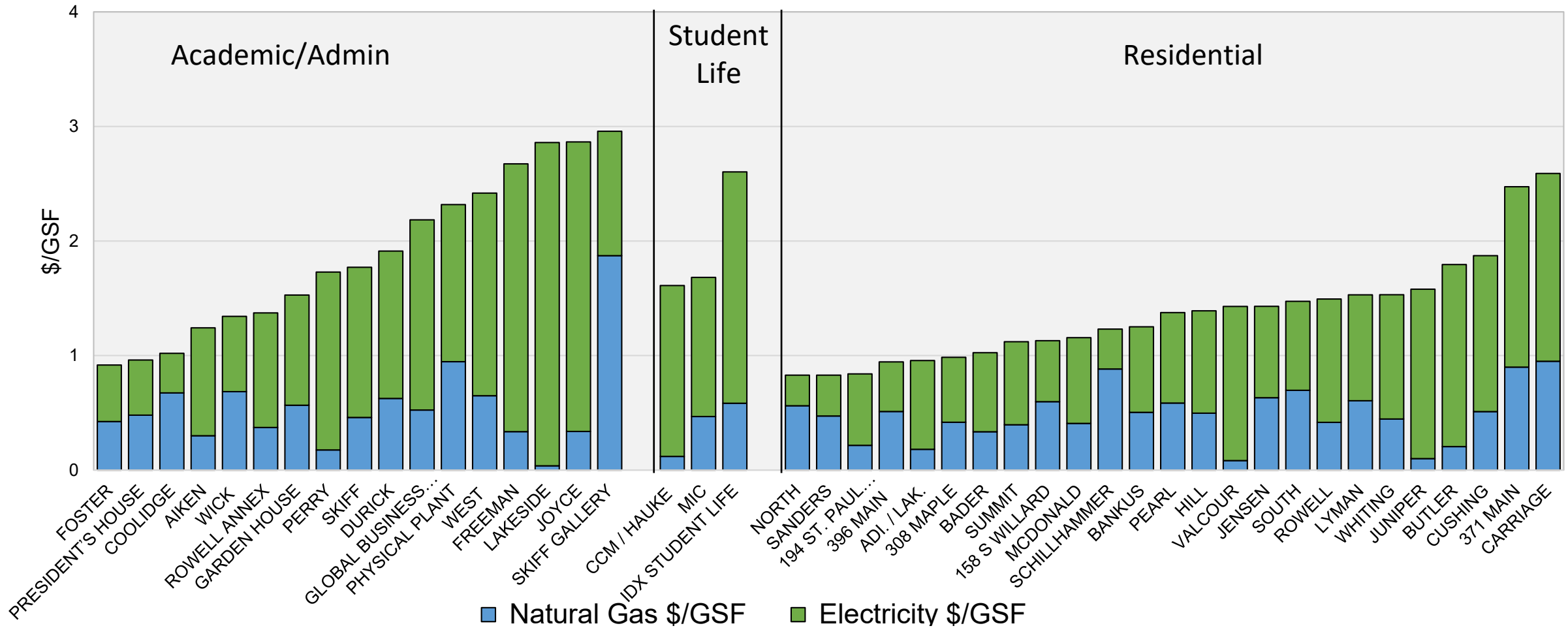
# FY22 Energy Consumption by Building

Total Energy Consumption by Building per Gross Square Foot (GSF)

