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Texas A&M University

FY16 Sustainability Final Presentation

May 2017

University of Toledo
University of Vermont
University of Washington
University of West Florida
University of Wisconsin - Madison
Vanderbilt University
Virginia Commonwealth University
Wake Forest University
Washburn University
Washington State University
Washington State University - Tri-Cities Campus
Washington State University - Vancouver
Washington University in St. Louis
Wayne State University
Wellesley College
Wesleyan University
West Chester University
West Virginia Health Science Center
West Virginia University
Western Oregon University
Westfield State University
Widener University
Williams College
Worcester Polytechnic Institute
Worcester State University

What We Do

Data, software and expertise for all phases of The Building Lifecycle

GORDIAN® for Operations

Optimize ongoing maintenance, repairs and operations.

GORDIAN® for Planning

Analyze and benchmark facilities against others in the industry.

GORDIAN® for Construction

Manage change orders and construction projects with proven systems and services.

GORDIAN® for Design

Create accurate estimates using industry-standard RSMeans data.

GORDIAN® for Procurement

Use detailed data and workflow tools to competitively contract construction.

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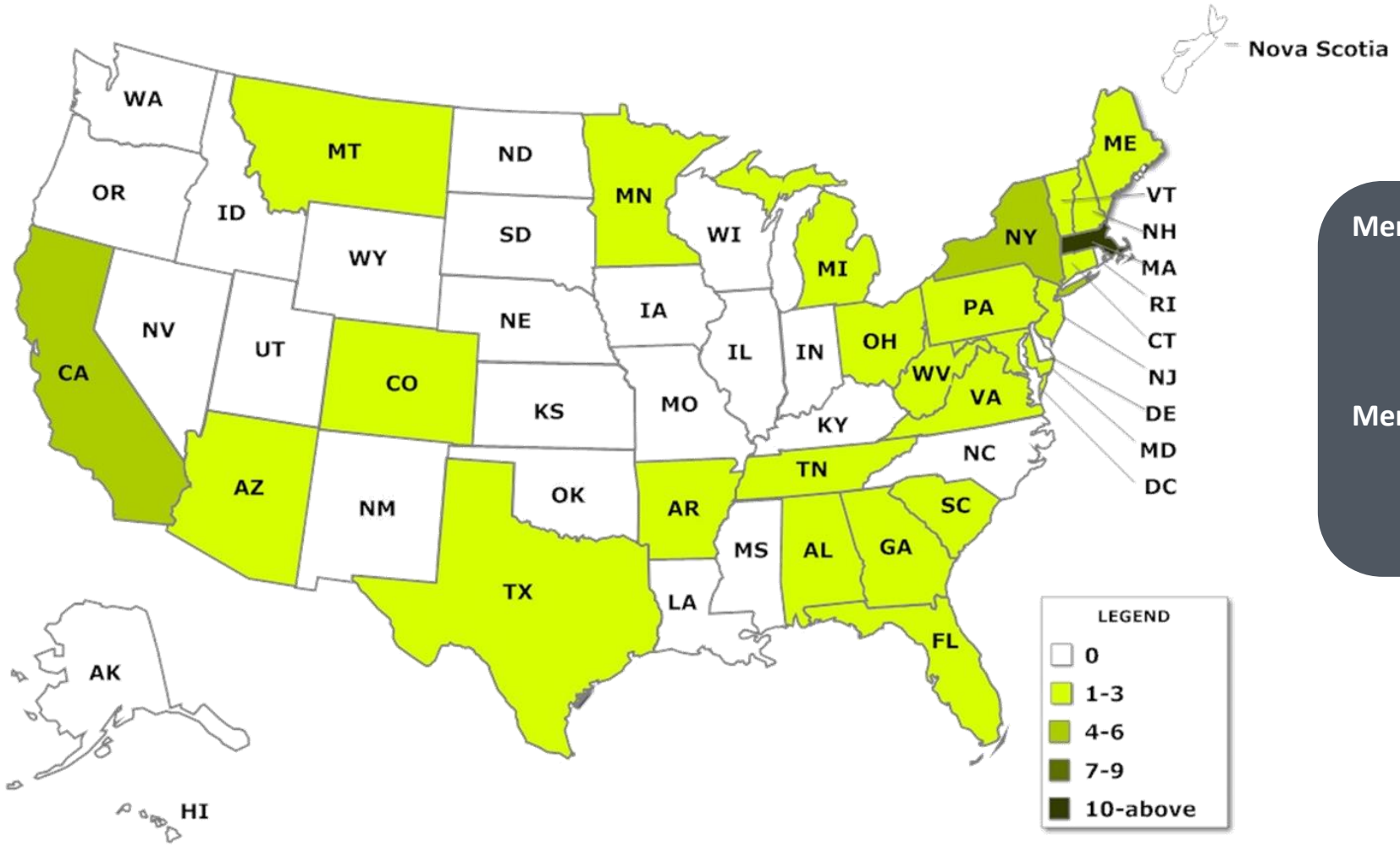
Sustainability Solutions Introduction

Who Else Partners With Sightlines?



Member Characteristics:

- 60% Private
- 40% Public
- 55% Signatories of ACUPCC
- 45% Charter Signatories

Members Diverse in:

- Size & Student Population
- Setting & Climate Zone
- Energy Sources & Uses

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TAMU's Peer Comparison Group

TAMU is not an ACUPCC signatory

Institution	Size	Technical Complexity (1-5)	Climate Zone	Urbanization
American University	2.8M GSF	3.8	3	Large City
Arizona State University	7.7M GSF	3.6	5	Urban Fringe of a Large City
Clemson University	4.2M GSF	3.4	4	Urban Fringe of a Mid-Size City
George Mason University	7.7M GSF	3.5	3	Urban Fringe of a Large City
The University of Alabama	14.3M GSF	3.3	5	Mid-Size City
University of Arkansas	4.1M GSF	3.2	4	Mid-Size City
University of Denver	4.7M GSF	2.9	2	Large City
Virginia Commonwealth University	7.1M GSF	3.2	4	Mid-Size City

Comparative Considerations

Size, technical complexity, region, geographic location, and setting are all factors included in the selection of peer institutions

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*Schools in **BOLD** are ACUPCC signatories*

Components of TAMU's Emissions Profile

Scope 1 Direct GHGs	Scope 2 Upstream GHGs	Scope 3 Indirect GHGs
• On-Campus Stationary (Cogen plant and other) • Vehicle Fleet Fuel • Refrigerants • Fertilizer	• Purchased Electricity	• Faculty/Staff/ Student Commuting • Directly Financed Air & Ground Travel • Study Abroad Travel • Solid Waste • Wastewater • Paper Purchasing • Transmission & Distribution Losses

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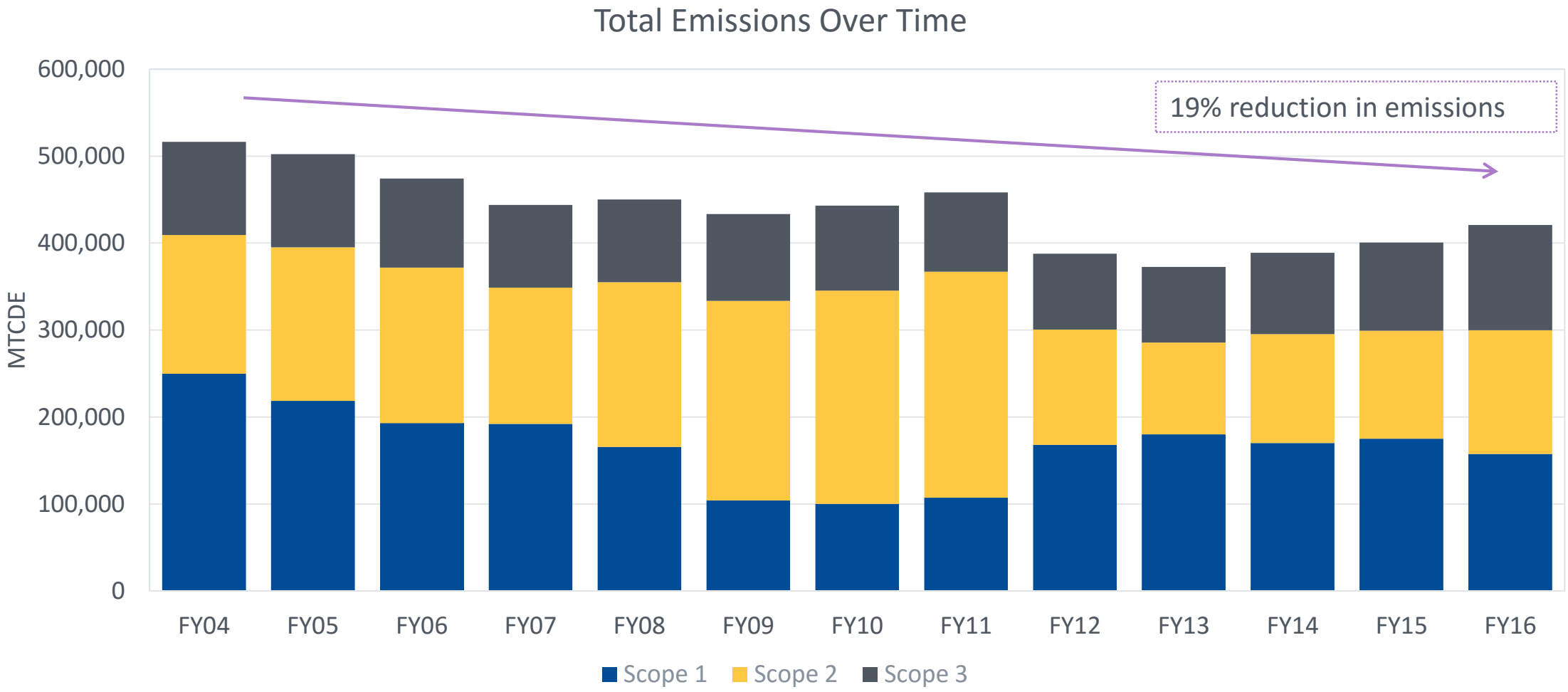
Emissions Summary

