



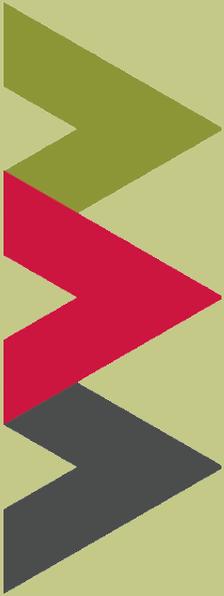
SUSTAINABILITY



**THE OHIO STATE UNIVERSITY**

# Ohio State Sustainability Fund

**FY 2018  
ANNUAL REPORT**



## Overview

The Ohio State Sustainability Fund was established to support improvement of the sustainability profile of the university – through efforts that improve campus operations and lead to increased learning or more sustainable behaviors in the university community.

The Office of Energy and Environment (OEE) manages the Ohio State Sustainability Fund (OSSF). Since 2010, the OSSF has invested over \$8 million in a variety of project types. In FY 2018, the OSSF provided nearly \$1.8 million in project support, which included projects that extended beyond the fiscal year calendar. All projects are presented to the President and Provost’s Council on Sustainability (PPCS) for discussion prior to any final funding decisions.

The OSSF committed funds for 13 projects in FY 2018, ranging from \$15,000 to test new materials used in filtering excess nutrients from surface water bodies, to \$500,000 in support for transitioning the university’s vehicle fleet to alternative fuels.

As in the past, many of the OSSF investments are expected to result in quantifiable operational cost savings for the university. However, given that many of the projects are still underway, a full cost savings accounting is not available for the timing of this annual report. Even without those new cost savings figures, investments of the OSSF have generated a cumulative annual cost savings in excess of \$1.3 million. This effectively nets out the annual funding renewal of the OSSF and returns a financial net positive result to Ohio State.

In the nine year history of the OSSF, FY 2018 witnessed the highest amount of funding issued in a single year. This demonstrated demand for sustainability funding came from academic and operational units, as well as collaborations between the two. OEE is encouraged by this activity, and intends to continue to deploy OSSF grants that advance the university’s academic mission by leveraging the university’s operations as a living lab for sustainability practices.

# Project Funding Guidelines

Guidelines for the eligibility and selection of projects the OSSF supports are summarized below. Proposals are reviewed and considered individually and in light of all other funded projects and pending proposals. Proposed projects must address the eligibility criteria below. The individual projects that best meet the eligibility criteria are then evaluated for funding support in consideration and comparison to all previously funded projects and pending proposals.

**Eligibility guidelines:** Individually, does the proposed project meet the following criteria:

- ▶ **Contribute to sustainability** – Projects improve the sustainability of campus operations and/or improve the sustainability awareness of campus populations.
- ▶ **Campus impact** – Projects are restricted to Ohio State campuses and must be led by a staff or faculty member.
- ▶ **Existing university operating budget** – Projects that are covered by an existing university operating budget are not eligible. Projects and project funding are not intended to be an alternative path to the normal annual budgeting process.
- ▶ **Partial funding support** – The Sustainability Fund should be used to seed, catalyze, or gap-fill funding on projects rather than be the sole funding source. The fund may be used to support the launch of a program but not for regular year-over-year programmatic funding.

**Selection Evaluation Guidelines:** Relative to previous projects and all other pending project proposals:

- ▶ **Feasibility** – Is the project likely to succeed? Has the project accounted for contingencies and major obstacles?
- ▶ **Sustainability Impact** – Does the project measurably improve or accelerate the sustainability of Ohio State's campuses or the realization of Ohio State's Sustainability Goals and priorities?
- ▶ **University Population Impact** – Does the project lead to increased understanding, greater engagement, or sustainable behavior change in the university community?
- ▶ **Economic Impact** – What are the financial benefits? What are the cost-savings, return on investment, or payback over time? Positive return on investment is strongly encouraged.
- ▶ **Innovation** – Does the project exhibit innovative technology, processes, or application of knowledge?
- ▶ **Institutionalization/Scalability** – Can the project become embedded in the University's routine operation? Does it need only start-up funding to then sustain itself over time? Can it be expanded to other campus locations if successful?