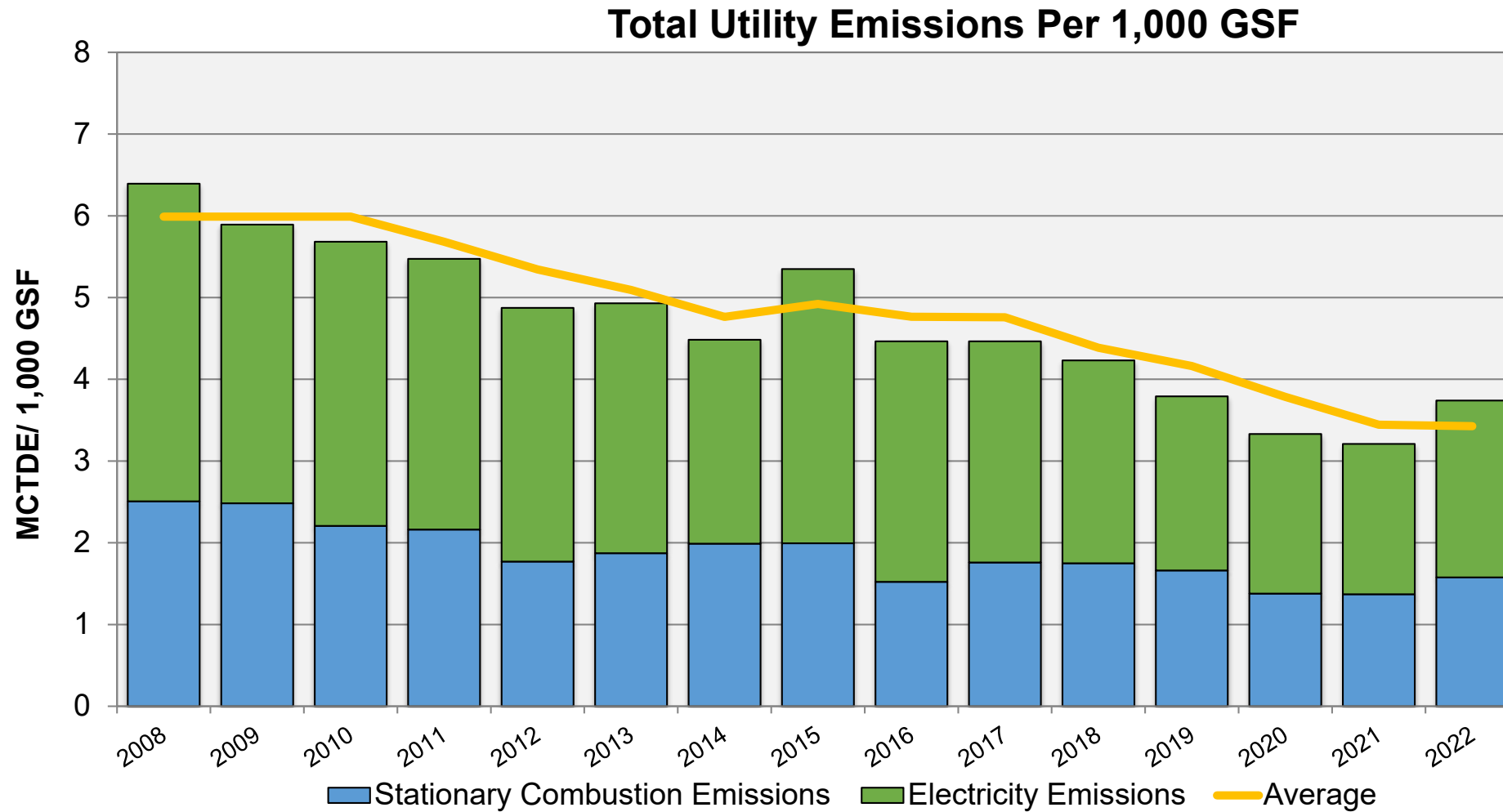


# FY22 Energy Costs by Building

Total Energy Costs per Gross Square Foot (GSF)



# Building-based Emissions on Steady