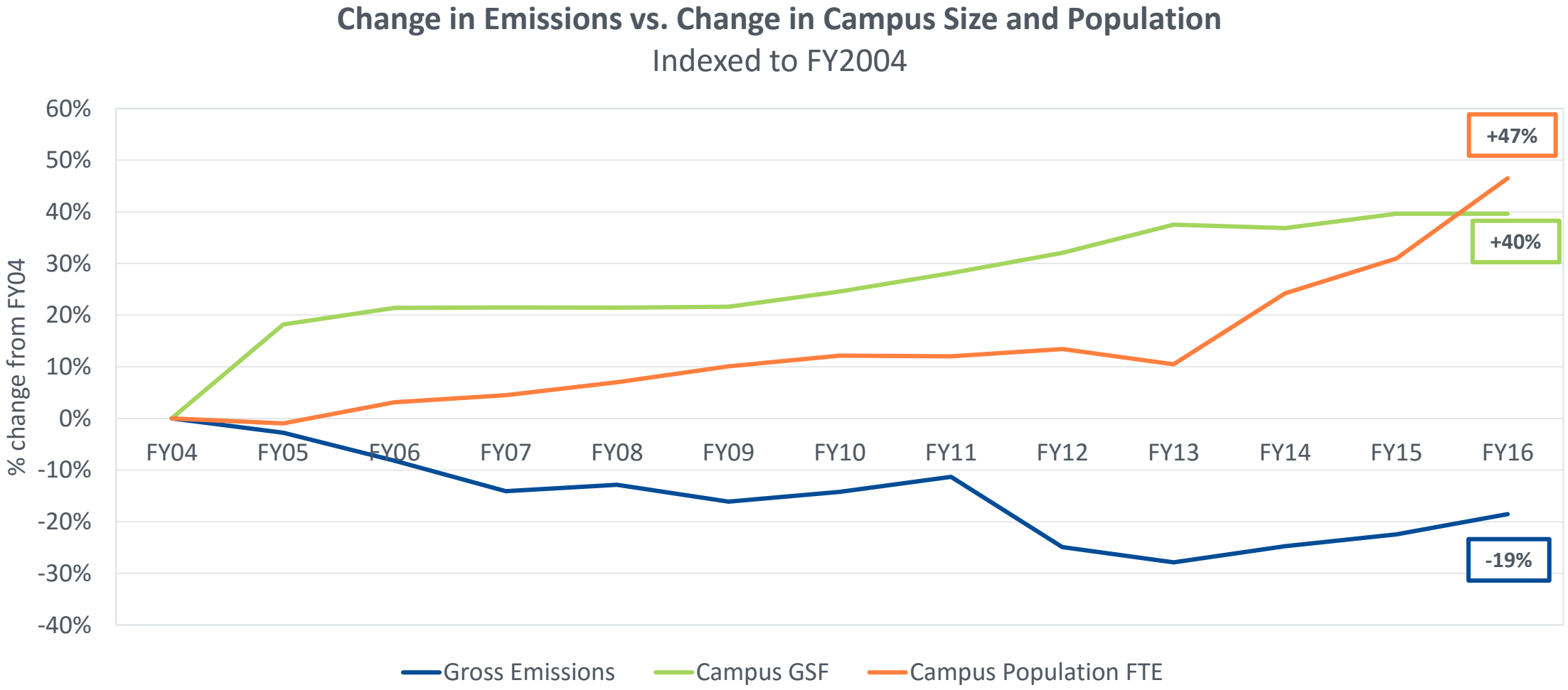
Overall Reduction in Emissions Since 2004

Emissions increasing since FY13



Great Improvements Despite Growing Campus

Emissions increasing with campus density since FY13



Benchmarking Emissions & Source Data

Two ways to normalize emissions for comparison

GHG Emissions per 1,000 GSF

Stresses intensity of operations.

$$\frac{\text{Gross GHG Emissions}}{\text{Total GSF in Footprint}} \times 1{,}000$$

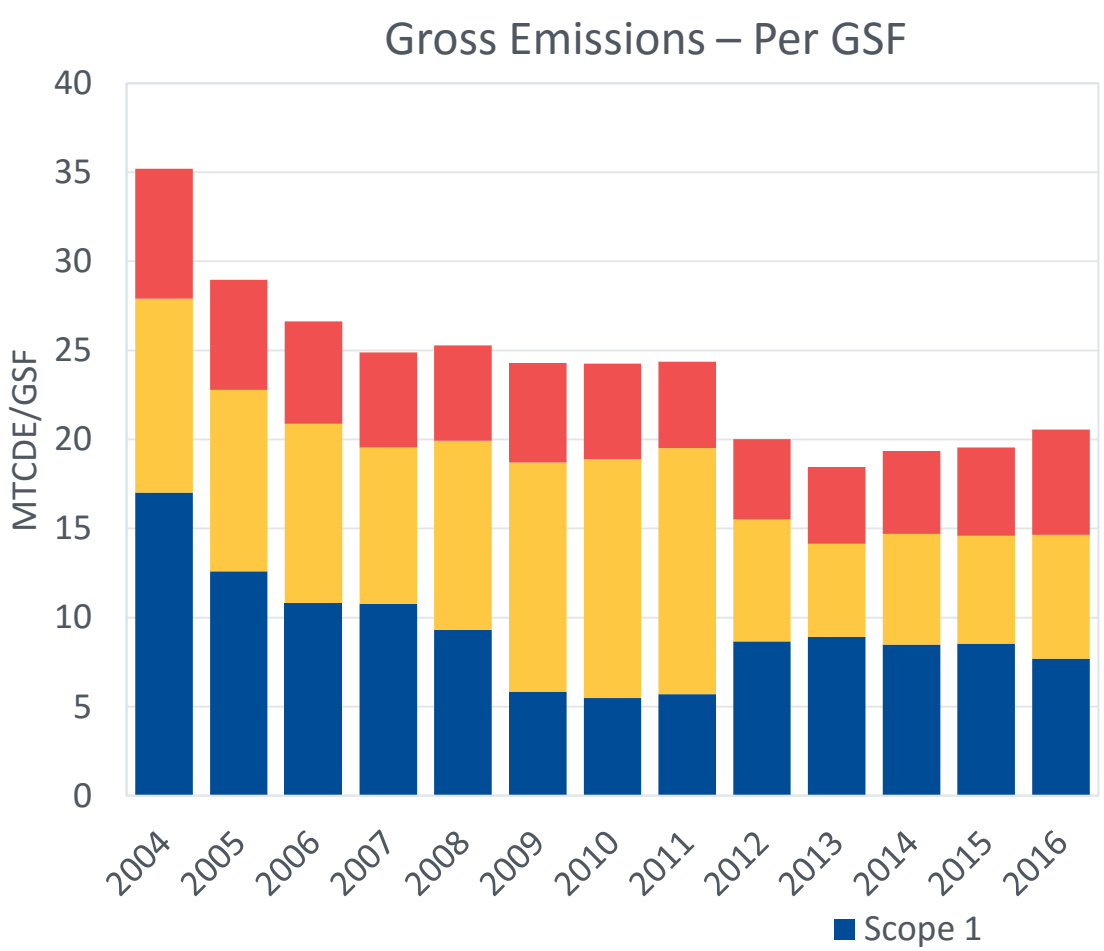
GHG Emissions per Student FTE

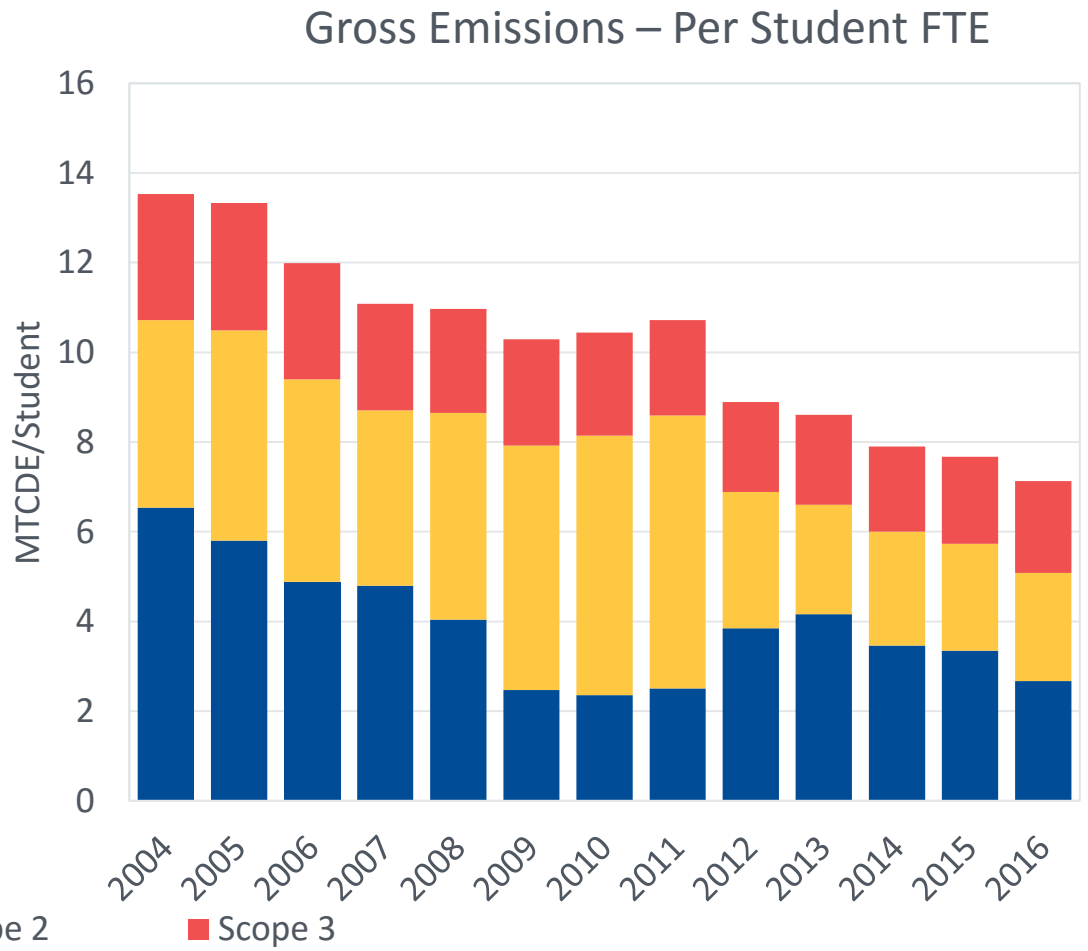
Stresses efficient use of space.

