

2020 Sustainability Master Plan Update

June 7, 2024 | Michael B. Cline



Administrative Operations

Purdue Sustainability: Recent Recognition

2024 QS World University

Ranked #12 in the U.S and #93 globally for sustainability in higher education

2022 CHP Project of the Year Award from the Combined Heat and Power Alliance

Received with Duke Energy for emissions reductions, reliability and efficiency

2023 AASHE STARS Silver

Earned STARS Silver rating from the Association for the Advancement of Sustainability in Higher Education (AASHE)

U.S. EPA Combined Heat and Power Partnership Certificates of Avoided Greenhouse Gas Emissions

Received annually since 2012

2023 U.S. Department of Education Green Ribbon School

Recognized for a holistic approach to sustainability with a commitment to a sustainable campus

Tree Campus USA

Received annually since 2009

2020 Sustainability Master Plan

Administrative Operations

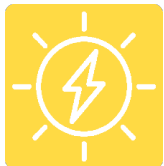
ENERGY



E-1 Cut Carbon Emissions in Half



E-2 No Net Gain



E-3 Pursue 500kW Renewable Energy

WATER



W-1 Reduce Water by 30%



W-2 Strategy to Eliminate the CSO

MATERIALS



M-1 Recycle Half our Waste



M-2 Recycle 75% + Construction Waste



M-3 Recycle All Institutional e-Waste

BUILDINGS



B-1 LEED Silver for New Buildings > \$10M



B-2 High Performance Requirements for Building Renovations < \$10M

GROUNDS



G-1 Plant One Tree per Day



G-2 Sustainable Landscapes for Purdue

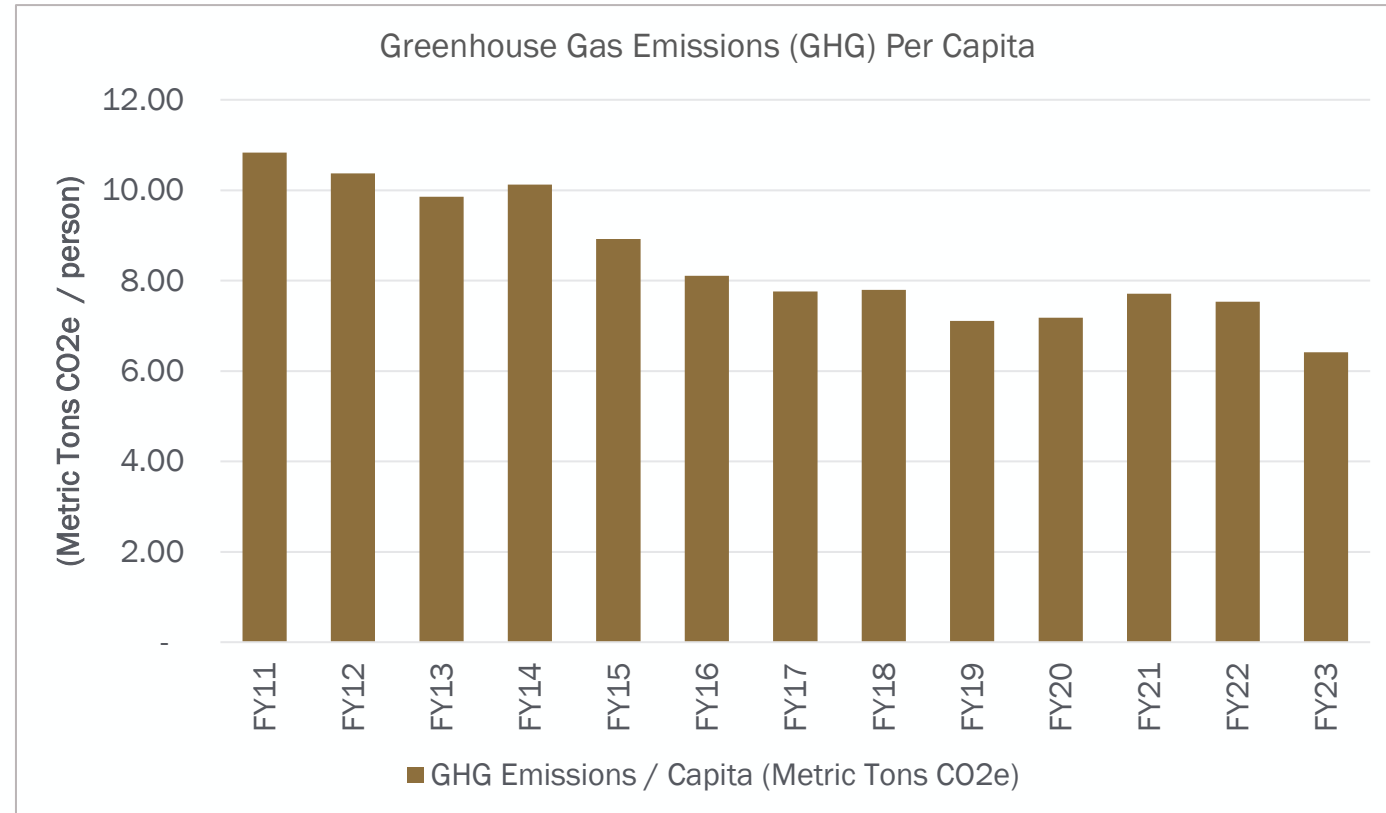


G-3 Double Bike Infrastructure

Energy

2020 Sustainability Master Plan Update

- Greenhouse gas emissions are **down 41% per capita** since FY11
- Total energy consumption increased 10%, but energy consumption per square foot decreased 10% FY11-FY23
- ✓ Pursue 500kW of renewable energy through ongoing solar feasibility study



Per capita data includes student enrollment and faculty and staff headcount for each fiscal year.
source: <https://www.purdue.edu/datadigest/>

ENERGY



E-1 Cut Carbon Emissions in Half



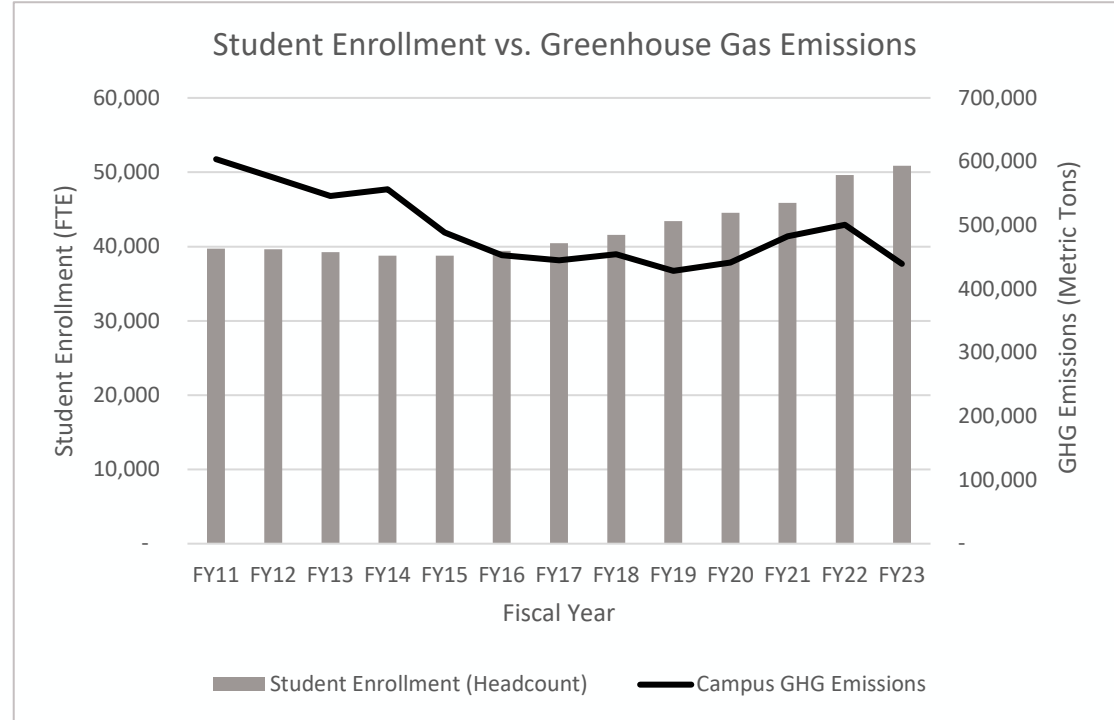
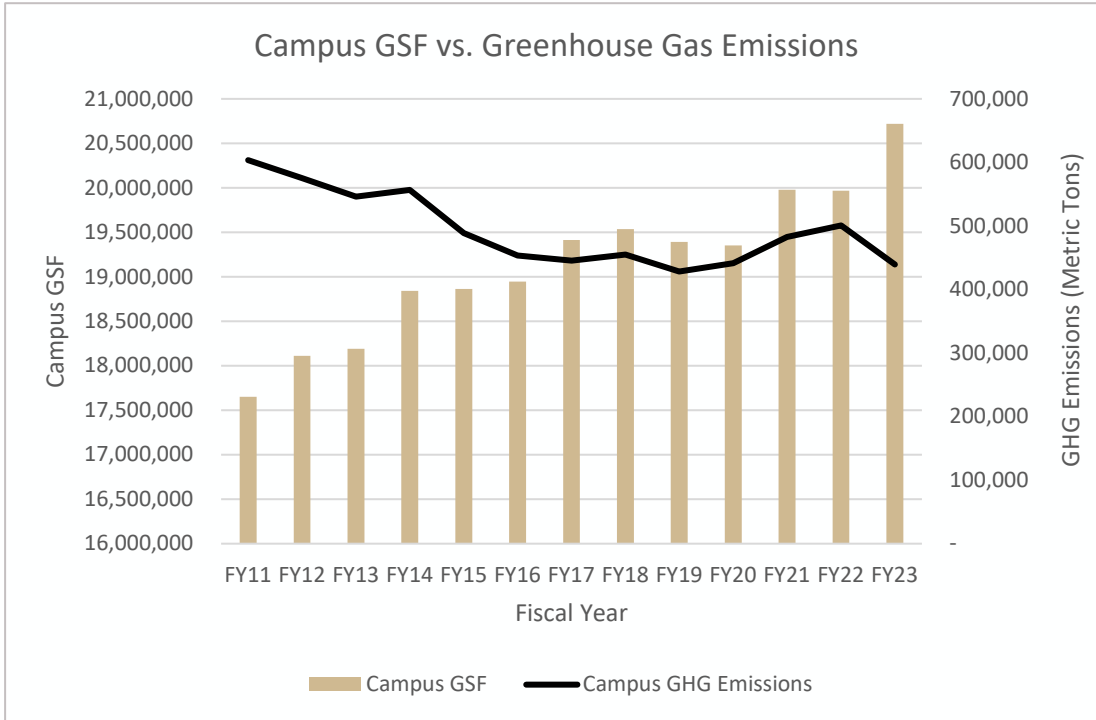
E-2 No Net Gain



