# Ohio University FY16 Climate Action Report

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#### Letter from the Office of Sustainability Staff:

In the past year, we have actively watched as political, social and entertainment outlets globally highlighted greenhouse gas emissions as a premier conversation. Our communities are at the cusp of crisis as we experience rising sea levels, heightened severity of natural disasters and spread of disease, to name a few. COP21, the State of the Union address, Presidential platforms and Ohio University activities have all addressed climate change as an issue requiring immediate action.

Ohio University has the ability to take on extraordinary leadership in the area of greenhouse gas reductions if each member of this campus community steps up and accepts the responsibility in front of us. We would like to call each of you to action: Participate in the Sustainability Tracking & Evaluation Program (STEP); make a pledge to reduce your carbon footprint; choose to reuse; make purchases that reflect your sustainability values; carpool or bike to campus; report inefficiencies



Above: Office of Sustainability Staff, FY16. Annie Laurie Cadmus, Daniel Doak, Olivia Miltner, Kristeena Blaser, Sam Crowl, Janice Brewer and Elaine Goetz. Not pictured: Tiffany Stelzer, Cheyenne Fenstemaker, Hallie Zarbakhsh and Elizabeth Rose.

to Facilities Management; donate to sustainability projects; turn off overhead bulbs in favor of natural lighting...the list of ways you are needed is vast. The Office of Sustainability is available to assist you in your journey by helping you figure out how you can be a part of a solution toward carbon neutrality.

We often explain to departments, offices and individuals across campus that it is our job to serve as a platform of support for the rest of campus. We organize data, manage local and national outreach efforts, communicate with campus leaders, research new technologies and answer emails so that our colleagues across Ohio University's campuses and communities have the support they need to implement sustainable behaviors. It's an honor to be able to work alongside dedicated, inquisitive and passionate people.

The contents of this report are made possible thanks to the teamwork of many. **Thank you** to those of you who served as Reporting Bodies for this edition of the Climate Action Report. We hope others are able to identify themselves as future implementers and reporters as a result of the information offered here.

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Available electronically at www.ohio.edu/sustainability.

On the cover: Office of Sustainability staff members rehears e the Compost Facility Tour, January 2016. Pictured left to right: Olivia Miltner, Annie Laurie Cadmus, Sam Crowl, Kristeena Blaser and Daniel Doak. Photo credit: Elizabeth Rose

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Editor's Note: Please note that titles and office names have changed for many of the reporting bodies identified in this document. These changes will be reflected in the next version of the Climate Action Plan. For ease of comprehension, the Categorical Progress sections in this report indicate the <u>updated</u> titles or office names, wherever possible.

# **Progress Reporting at a Glance**

#### **Greenhouse Gas Emissions:**

#### 2005—Present

Greenhouse gas emissions decreased significantly in the decade from fiscal year 2005 to fiscal year 2015. Emissions for FY15 were **24.6%** lower than FY05. The main reasons for this decline were:

- Regional grid changes after FY06
- Decreased usage of coal as heating fuel beginning in FY12
- Various energy efficiency projects ranging from FY12 through FY15
- Conversion of solid waste from Culinary Services to compost

Climate Action Plan benchmarks call for decreases from the FY12 baseline. Since FY12, there has been a slight increase in greenhouse gas emissions (3.2%), but both FY16 and FY17 will see large decreases in emissions from FY12 due to the renewable energy certificate (REC) purchases and coal-to-natural gas conversion discussed in the Energy section.



# **Progress Reporting at a Glance**

#### **Greenhouse Gas Emissions:**

#### **Projection to 2075**

The Ohio University Climate Action Plan calls for carbon neutrality by 2075. The projection graph below shows a path to achieve carbon neutrality by that date.

#### The following assumptions were used to create the graph:

- Business as usual assumes that the campus population and square footage grow according to the Athens campus undergraduate student growth planning figures reported in the January 2016 Board of Trustees meeting for 2017-2020 (3.6% for 2017; 2.0% for 2018-2020, p. 160 of agenda), and at a 0.5% rate from 2021-2075.
- Smart Growth is a planning strategy that encourages meeting space needs by replacement, instead of addition, of square footage. Building energy usage does not increase in the **Smart Growth** projection, but population-based growth does occur.
- Campus buildings will be recommissioned over the next thirty years. **Recommissioning** typically reduces energy usage by 15%. For the projection, the reduction is spread out as 0.5% per year over a 30-year time period.
- A **Utility Master Plan** for Ohio University will be published in the next fiscal year. It is anticipated that reductions will occur from the Utility Master Plan, though minimal reductions have been projected here. More accurate data will be added to this graph when the Utility Master Plan is available.
- The regional electric grid will increase the percentage of renewable resources in its resource mix to 12.5% by 2027.
- Offsets may include any combination of the following: on-site renewables, power purchase agreements (PPAs), renewable energy certificates (RECs), composting, and forest preservation and growth.