$$\frac{\text{Gross GHG Emissions}}{\text{Total Student FTE}}$$

Historical Trending of Normalized TAMU Emissions

More substantial reduction when looking at emissions per student educated





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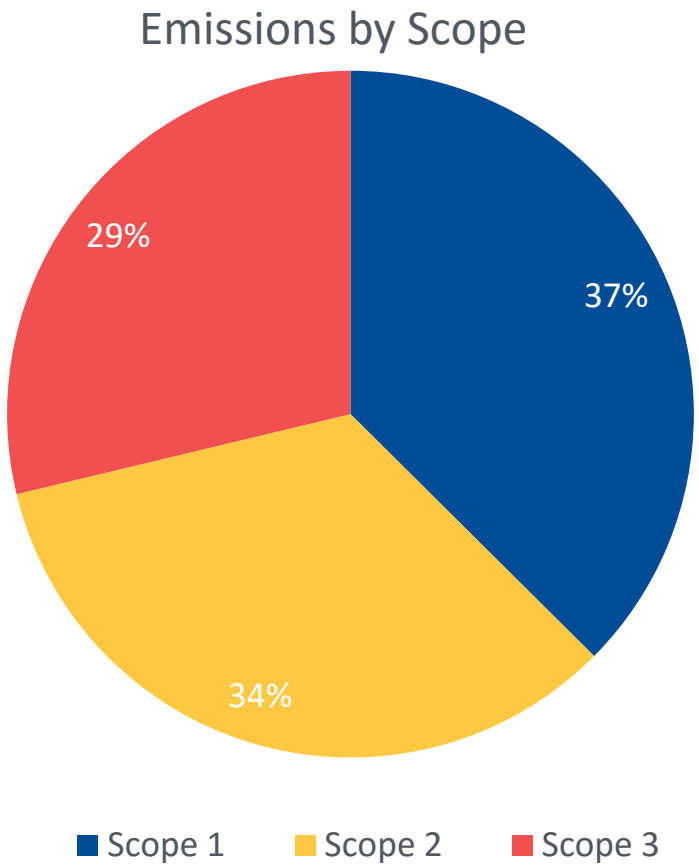
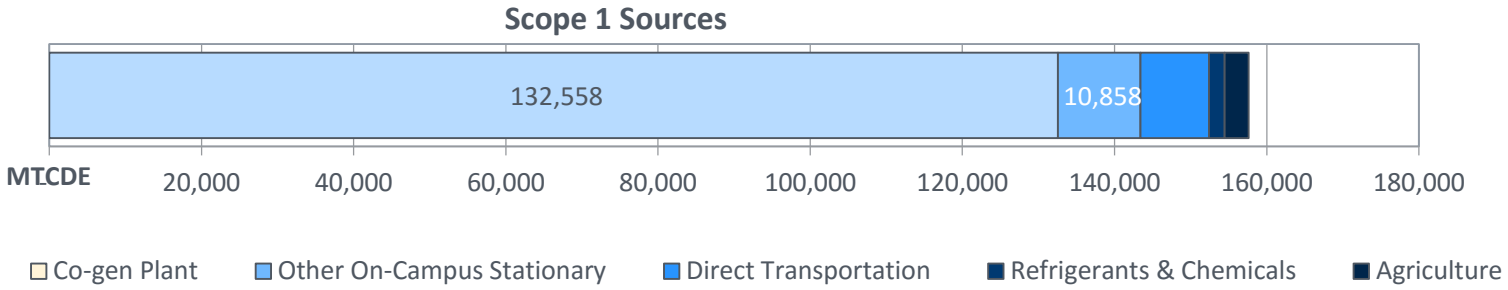
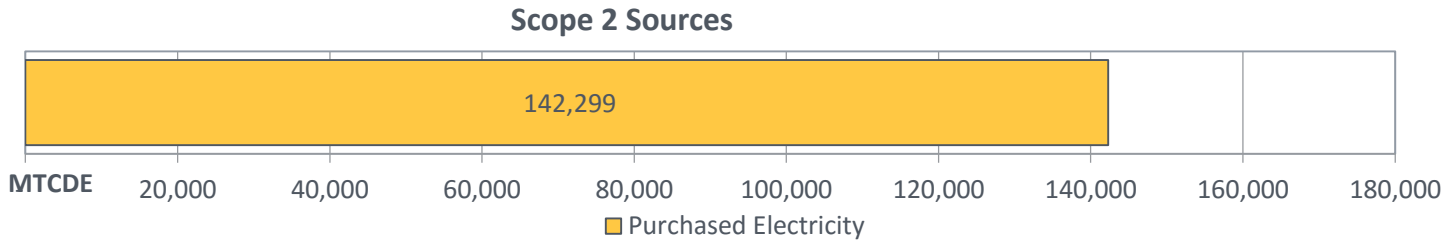
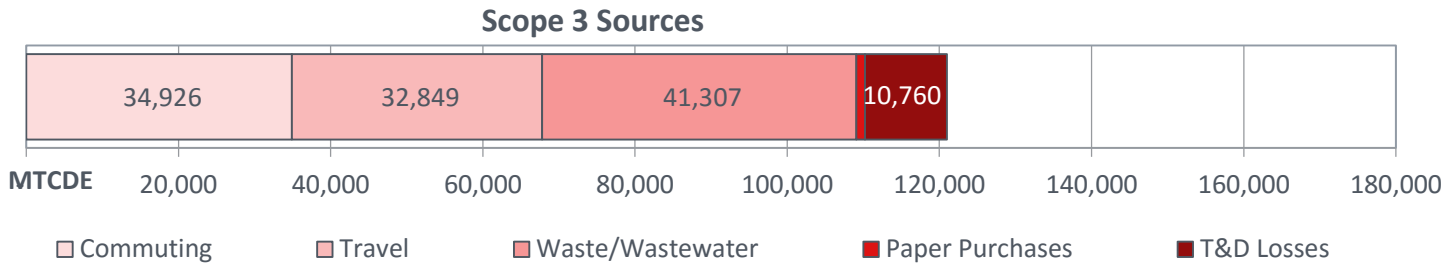
Distribution of Emissions by Level of Control

FY2016 emissions by source and scope









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Emissions Comparison

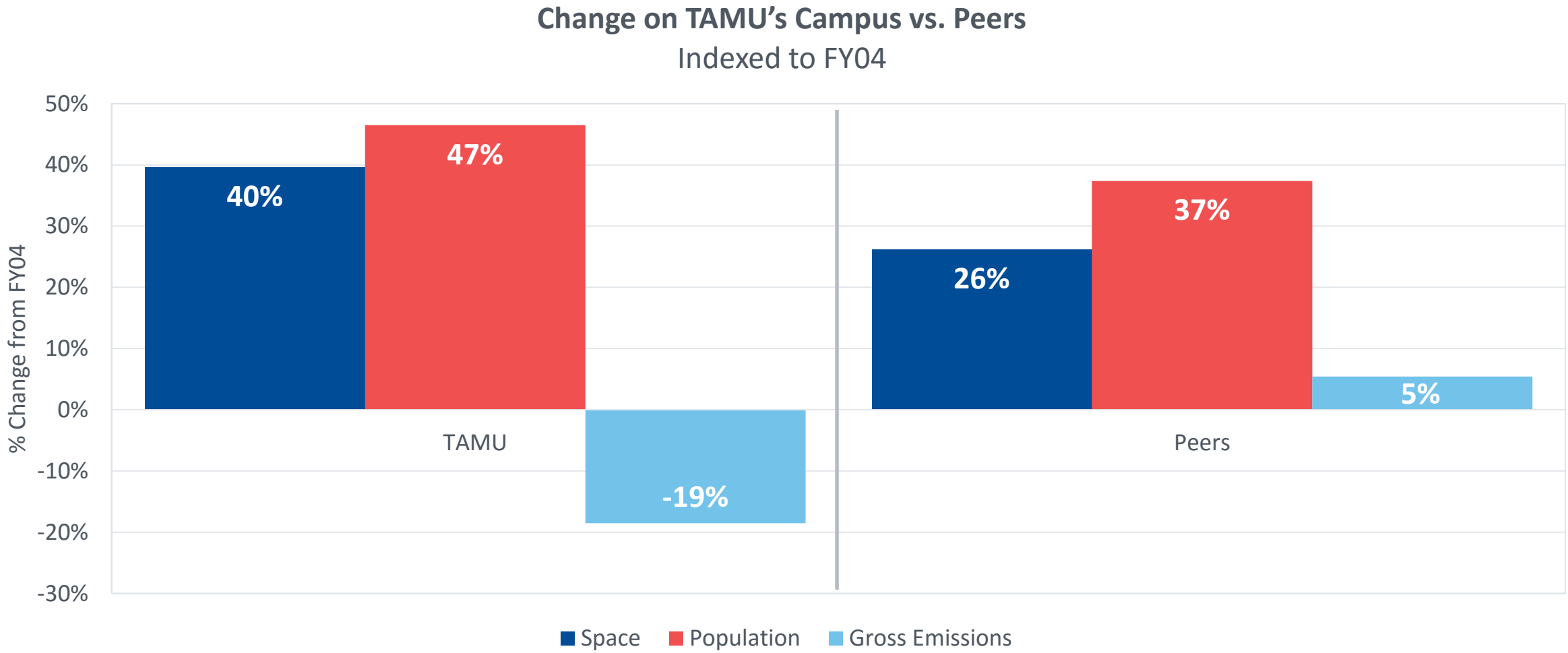
TAMU is Least Dense Compared to Peers

Density factor has an effect on emissions comparisons

Ordered by Density Factor

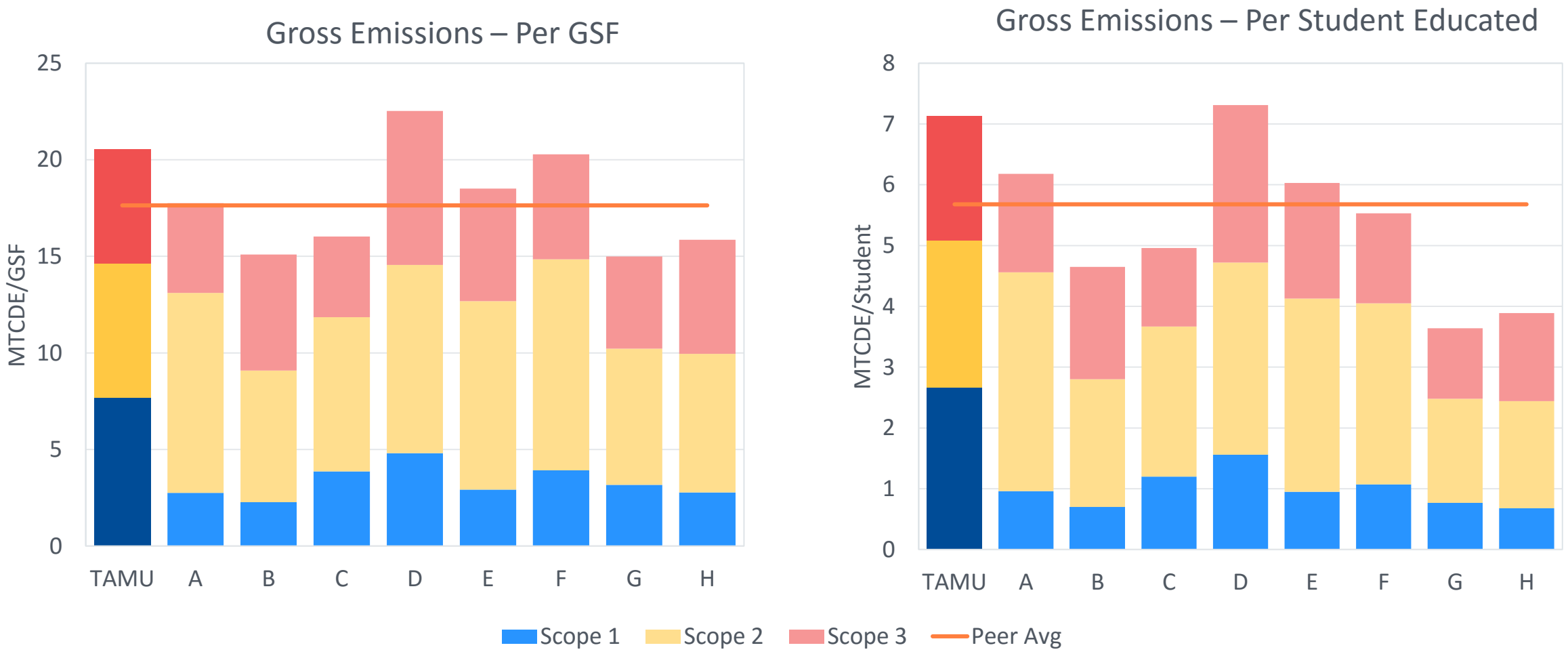
TAMU Reduced Emissions at Greater Rate Than Peers