E-3 Pursue 500kW Renewable Energy

Energy

2020 Sustainability Master Plan Update



ENERGY

- E-1 Cut Carbon Emissions in Half
- E-2 No Net Gain
- E-3 Pursue 500kW Renewable Energy

↑ 17%

GROWTH IN PURDUE OWNED GROSS SQUARE FOOTAGE (GSF)

17,648,695 (FY11) to 20,717,839 (FY23)
Reflects West Lafayette campus proper (only owned space, no farms)

↓ 27%

REDUCTION IN GREENHOUSE GAS EMISSIONS FY11-23

604K metric tons (2011) to 439K metric tons (2023)

↑ 28%

GROWTH IN WEST LAFAYETTE CAMPUS STUDENT ENROLLMENT

39,726 (Fall 2010) to 50,884 (Fall 2022)

Materials, Buildings and Water

2020 Sustainability Master Plan Update

Materials

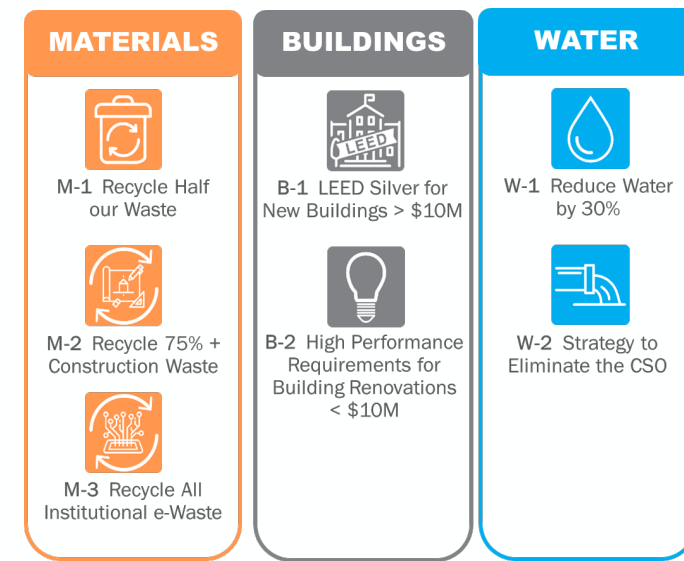
- 32% of waste is being recycled, and progress made in waste food recycling and instructional recycling signage
- ✓ An average of 84% of construction waste for LEED projects has been recycled – above 75% goal
- ✓ 100% of university e-waste has been recycled each year since FY11