## Project Selection

OEE receives and seeks project proposals from across the university including colleges, student groups, regional campuses, research centers, Student Life, Facilities Operations and Development, Wexner Medical Center, and Athletics. OEE continually reviews projects throughout each fiscal year.

Following a review by OEE, recommended projects are presented to the President and Provost's Council on Sustainability (PPCS) for further review and consideration. Projects receiving a concurrence from the PPCS are then awarded funding.





# FY 18 Funded Projects

## ALTERNATIVE FUEL VEHICLE CONVERSION

**\$875,000**

Through two separate OSSF grants to the Transportation and Traffic Management department, the university made a considerable investment in its goal to reduce the carbon footprint of its vehicle fleet.

The first \$500,000 grant created a university-wide incentive program to cover the cost difference between a conventional and alternative fuel vehicle. The incentive program is open to all colleges and departments, and can be applied to electric or compressed natural gas fueled vehicles. Interest across the university has been strong, with 15 vehicles purchased within the first four months.

The second \$375,000 grant enables the university to place electric vehicle charging stations where those vehicles are serviced and near colleges and departments that convert to those vehicles. This grant will fund the installation of 30–50 new charging units across the university.

Combined, these two grants work together to accelerate the conversion to a lower carbon fleet, and help meet the university's Smart Columbus electrification commitments. Further, university faculty have already benefitted from access to the use data generated by the charging stations for student projects and in-classroom learning.



### SUSTAINABILITY GOALS ADVANCED BY PROJECT

- Teach sustainability in innovative ways in and out of the classroom
- Foster sustainability culture on and off campus
- Encourage local sustainability partnerships
- Reduce carbon footprint of fleet by 25% by 2025

## STUDENT FARM: SUSTAINABLE FOOD and FARMING SYSTEMS

**\$94,741**

After a three-year hiatus, the Student Farm located at Waterman Farm returned in 2017. Following a successful initial year of programming, Student Farm leaders are integrating the property into curricular and co-curricular activities. With support from an OSSF grant, the Student Farm will advance a number of sustainability projects and operational improvements.

First, student learning opportunities will be expanded by piloting a number of experiential learning and community engagement programs. Among those will be a student project to coordinate with multiple on-campus units to compost up to 20,000 pounds of the university's generated food waste. In turn, that compost will allow the Student Farm to increase its produce offerings for sale at a weekly farm stand, directly to Heirloom Café, and through an expanded community-supported agriculture program. This allows students to participate in a circular economy model, and practice a variety of marketing techniques for locally grown food.

Second, the OSSF grant will provide funding to install a solar-powered cold storage unit and a biomass-fueled heating system for the Student Farm greenhouse. This allows farm operators to raise and store produce until it is ready for sale with a minimal energy footprint.

## ONCE THROUGH WATER USAGE \$73,203

Noting the university's water conservation sustainability goal, the College of Pharmacy identified a significant opportunity to reduce water use in its laboratories. A series of 45 rotary evaporators ("rotovaps") are used for the organic synthesis of different chemicals. When in use, water runs continuously from the faucet through the rotovap and then down the drain to create a vacuum needed for the synthesis process.

But, if the College changed a component of the rotovap technology from a water aspirator to a vacuum pump, it would save 400,000 gallons of water per year, per rotovap – for a total annual water savings of 18 million gallons.

The College teamed up with the university's Facilities, Operations and Development department on this OSSF grant to purchase and install the more efficient vacuum pump technology. This effort will not only help achieve the university's water conservation goal, but will save the university nearly \$148,000 annually on its water bill.