TAMU added more to campus space and population while decreasing emissions



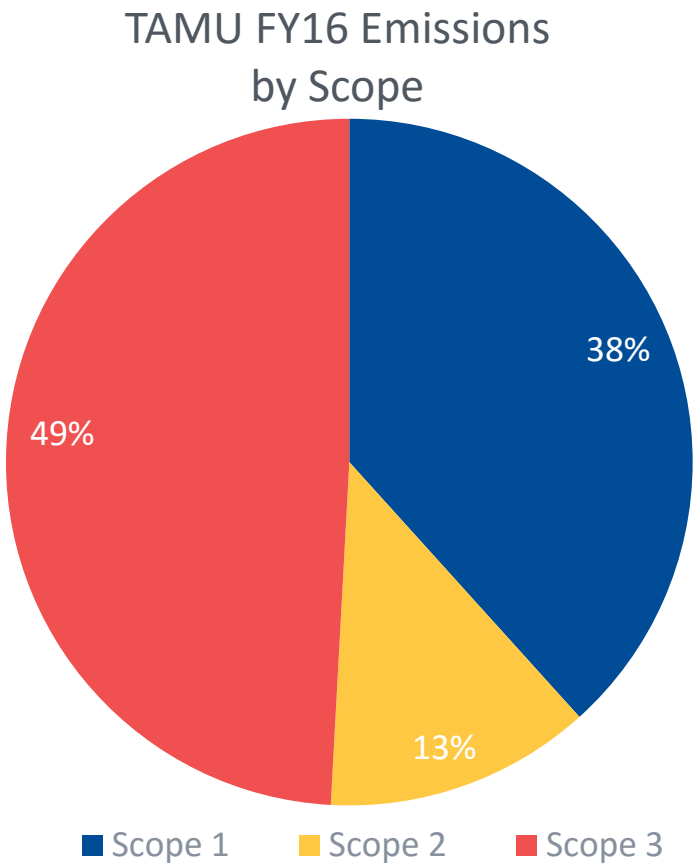
TAMU Has High Emissions Compared to Peers

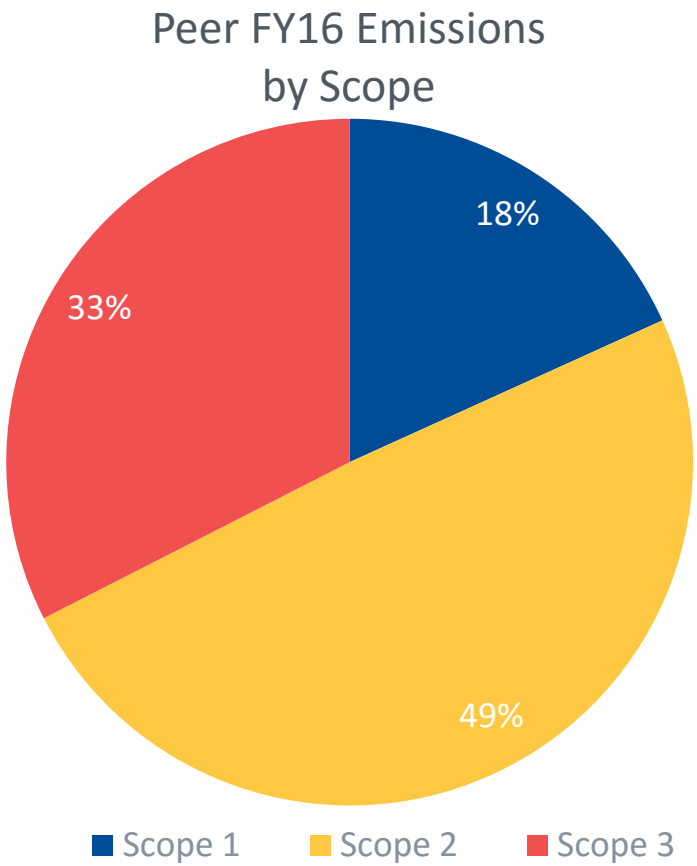
While being less dense, TAMU still has more emissions than peers



Ordered by Density Factor

Cogeneration Drives TAMU Scope 1 Emissions





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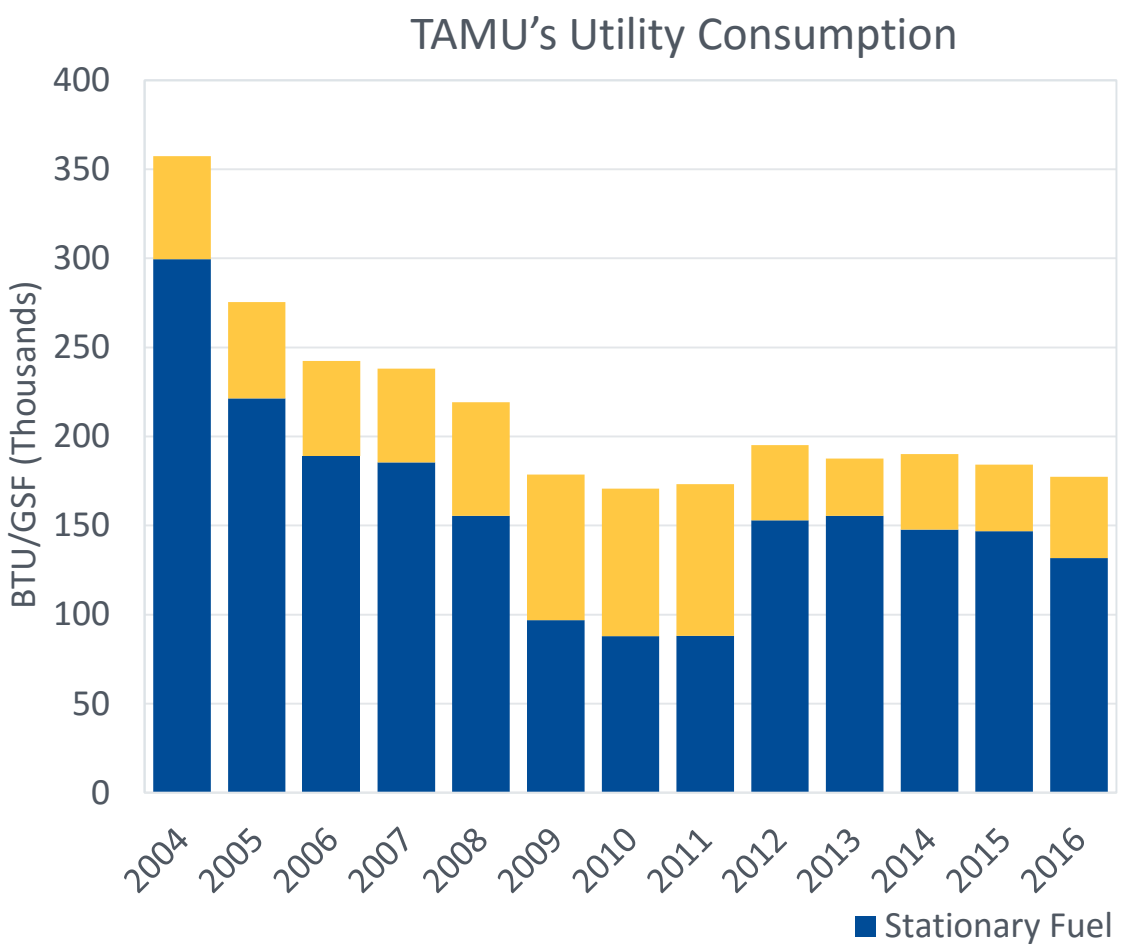
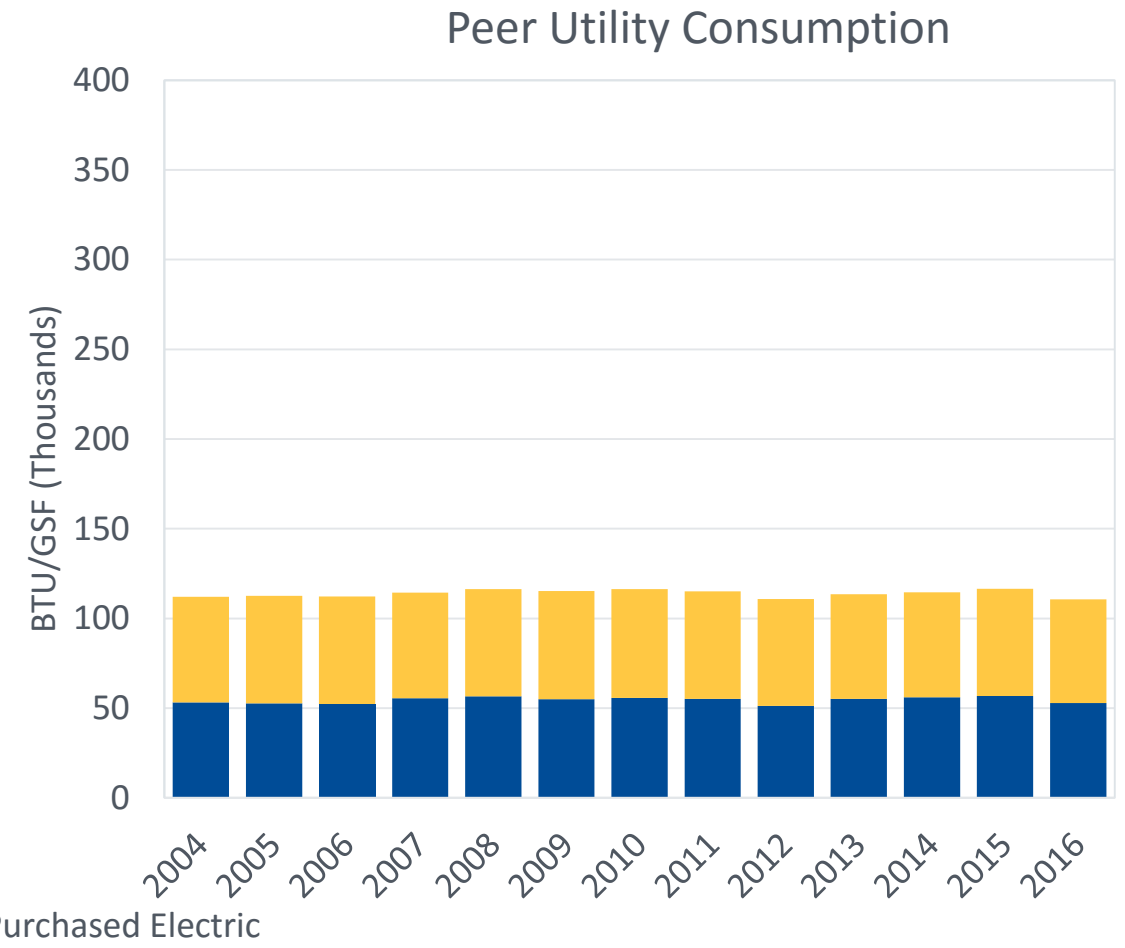
Utilities – Scope 1 & 2