Buildings

- ✓ New buildings either achieved or are pursuing LEED certification
- ✓ Draft criteria for high performance building renovations is complete and undergoing internal reviews

Water

- ✓ 30% reduction in water consumption
- ✓ Strategy to eliminate the combined sewer overflow (CSO) will be complete by end of FY24



↓ 170M

GALLON REDUCTION IN WATER USE
FY11 vs. FY24 (projected)

~470,000 GALLONS LESS PER DAY

Grounds

2020 Sustainability Master Plan Update

- ✓ All 3,738 trees in the 1869 Tree Planting Plan will have been planted by end of FY24

860+ trees thanks to partnership with Purdue for Life and the Days of Service

- ✓ Sustainable Landscaping Plan update complete
- ✓ Added 8.38 miles of bicycle infrastructure, surpassing the goal by 1.63 miles



GROUNDS



G-1 Plant One Tree per Day



G-2 Sustainable Landscapes for Purdue



G-3 Double Bike Infrastructure

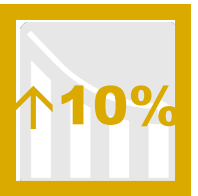
2020 Sustainability Master Plan (FY11-23)

Administrative Operations

ENERGY



E-1 Cut Carbon Emissions in Half



E-2 No Net Gain



E-3 Pursue 500kW Renewable Energy

WATER



W-1 Reduce Water by 30%



W-2 Strategy to Eliminate the CSO

MATERIALS



M-1 Recycle Half our Waste



M-2 Recycle 75% + Construction Waste



M-3 Recycle All Institutional e-Waste

BUILDINGS



B-1 LEED Silver for New Buildings > \$10M



B-2 High Performance Requirements for Building Renovations < \$10M

GROUNDS



G-1 Plant One Tree per Day



G-2 Sustainable Landscapes for Purdue



G-3 Double Bike Infrastructure

Purdue Sustainability: Strategy and Innovation

Pursue Clean Energy



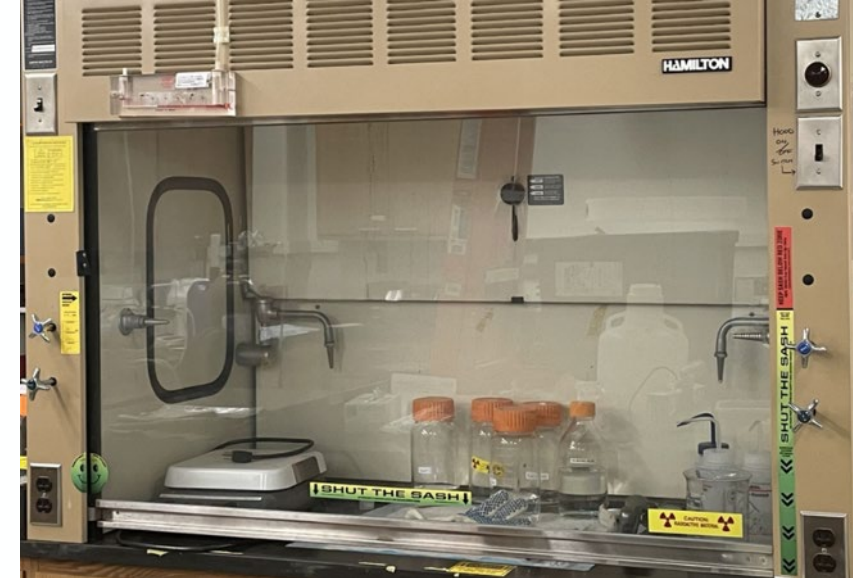
- Small Modular Nuclear Reactor Feasibility Study
- Indiana Office of Energy Development state-wide study

Work with Duke Energy



- Duke Energy on-campus CHP plant resulted in reduced emissions of ~50,000T/year
- Purdue's use of clean energy increases as Duke Energy's portfolio evolves

Energy Demand Management



- Saved >2000T of chilled water demand through targeted facility calibrations
- Launching Energy Action Days – Summer 2024
- Incentivizing Green Labs program

THANK YOU