Decline



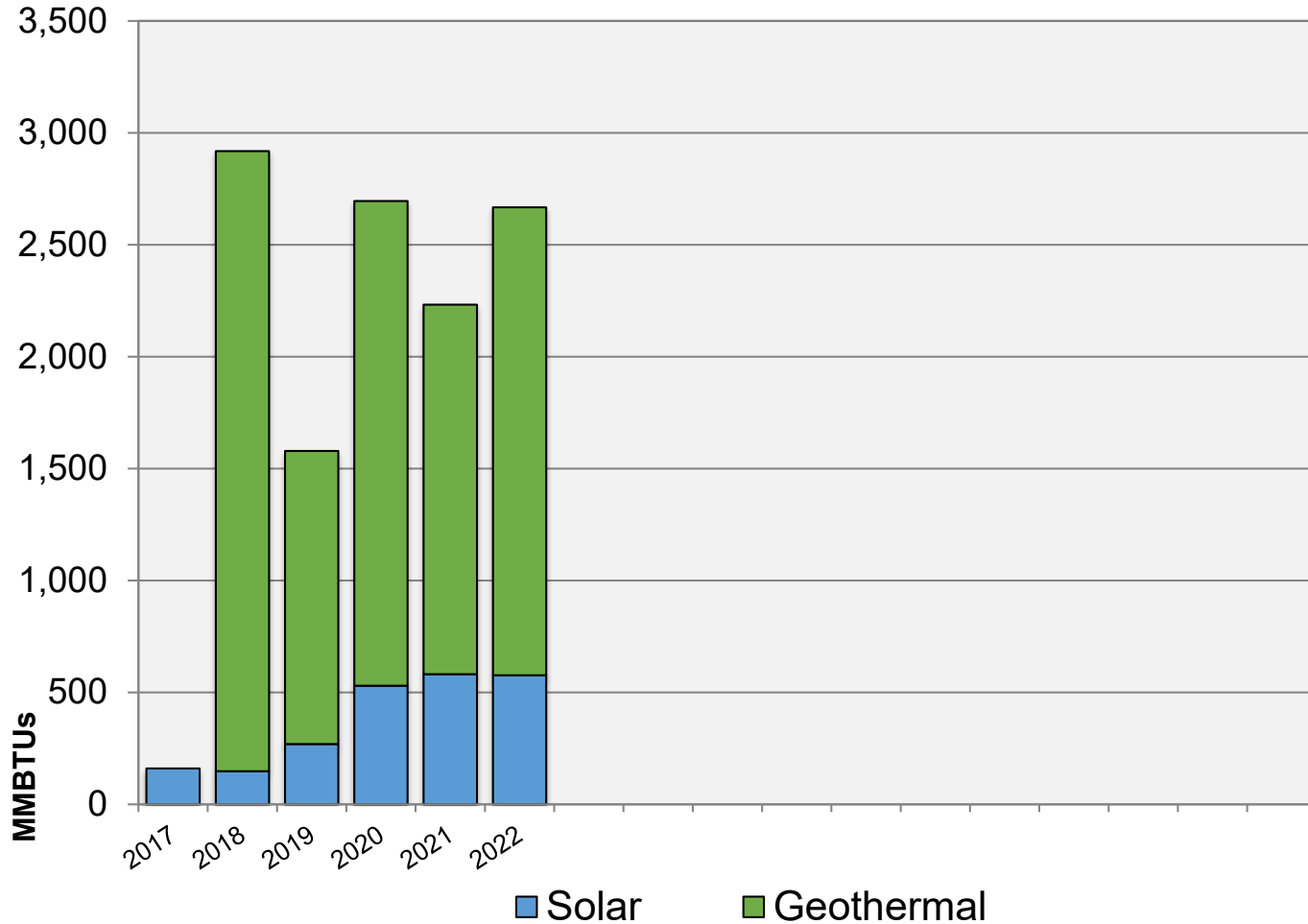
Champlain's gross utility emissions are 37% below 2008 levels, despite a 58% increase in building space since then.