# **Progress Reporting at a Glance**

The following pages offer a quick overview of the University's status on Phase 1 Goals. Additional information, photos, obstacles, and next steps are provided on pages 3-27.

#### **Energy and Operations**

- 2014: Reduce building energy intensity by 20% below 2012 levels Status: Building energy intensity decreased 19.7% from FY12 to FY14, nearly meeting this goal.
- 2016: Lower peak to 23 MW (on Athens campus) Status: The University is considering converting to all-electric heating and cooling to pave the way for renewable energy sourcing. The current goal limits conversion to electricity and is therefore slated for amendment in the FY17 Sustainability and Climate Action Plan Amendment process.
- **2016: Replace Lausche Heating Plant with lower emissions replacement** Status: This benchmark is no longer being pursued as it is written and will be revised in the next version of the Climate Action Plan. On Thanksgiving Day, 2015, the University burned its last coal at the Lausche Heating Plant. The steam system is now operating on natural gas fuel. The intent of the benchmark, to lower emissions, has been met.
- 2018: Increase renewable energy generation to 20% of all campus use (defined as 2020 in Sustainability Plan) Status: In December 2015, the university began offsetting 50% of electricity usage (20% of all campus energy use) with the purchase of renewable energy certificates (RECs). This goal has been achieved for the Athens campus, ahead of the deadline.

#### Land and Resource Management

- **2013 (through 2075): Record 0 net emissions from fossil fuel extraction on OU property (ongoing)** *Status: To date, the University has not engaged in mineral extraction activities on any of its campuses.*
- 2018: Increase carbon storage by 5% from 2012 levels Status: Ohio University has initiated carbon sequestration calculations in conjunction with a campus-wide tree inventorying effort that is proposed for FY17. Simultaneously, tree replacement standards are being established for the University Design Standards so as to increase sequestration data even in the case of tree removals.
- 2018: Reduce GHGE from land management practices and equipment by 25% of 2012 levels Status: Emissions related to land management practices are currently not tracked since Grounds Services budgeting is not entirely separate from Facilities Management. Though, efforts are being made to move to electric equipment so as to reduce use of gas. Future data collection efforts will work toward identifying and tracking gallons of fuel purchased by Grounds Services annually. This will allow for data to be associated with this benchmark in the 2018 report.

#### **Construction and Design**

• 2075: 0 net emissions from Construction and Design. - All new construction and renovations to implement carbon neutral practices.

Status: The University's Design and Construction Standards Team has begun to review and amend the Design Standards to meet or exceed LEED Silver Standards. Efforts toward building efficiencies are ongoing.

# **Progress Reporting at a Glance**

The following pages offer a quick overview of the University's status on Phase 1 Goals. Additional information, photos, obstacles, and next steps are provided on pages 3-27.

#### Waste Reduction and Recycling:

- 2016: Consume 5% less per person, per year Status: The per capita waste reduction realized between FY12 and FY15 was 1.71%. The waste reduction goal as currently written does not reflect institutional abilities and is currently under review by the Office of Refuse and Recycling and the Voinovich School's Zero Waste Program to work toward identifying more appropriate metrics. Single stream recycling, implemented in 2015, will assist in meeting waste reduction goals.
- 2016: Increase recycling rates 80% by weight of all recyclable solid waste Status: The FY15 recycling rate is 65.74% (excludes construction and demolition waste).
  - Advancements in Athletics' waste reduction efforts have assisted in improving institutional diversion and recycling rates. In 2015, OHIO was named the national winner in the diversion rate category of the nationally competitive GameDay Recycling Challenge.
- 2018: Decrease construction waste going to landfill by 25%

Status: The University's Design and Construction Standards Team is currently reviewing institutional mandates for demolition waste to ensure that this goal will be met.

- 2018: 100% of to-go products offered in dining halls made of compostable materials Status: This goal was met by Culinary Services in 2012
- 2018: Compost all compostable university waste Status: Ohio University is home to the largest in-vessel composting system at any college or university in the nation. The system has a capacity to compost 100% of preand post- consumer waste collected in the dining facilities and central food facility. The purchase of a grinder would allow for all compostable to-go containers to be processed. Additional infrastructure is still needed to manage compostable waste collected outside of the dining facilities.