TAMU's Energy Consumption Higher than Peers

Total energy, not regional adjusted





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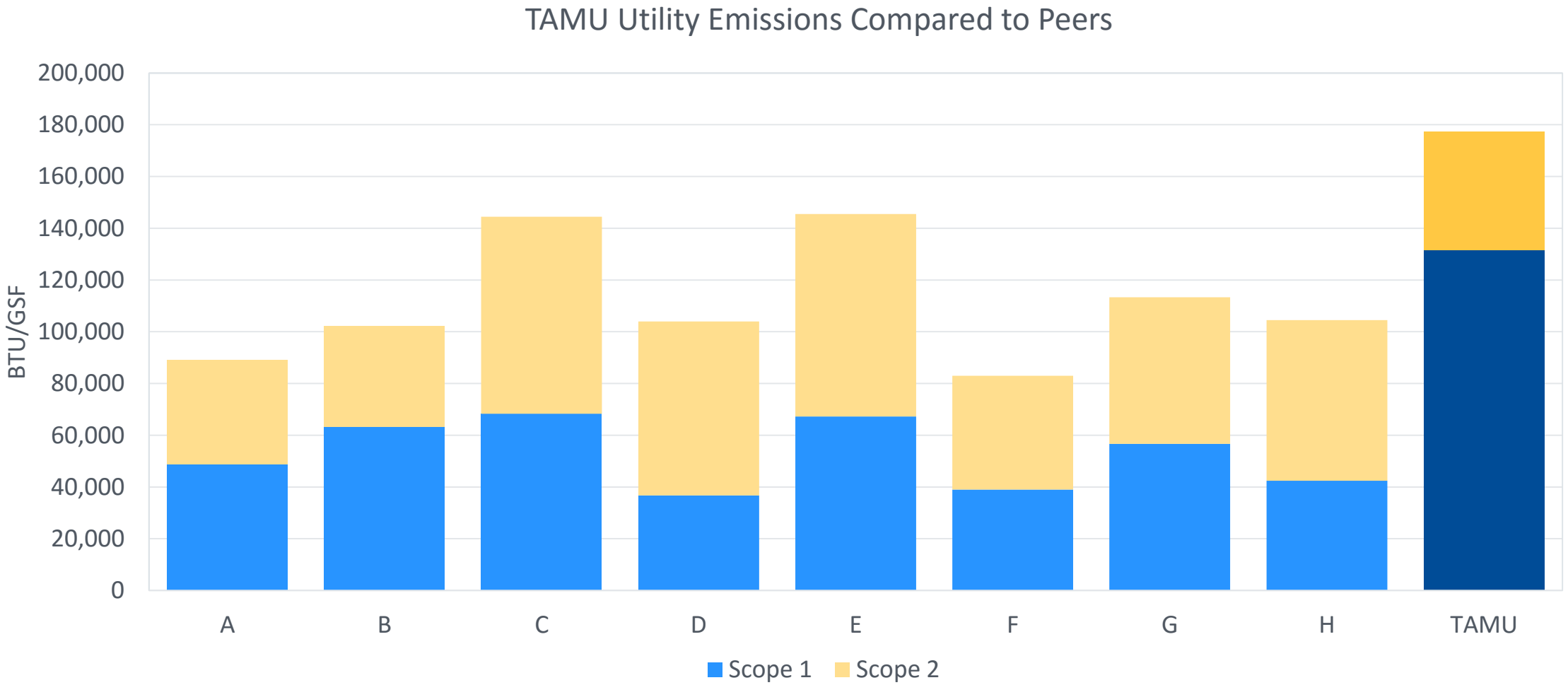
Putting Technical Complexity Context

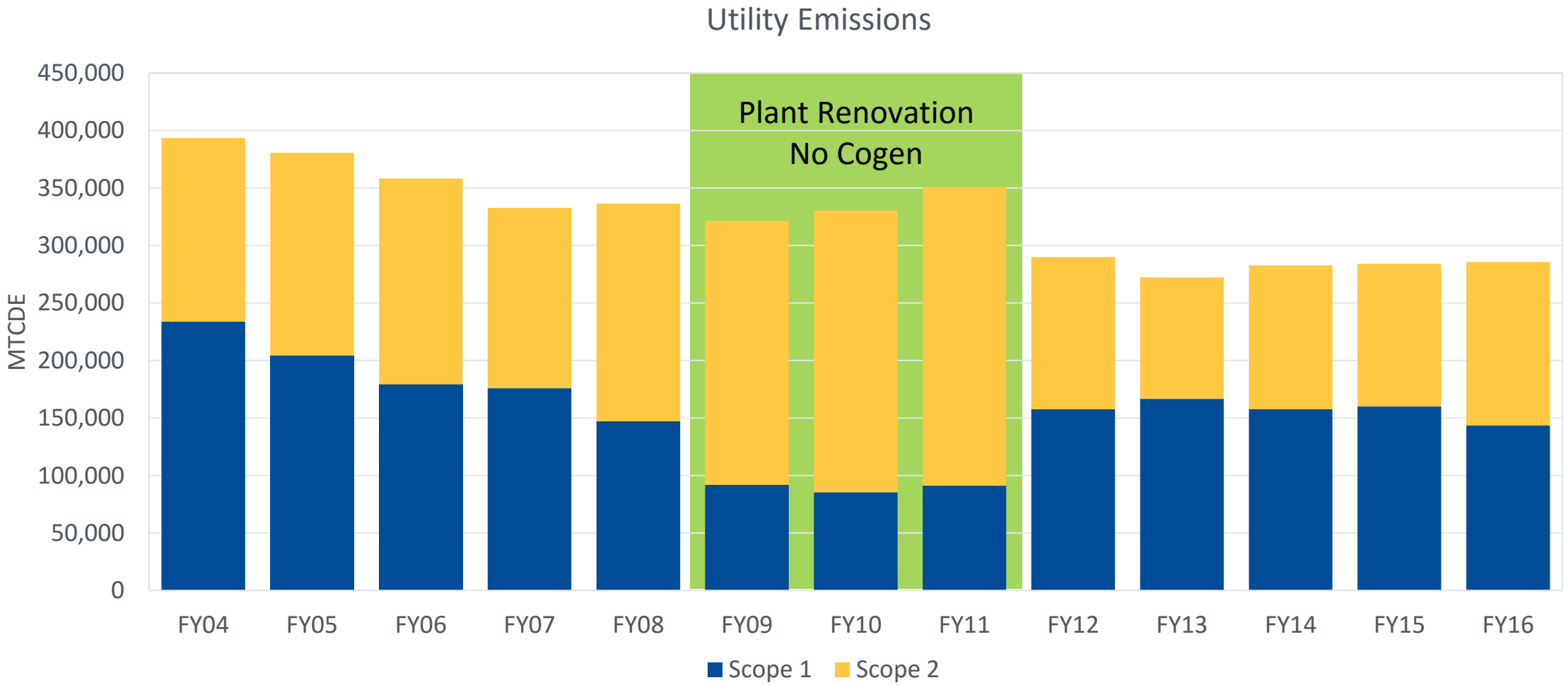
TAMU has the most energy consumption even though less technically complex