FY22 reflects a return to typical campus status following the pandemic

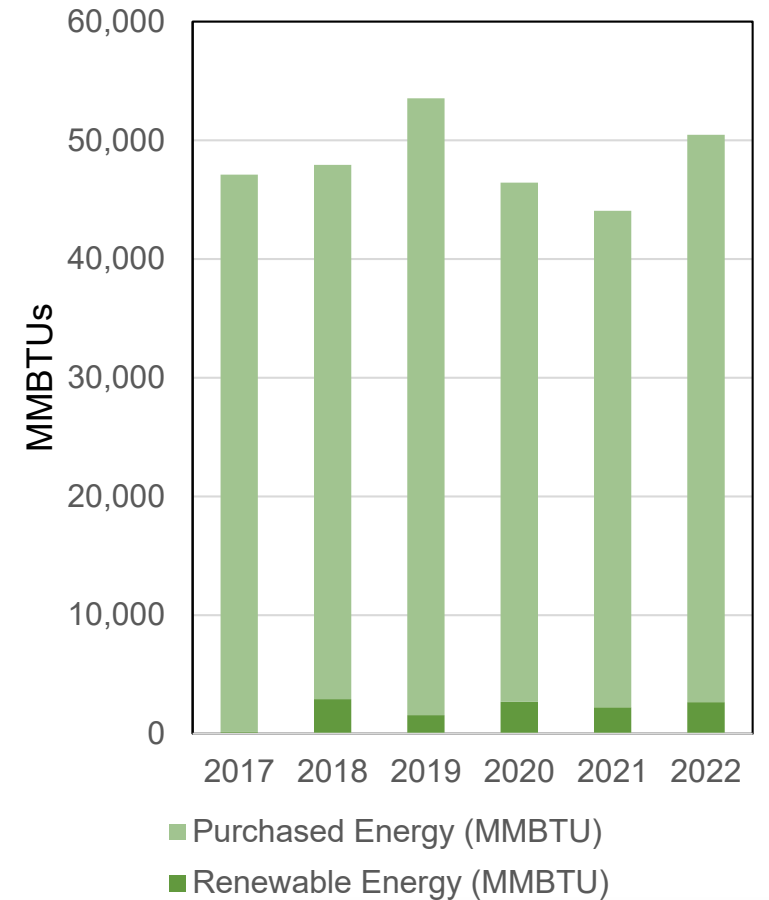


# Renewable Energy is a growing part of our solution

### Renewable Energy Generated Onsite at Champlain

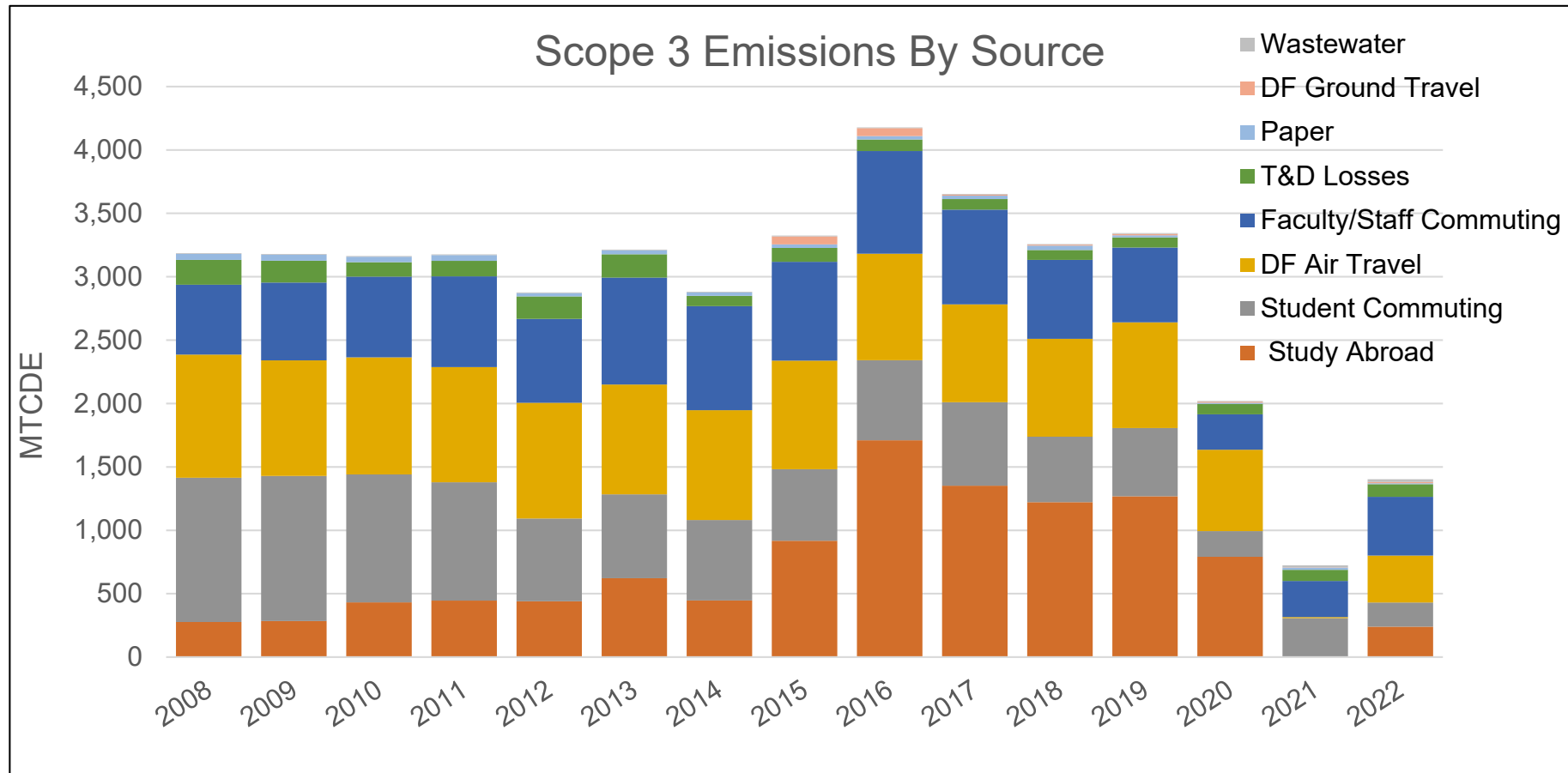


### Total Energy Consumption at Champlain



Onsite renewable energy was 5.02% of our total energy consumption in FY2022.