### SUSTAINABILITY GOALS ADVANCED BY PROJECT

- Teach sustainability in innovative ways in and out of the classroom
- Reduce potable water consumption by 5% per capita every five years



### SUSTAINABILITY GOALS ADVANCED BY PROJECT

- Teach sustainability in innovative ways in and out of the classroom
- Foster sustainability culture on and off campus
- Encourage local sustainability partnerships
- Reduce total campus building energy consumption by 25% by 2025
- Achieve zero waste by 2025



# Sustainability Fund Projects

## FY 2014-2017

### 2014

	Funding	Savings/Year
Olentangy River Restoration Project	\$50,000	\$7,600
Zero Waste Program - Schottenstein Center	\$50,000	NA
Townsend Hall – Digital control upgrade	\$68,000	\$30,320
Drinko Hall – Digital control upgrade	\$129,591	\$78,630
Agricultural Engineering Bldg – Digital control upgrade	\$146,759	\$50,220
Bolz Hall – Energy conservation measures	\$39,615	\$8,246
Mirror Lake – Well drilling and testing	\$15,000	\$33,182
<b>FY 2014 Totals</b>	<b>\$498,965</b>	<b>\$208,198</b>

### 2015

	Funding	Savings/Year
Clean Fuels Ohio - Compressed Natural Gas Station	\$10,000	NA
Mendenhall Lab - Energy conservation measures	\$191,108	\$118,754
Hagerty Hall - Energy conservation measures	\$20,184	\$62,915
Hitchcock Hall - Energy conservation measures	\$26,600	\$22,810
Caldwell Lab - Energy conservation measures	\$63,147	\$40,529
Drinko Hall - Energy conservation measures	\$150,877	\$71,670
Ohio State Bicycle Sharing System	\$200,000	\$28,125
New Recycling Panels for Recycling Bins	\$26,000	NA
<b>FY 2015 Totals</b>	<b>\$687,916</b>	<b>\$344,803</b>

### 2016

	Funding	Savings/Year
LED lighting for B. Davis, J. Owens, and Buckeye Field Stadiums	\$150,000	\$8,367.24
Recycling Infrastructure Expansion and Standardization	\$150,000	NA
University Organics Hauling Vehicle	\$345,260	TBD
CNG Filling Station – Construction Budget Support	\$500,000	TBD
Center for Ethics and Human Values – Sustainability Project	\$144,000	NA
Collaborative to Reduce and Redirect Consumer Food Waste	\$27,500	NA
Reusable Hot/Cold Beverage Cup Program	\$200,000	NA
AASHE STARS – Carbon Footprints for Regional Campuses	\$18,000	NA
Ohio State-Lima Campus Hybrid Electric Car	\$17,000	\$250
Hot Water Pipe Upgrades	\$171,000	TBD
<b>FY 2016 Totals</b>	<b>\$1,722,760</b>	<b>TBD</b>

# 2017

	Funding	Savings/Year
Zero Waste Goals	\$53,000	TBD
Water Bottle Refilling Stations	\$93,200	NA
Mansfield Campus Micro-Farm	\$100,000	TBD
Marion Campus Solar Energy Installation	\$62,450	TBD
Electronic Landscape Irrigation Control	\$25,000	TBD
<b>FY 2017 Totals</b>	<b>\$333,650</b>	<b>TBD</b>

# 2018

	Funding	Savings/Year
Alternative Fuel Vehicle Incentive	\$500,000	TBD
Fleet EV Charging Infrastructure	\$375,000	TBD
Ultra-Cold Freezer Pilot	\$263,728	TBD
BioSciences Greenhouse Energy Curtains	\$190,000	TBD
Student Farm: Sustainable Food & Farming Systems	\$94,741	TBD
Once Through Water Usage	\$73,203	TBD
Climate Action Plan	\$71,153	NA
Food & Organic Waste Inventory & Demonstration Project	\$64,596	TBD
Lower Olentangy Sustainability Plan	\$60,000	NA
Grounds For All	\$43,000	TBD
Campus Sustainability Signage	\$25,000	NA
EvoBin Research	\$21,000	TBD
Artificial Floating Island Test Garden	\$15,000	NA
<b>FY 2018 Totals</b>	<b>\$1,769,421</b>	<b>TBD</b>

Fiscal Years 2010–2018 Summary	Total Investment	Annual Cost Savings*
92 funded projects	\$8.5 million	\$1.3 million

**\* NOTE:**

Efforts to quantify the cost savings for 2016-2018 projects are ongoing and will be reported as it becomes available.





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