Ordered by Technical Complexity

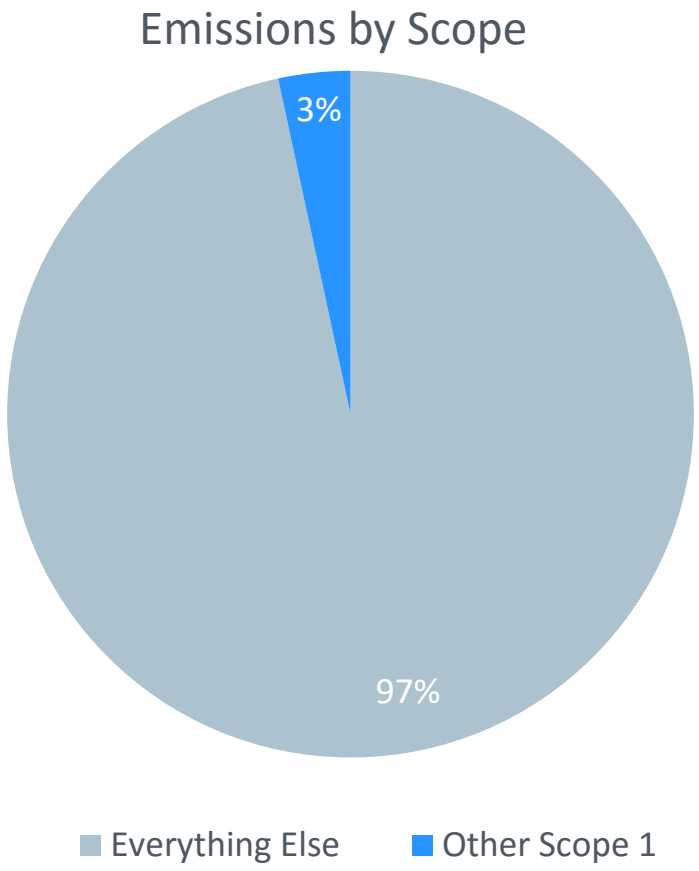
Total Utility Emissions Decreased 27%

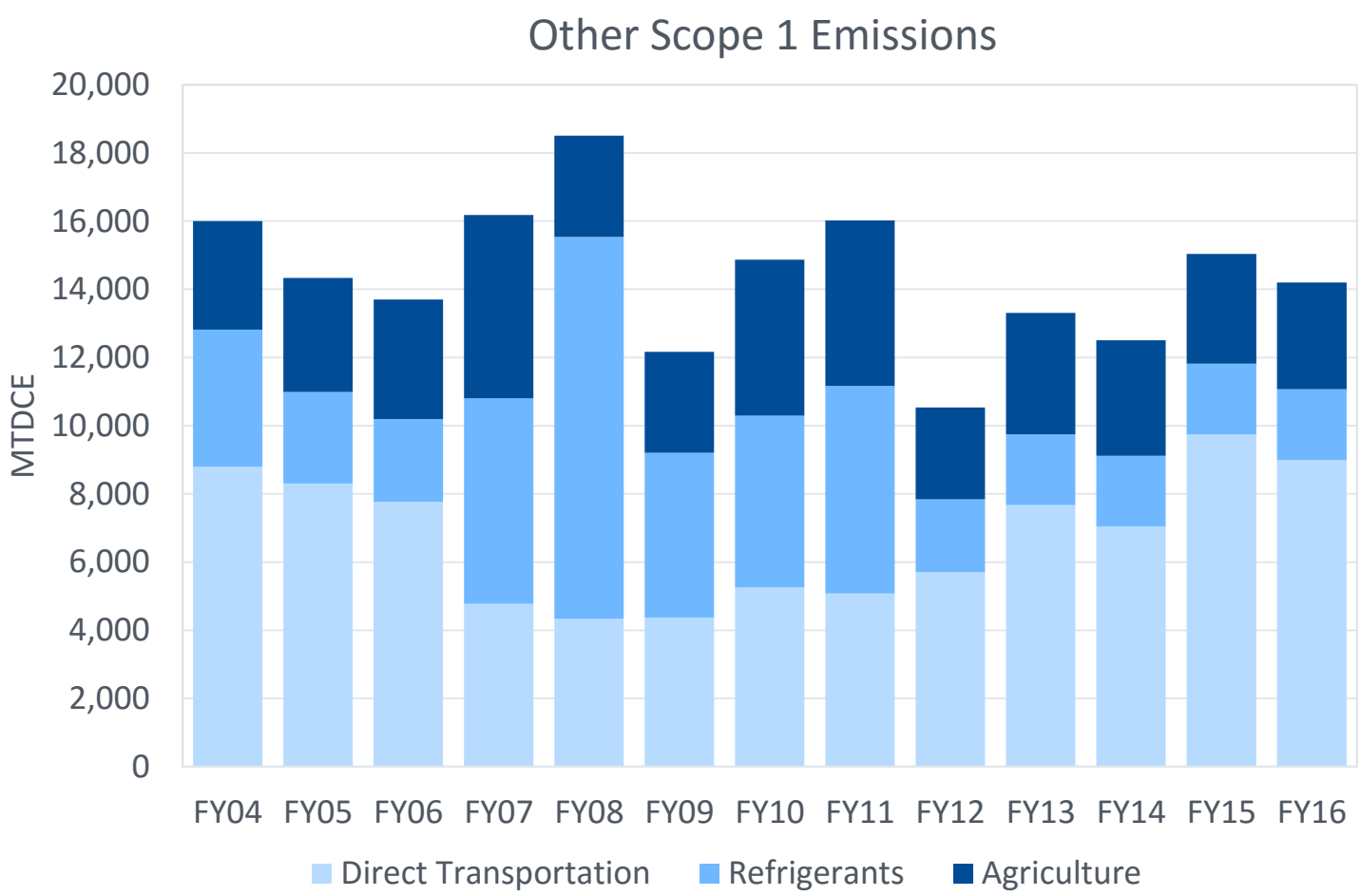
Continued decreases through both consumption and intensity improvements



Other Scope 1 Emissions Are Small Portion of Total

Direct Transportation is largest contributor to other Scope 1 Emissions in FY16





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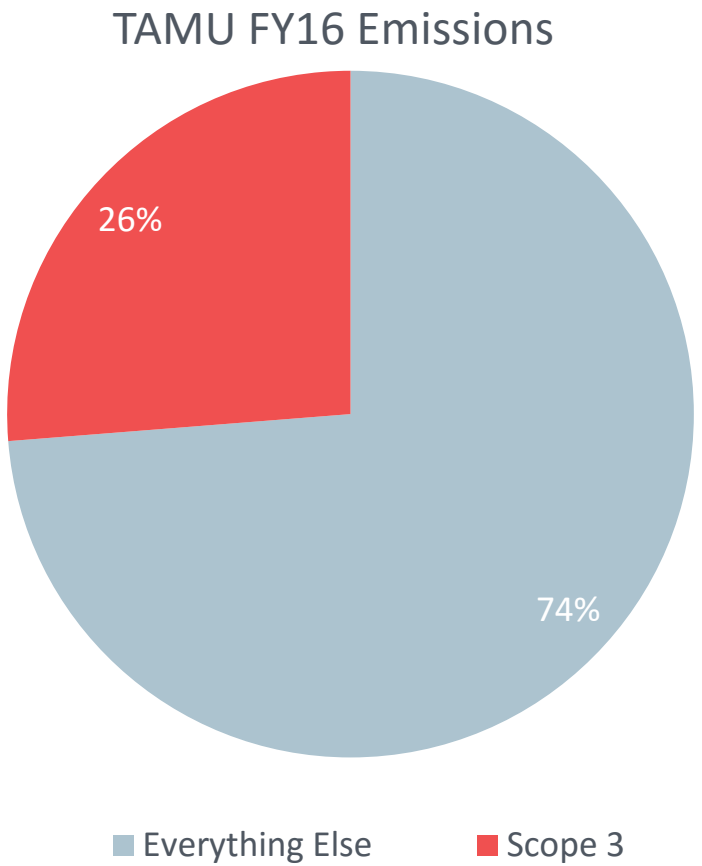
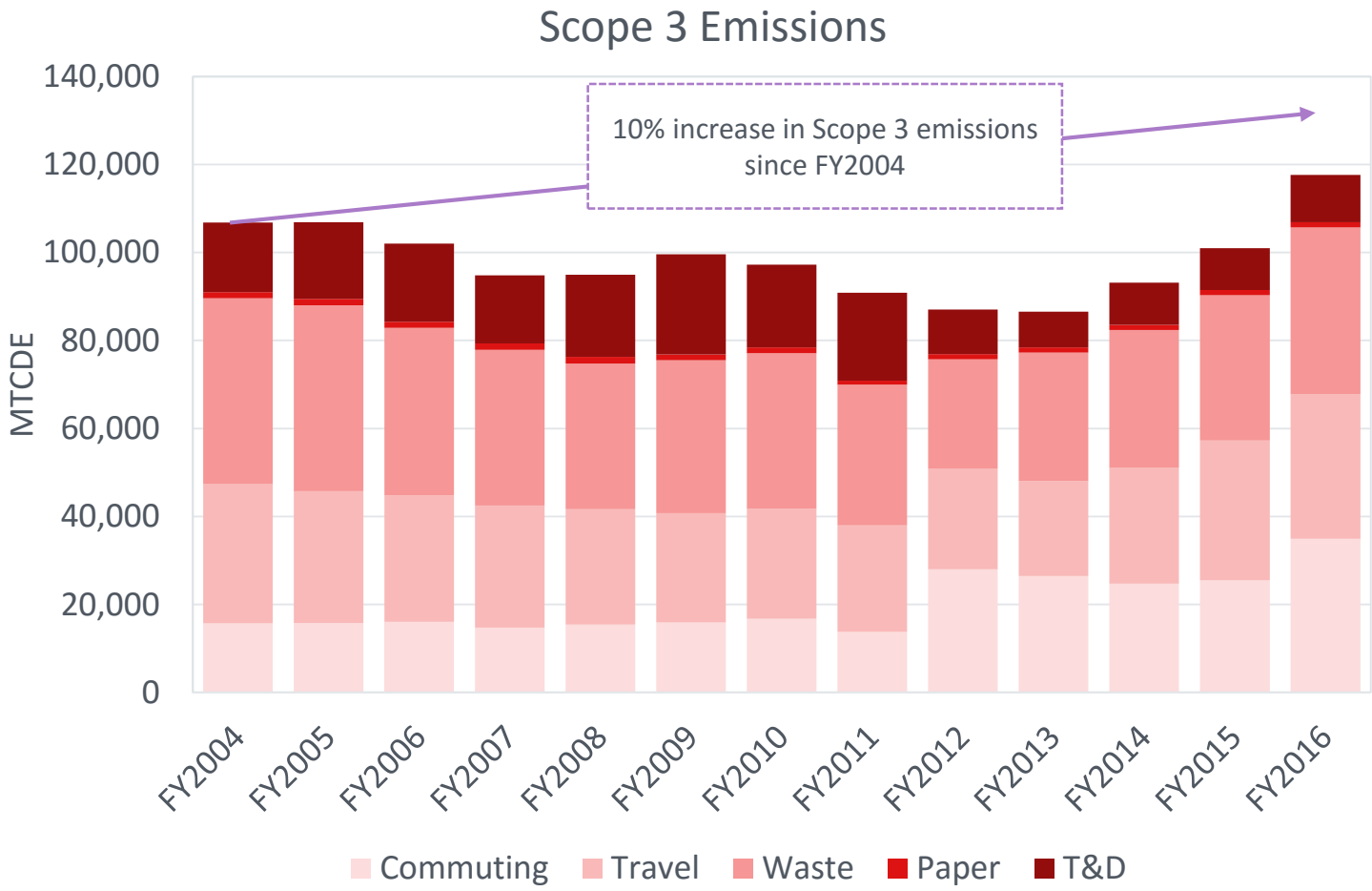
Scope 3

Scope 3 Emissions Have Increased Since FY13

Commuting emissions have doubled since FY04





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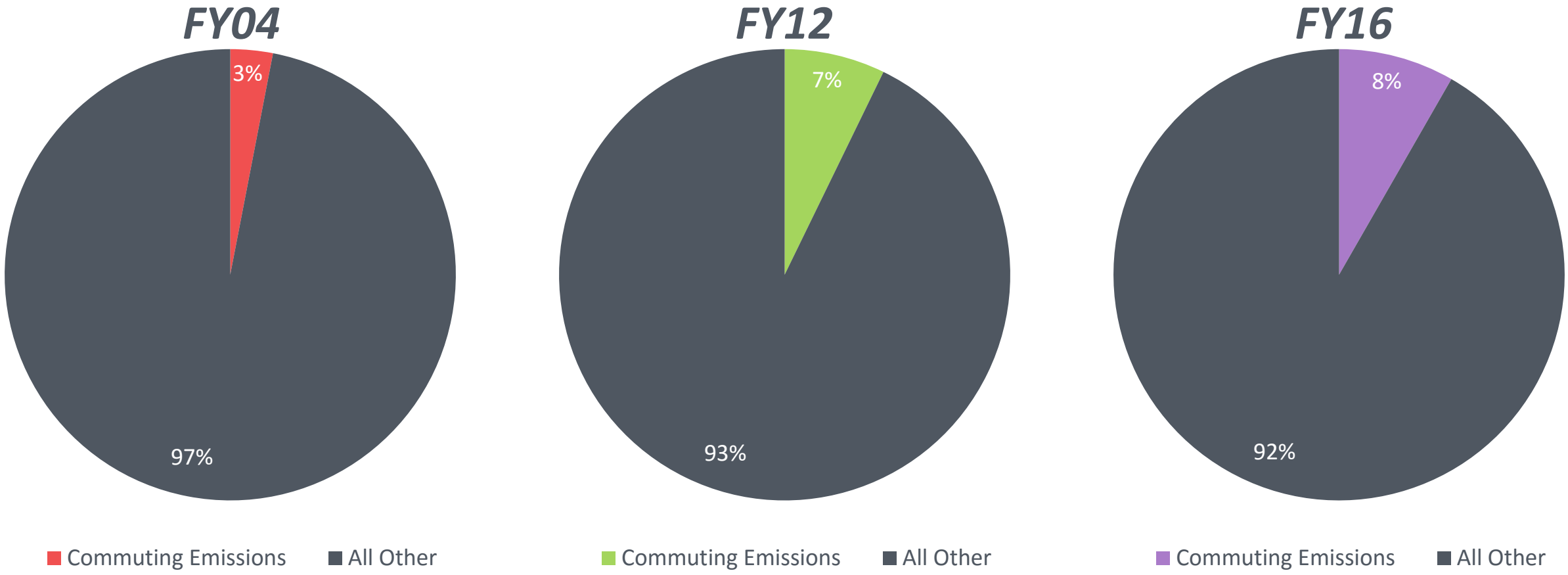
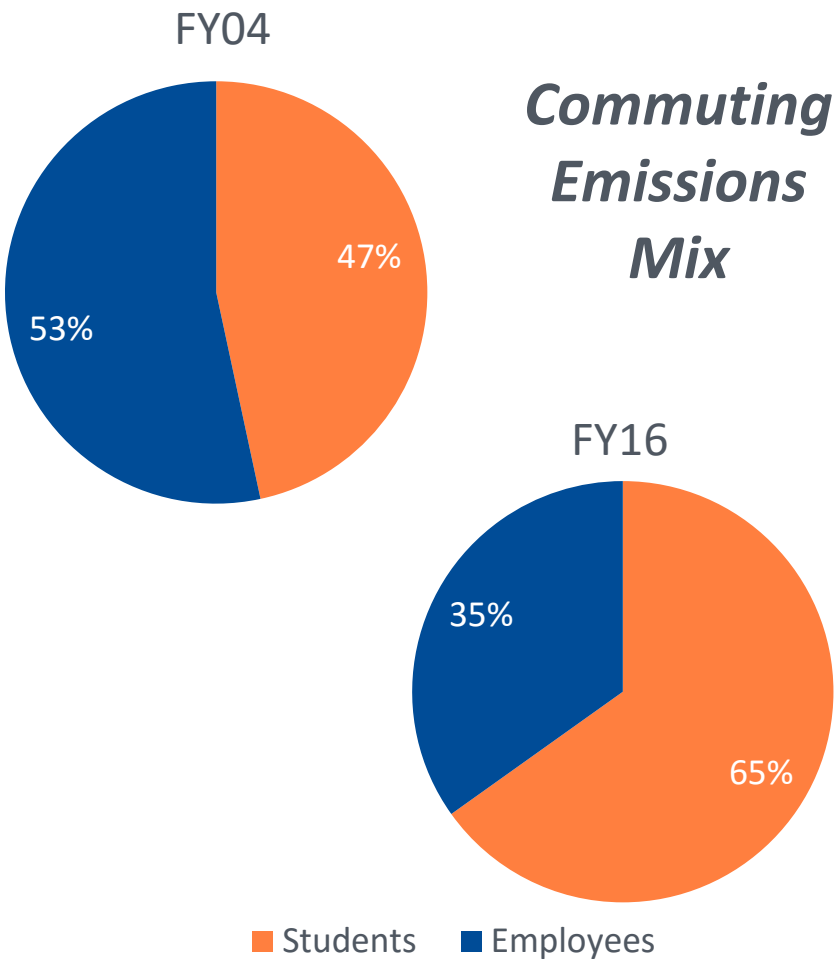
Updated Commuting Data