# FY22 Scope 3: Commuting is Top Source

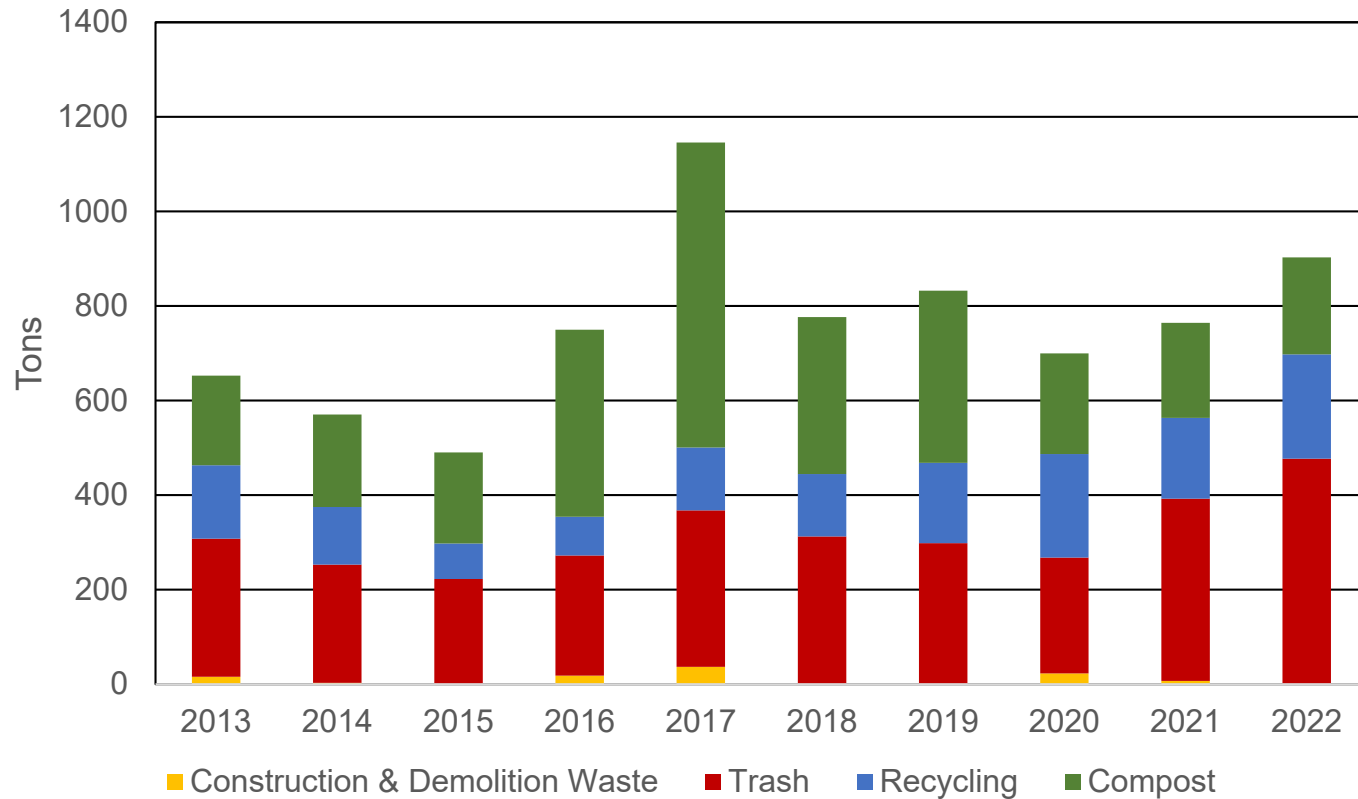


**FY 22 Scope 3 Emissions – still limited air travel so daily commuting is top source**

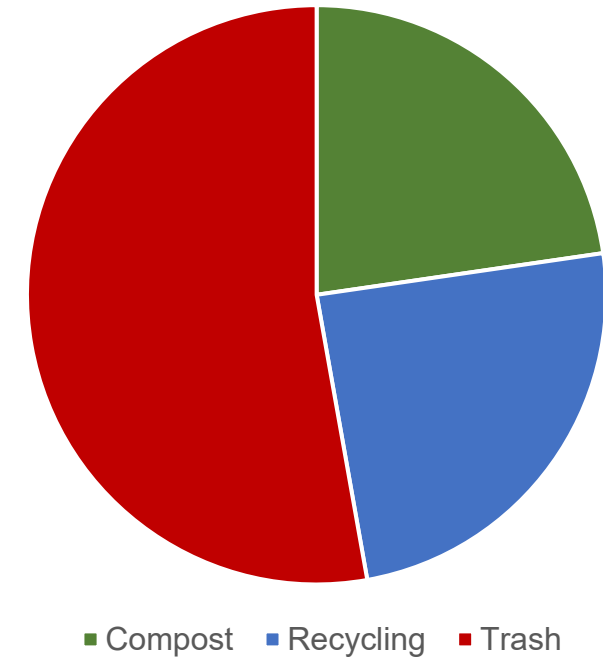
# Scope 3: A closer look at Waste

*smaller emissions impacts, but highly tangible*