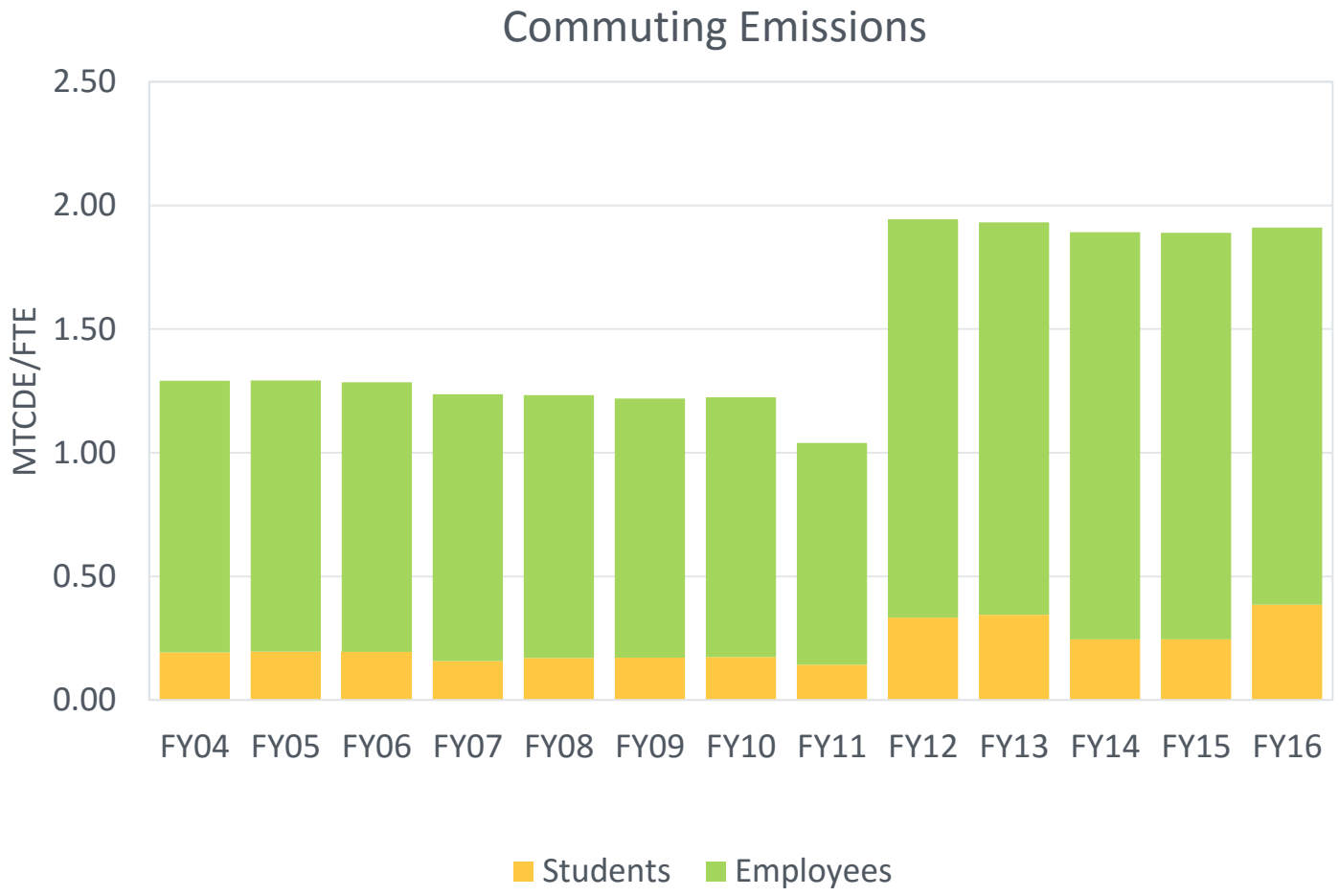
Commuting emissions make up larger portion of emissions mix



Student vs. Employee Commuting Emissions

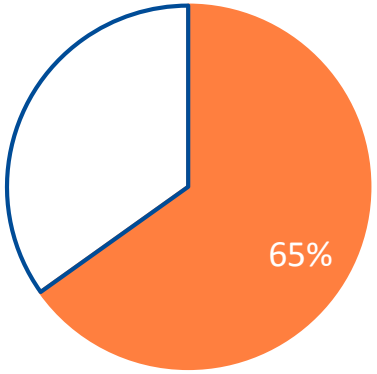
Students contribution fewer emissions relating to commuting





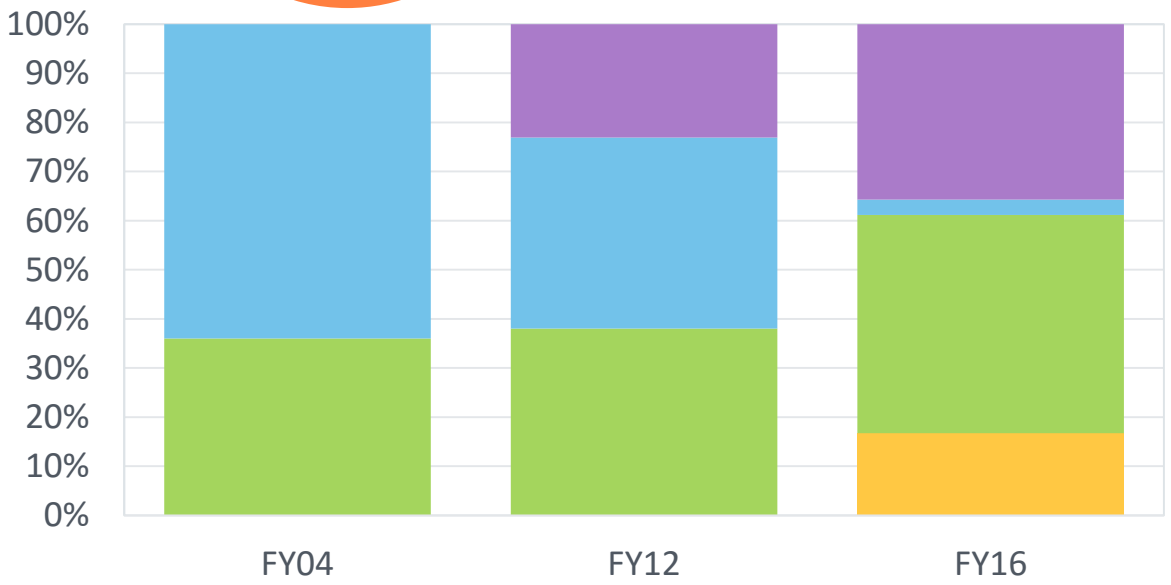
Students Are Most Carbon Intensive Over Time

FY16 Commuting Emissions: 34,926 MTCDE



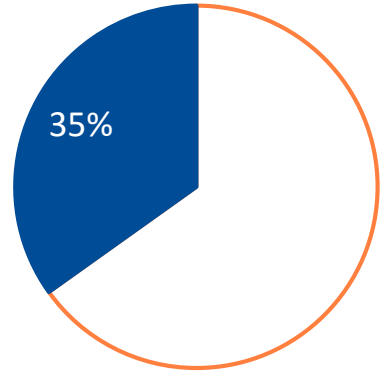
Student commuting Mix

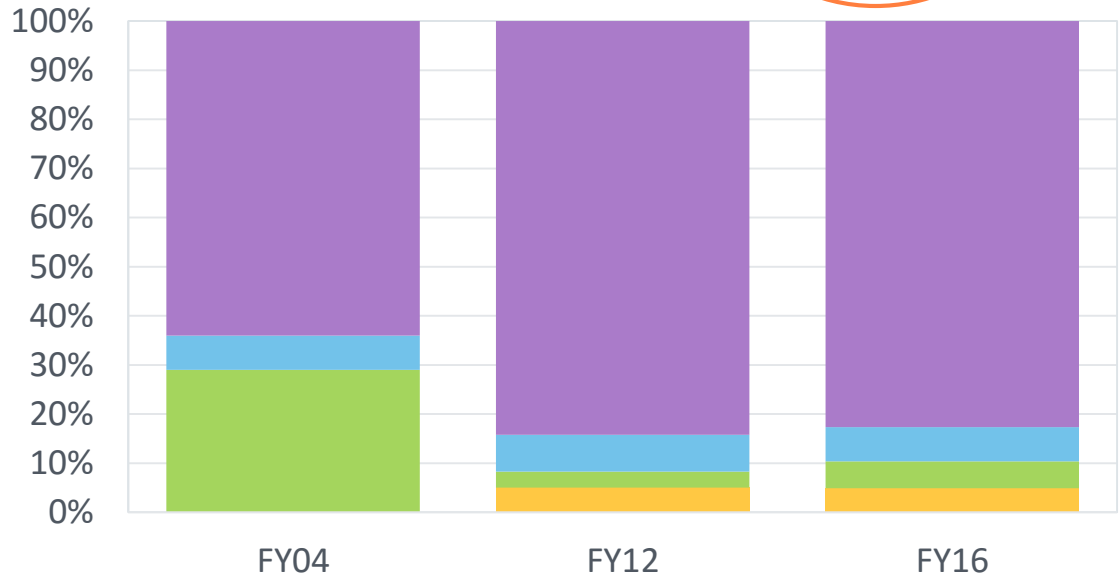
Commuting Distance:
FY04: 5 mi
FY12: 8 mi
FY16: 5 mi