### Total Waste Generated



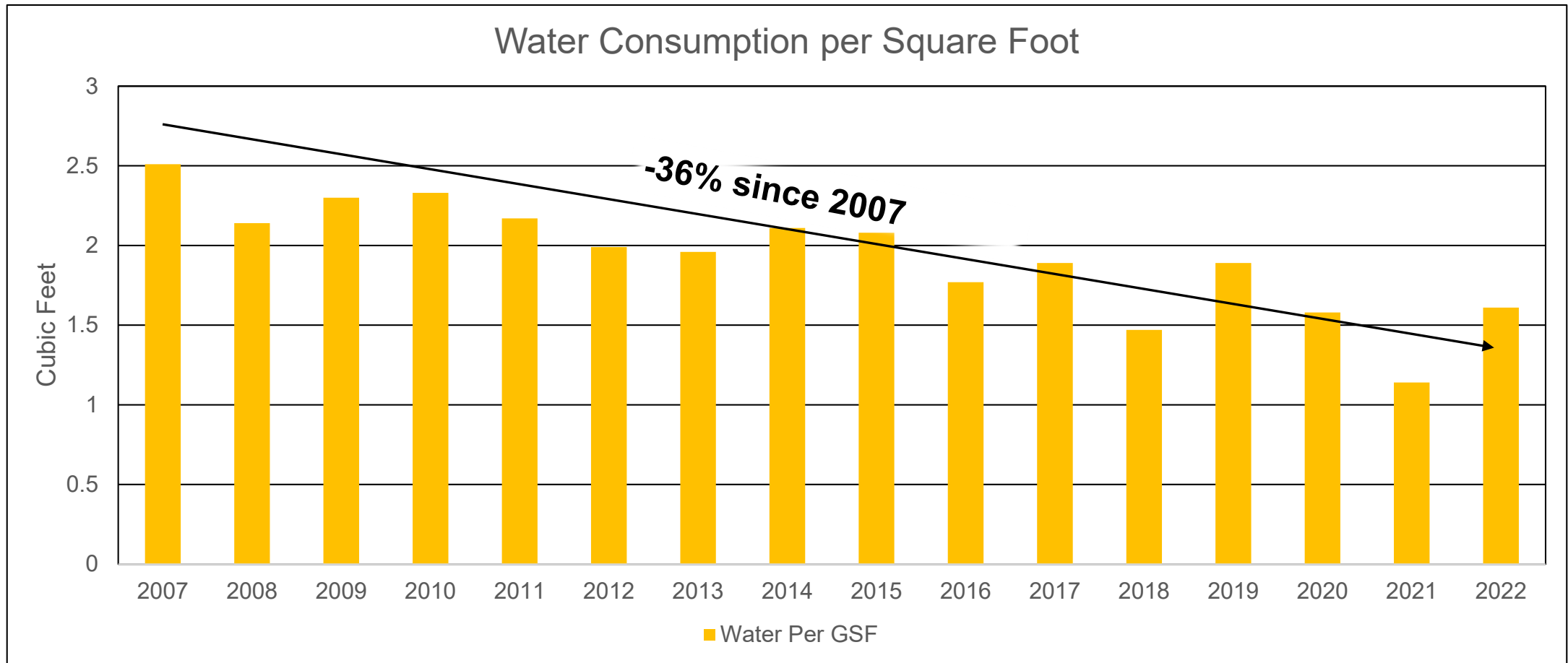
### 2022 Diversion Rate



Lower diversion rate and overall increase in waste in 2022, likely still due to increased use of disposable items during the pandemic.