Employee commuting Mix

Commuting Distance:
FY04: 5 mi
FY12: 9 mi
FY16: 6 mi





Carbon Free Mass Transit Carpool Drive Alone

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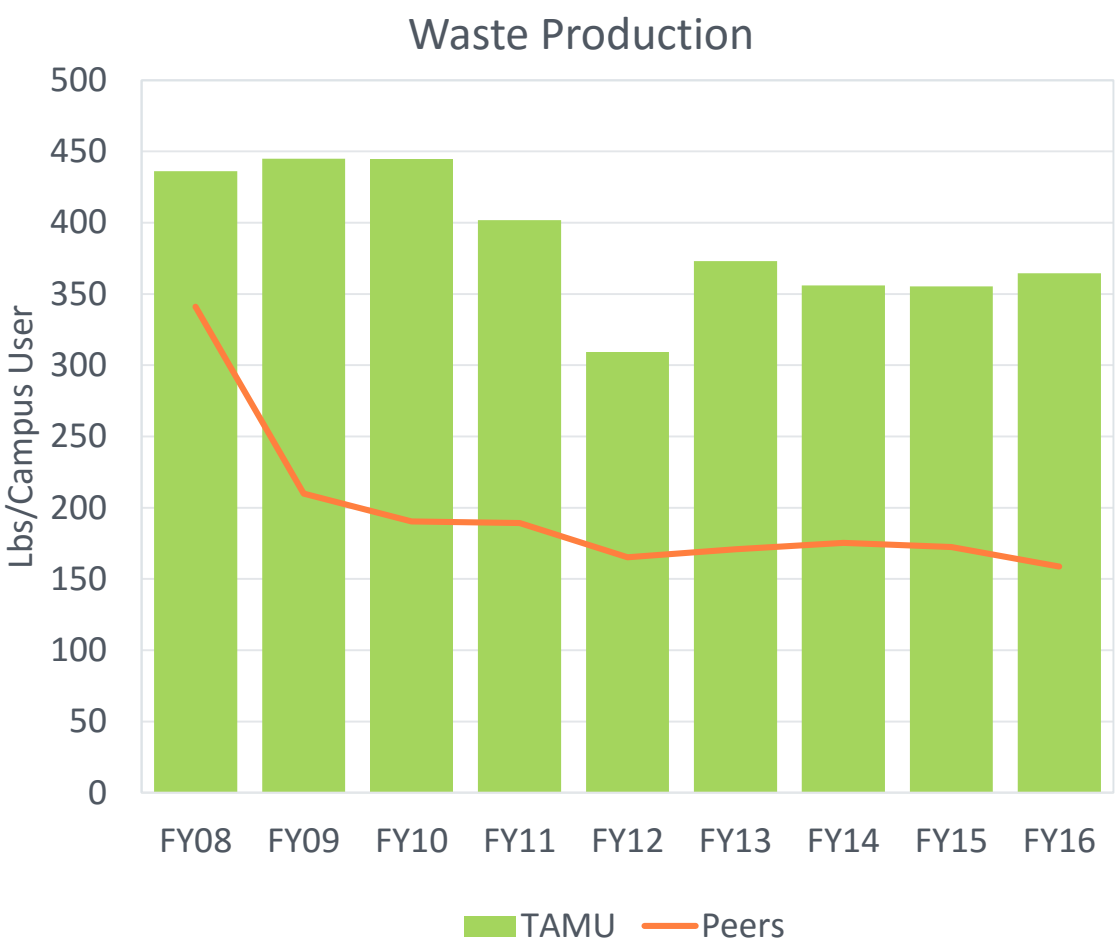
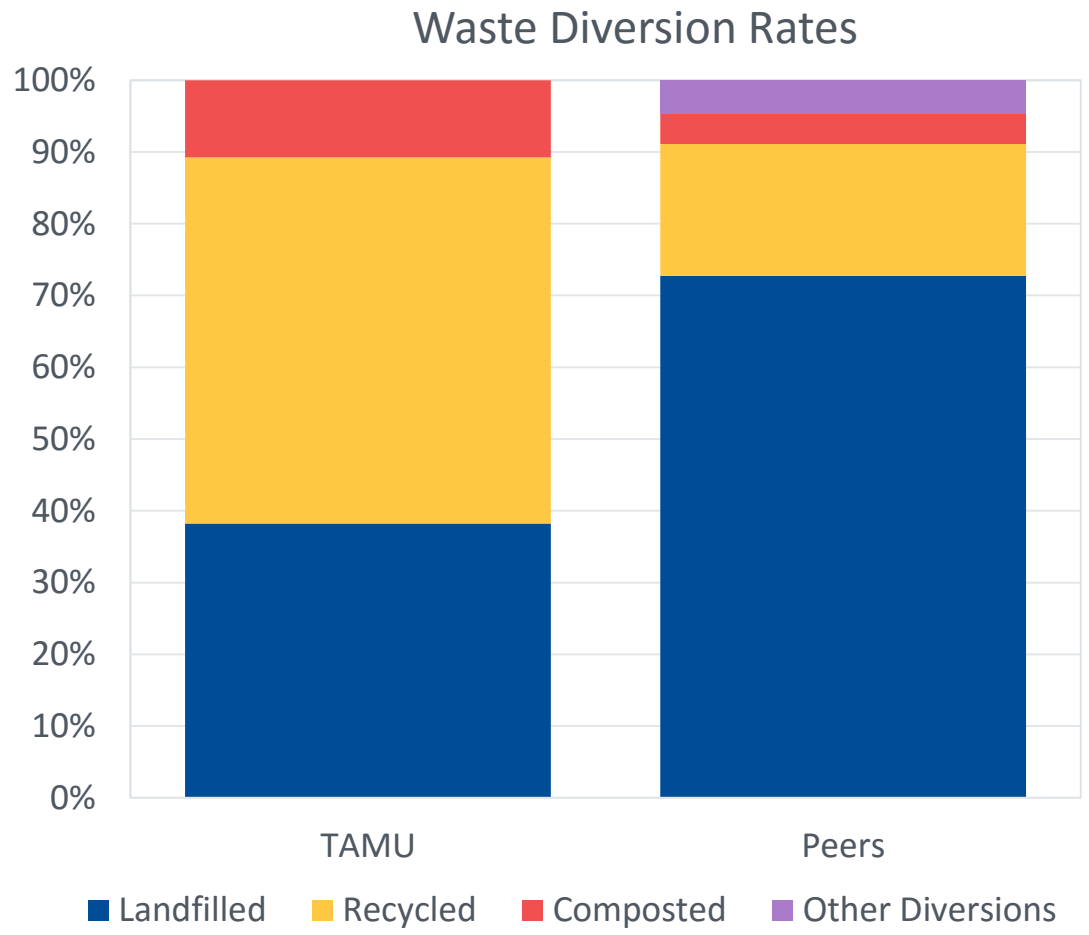
Waste Profile

TAMU's Has A Larger Waste Profile Than Peers





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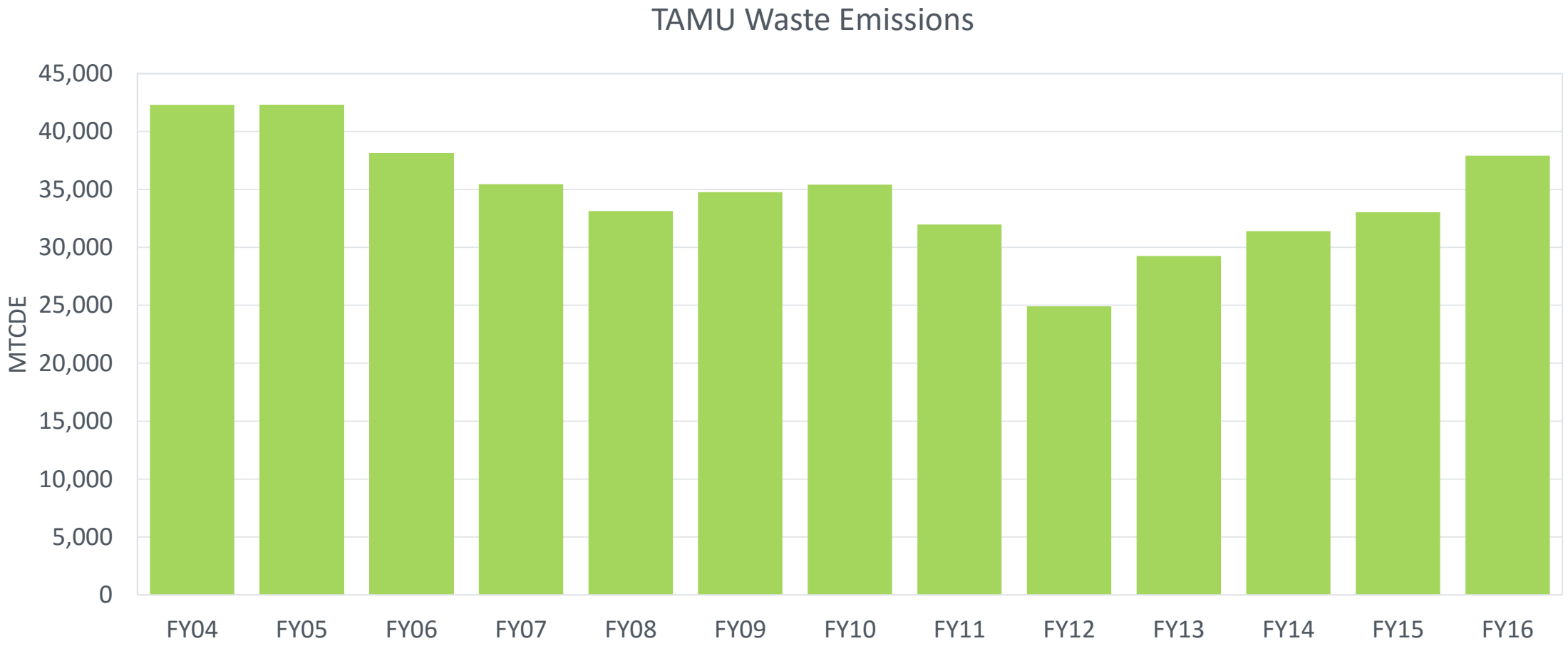
Total Waste Emissions are Increasing

FY16 waste emissions are back to FY06 levels



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