# Scope 3: A closer look at Water

*smaller emissions impacts, but impacts energy use and Lake Champlain*

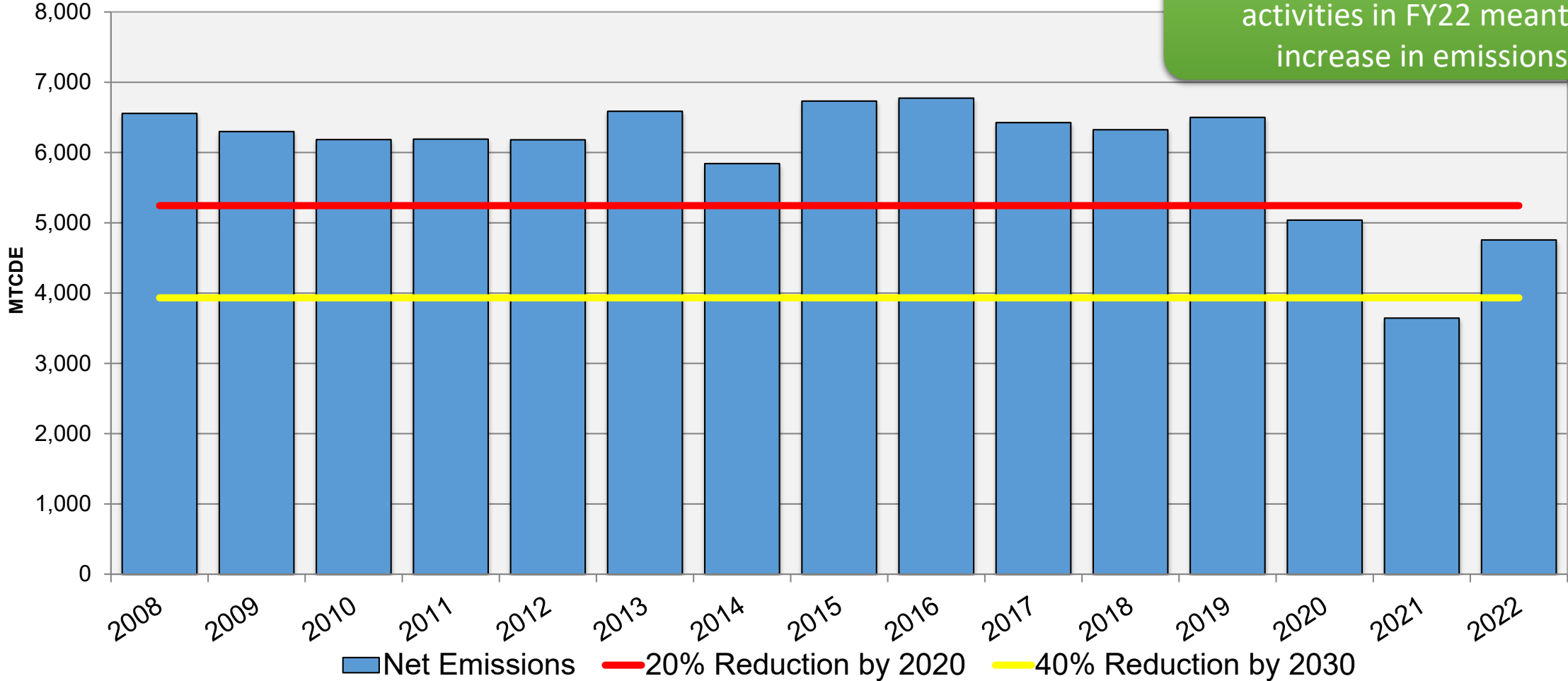


Water usage per GSF has decreased 36% since 2007

# Net Emissions vs. Common Reduction Targets

### Historical Net Emissions

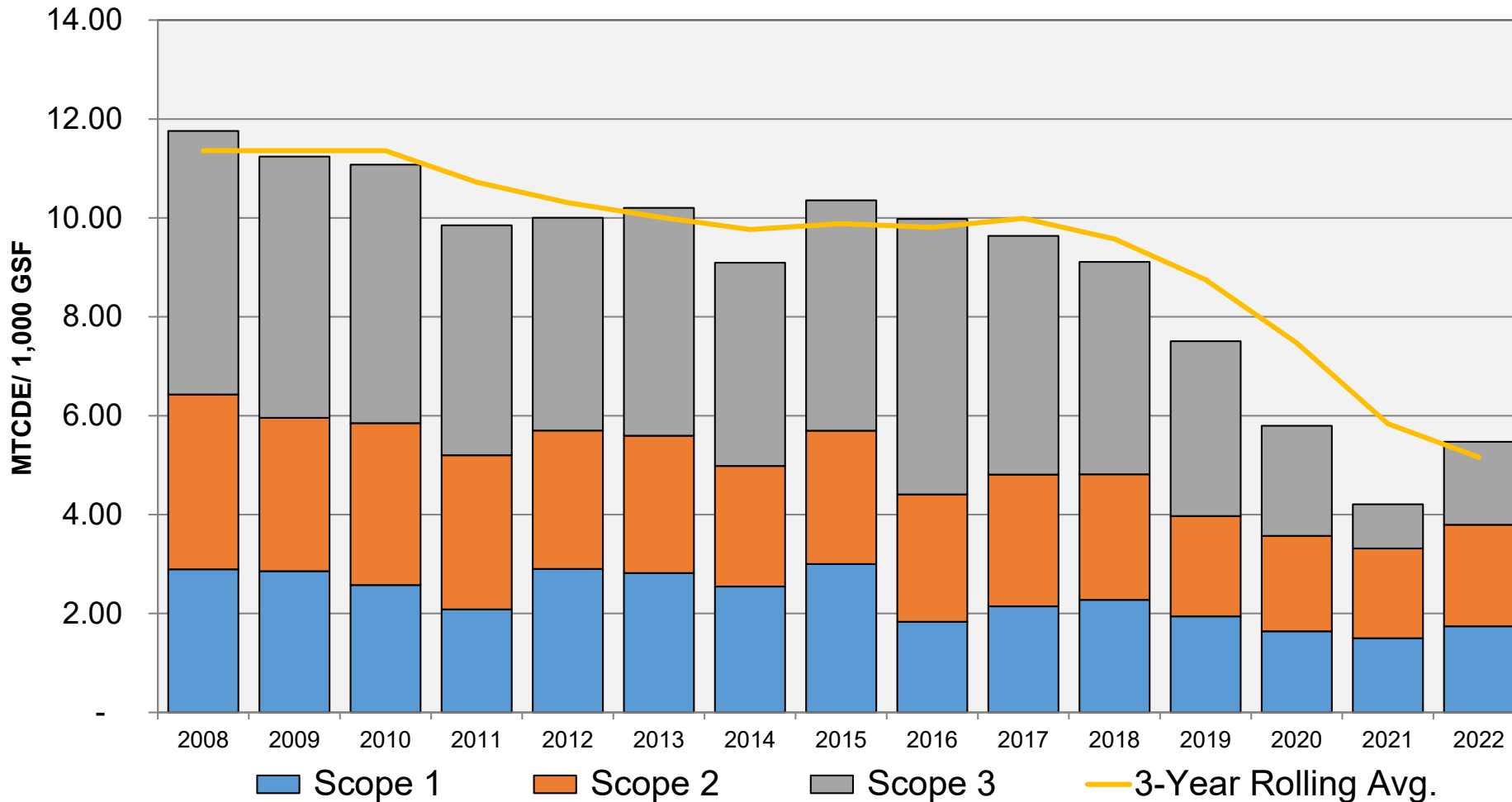
Return to more typical campus activities in FY22 meant an increase in emissions.





# Tracking Campus Emissions per Square Foot

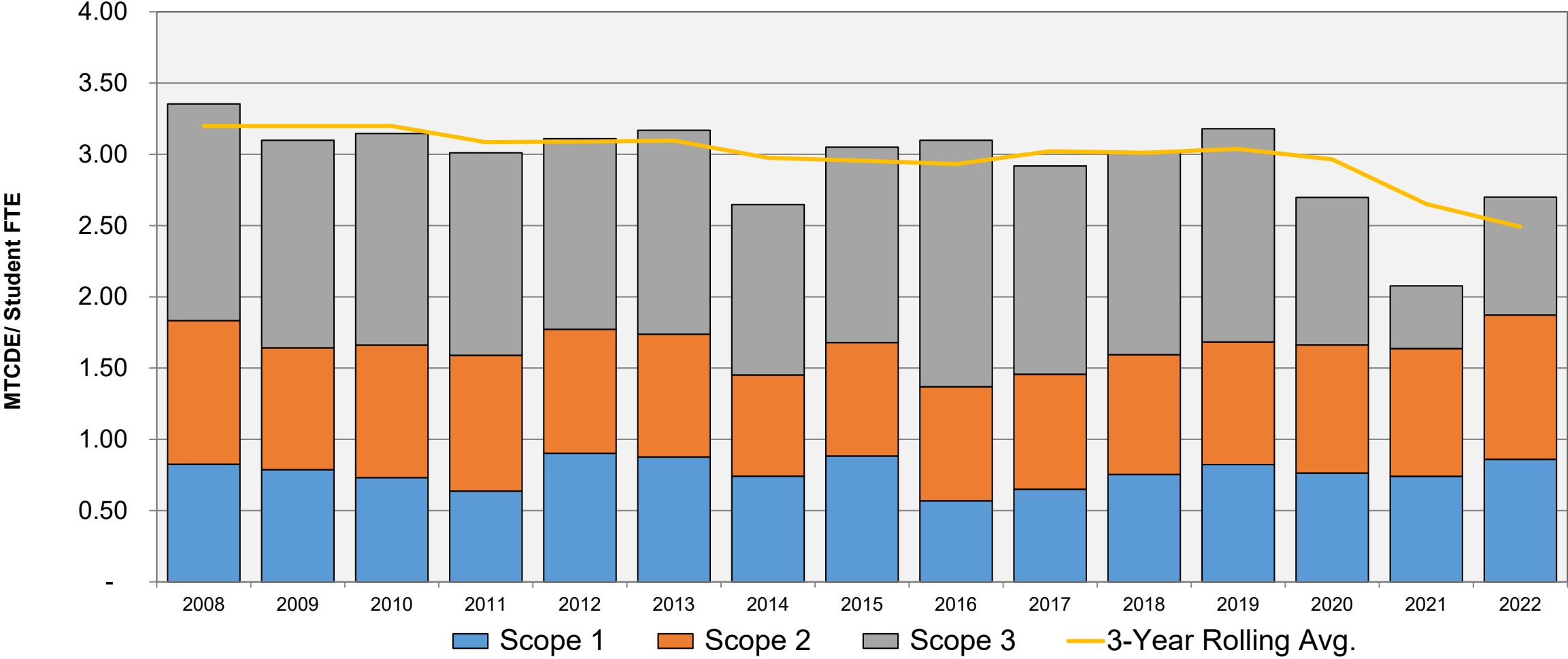
## Gross Emissions per 1,000 GSF Year Over Year



Additional square footage of 194 St. Paul Street pulls down normalized emissions metric in FY19; more typical campus activities resumed in FY22.

# Tracking Campus Emissions per Student

## Gross Emissions per Student Year Over Year



# Strategic Plan Implications

CHAMPLAIN COLLEGE

R/Evolutionary Champlain College

## 2030 Strategic Plan (Internal)

11.30.21

*Goal 6.5: Champlain will model its commitment to sustainability through efficient facilities and operations management and will **make progress toward carbon neutrality.***

- *Maintain campus facilities in “as-new” condition using sustainable, proactive and cost-effective management of resources that meets the varied needs and interests of our students.*

**What is next?** Develop a [Climate Action Plan](#) for Champlain College that makes [significant] progress toward carbon neutrality, as noted in Goal 6.5 of the Champlain College 2030 Strategic Plan and enacts the College’s mission and values.

### Mission

Champlain College educates adaptable thinkers, daring change-makers, and inclusive innovators who shape professions and inspire communities.

### Values

**INNOVATION:** We anticipate the future and thrive in dynamic conditions.

**ENGAGED LEARNING:** We commit to learning so everyone does meaningful work.

**INCLUSIVITY:** We practice inclusive teamwork and value diverse individual strengths.

**PRACTICALITY:** We provide experiential professional education.

**INTERCONNECTEDNESS:** We connect with people and places, from the local to the global.

# WHAT IS CLIMATE NEUTRALITY?



Second Nature defines climate neutrality as having no net carbon (greenhouse gas) emissions.

This is to be achieved by "minimizing carbon emissions as much as possible, and using carbon offsets or other measures to mitigate the remaining emissions."

Source: *Greener U's Navigating Steps to Carbon Neutrality*  
Slide deck from April 14, 2021: navigating the steps to climate neutrality

# Opportunities

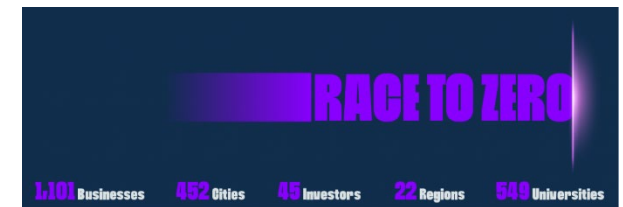
- City of Burlington's [Net Zero Energy Goals](#) announced Fall 2019



- BED needs to expend more efficiency funds, and they are willing to do so with us, including more funding for geothermal
- More Renewable Natural Gas available from Vermont Gas Systems ([slight cost increase](#), but also emissions decreases)

- National recognition and resources by

- [Improved STARS rating](#)
- signing onto the [Presidents' Climate Leadership Commitments](#) - Carbon Commitment *or*
- International recognition with [UN's Race to Zero](#)



# Notes

- For FY20-FY22, data input and analysis in [SIMAP](#) tool conducted by Christina Erickson – may have different calculations, formulas, etc. from prior consultant
- Used Location-Based Scope 2 Method in SIMAP (instead of Market-Based)