Office of Sustainability staff support waste diversion efforts by repurposing cardboard in their work at the OHIO Ecohouse garden.

# **Progress Reporting at a Glance**

The following pages offer a quick overview of the University's status on Phase 1 Goals. Additional information, photos, obstacles, and next steps are provided on pages 3-27.

#### Transportation

 2016: Encourage use of "LEFE" (Low Emission Fuel Efficient) vehicles on campus: 60% of all student, faculty, and staff vehicles registered with a parking pass will be classified as LEFE

Status: A graduate student, Eddie Smith ,worked with Transportation and Parking Services to analyze data from all University parking permit holders . It was discovered that permits do not currently require that the vehicle's "year" be provided. The omission of such data limits the University's ability to track LEFE vehicles on campus. Transportation and Parking Services is in the process of transitioning "year" to a required field in the permit application process.

It should also be noted that, without state or federal mandates regarding vehicle emission standards, it is outside of the University's purview to punish or reward individuals within the campus community in relationship to their personal vehicle specifications. So, while tracking efforts of this benchmark have been underway, policy-related opportunities are limited.

- **2018: Increase pedestrian traffic and bicycle usage by 100% above 2013 levels** Status: Tracking mechanisms for this data are limited. The Office of Sustainability is currently seeking funding for a bicycle/pedestrian commuter tracking program and hopes to have a program in place by 2018.
- 2018: Encourage use of non-Single Occupancy Vehicles: 85% of students/20% of employees will use a non Single Occupancy Vehicle as their primary method of transportation Status: An SOV study was conducted by a student group in 2015. Data from that study needs to be accessed, analyzed and reviewed so outreach methodologies can be identified and implemented.
- 2018: Reduce total (student, faculty, staff) commuter emissions by 15% below 2013 levels by introducing alternate transportation options and incentive programs
  Commuting Emissions (Metric tons of CO2e)

Status: City of Athens Mayor Steve Patterson and Ohio University President Roderick J. McDavis announced a pilot10000versity President Roderick J. McDavis announced a pilot10000partnership that will allow the Ohio University ID to serve8000as a fare card for unlimited travel on the Athens Public8000Transit (APT) system beginning July 1, 2016. This incentive8000program will assist in reversing the upward trend in emission from commuting as enrollment and employment increase. The current data collected to determine commuter-<br/>related emissions involves estimations; modifications are<br/>being made to improve data accuracy.6000





#### • 2018: Reduce air travel by 10% below 2012 GHG emission levels.

Status: Air travel emissions were on a downward trend from FY12-FY14. However, a sudden spike in travel-related emissions occurred in 2015 and the Office of Sustainability is working to identify the source of this sudden increase.

# **Progress Reporting at a Glance**

The following pages offer a quick overview of the University's status on Phase 1 Goals. Additional information, photos, obstacles, and next steps are provided on pages 3-27.

#### **Education and Outreach**

 2015: Establish and implement assessment of baseline awareness and knowledge of carbon neutrality issues for the university community as a whole

> Status: Baseline data was established. The carbon neutrality literacy rate for the campus community was 73%.

 2015: Establish and implement assessment of baseline awareness and knowledge of carbon neutrality issues for incoming students. This assessment is to be repeated annually Status: Baseline data was established. The carbon neutrality literacy rate of first-year students was 70%. The



survey will be combined with the Sustainability Literacy survey that is conducted as a mandate of the Sustainability Plan and will be implemented annually in October. Another demographic category of "graduating within the next year" will be added to be able to calculate the literacy rates of graduating students, as well.

- 2015 and ongoing: Expand and implement new university-wide programming and curriculum efforts aimed at increasing greenhouse gas emissions awareness Classroom presentations, SOUL meetings, and other campus-wide events already occur. Efforts are ongoing.
- 2018: Repeat university-wide assessment of awareness and knowledge of carbon neutrality issues Status: Office of Sustainability is prepared to continue the assessment process.

#### **Behavior Change and Implementation Management**

This section does not have any Phase 1 metrics. Qualitative reporting is provided in the Behavior Change and Implementation Management section of this report.

# **Energy and Operations**



# **Energy and Operations Phase 1 Benchmarks**

#### Phase 1:

- 2014: Reduce building energy intensity by 20% below 2012 levels
- 2016: Lower peak to 23 MW (on Athens campus)
- 2016: Replace Lausche Heating Plant with lower emissions replacement
- 2018: Increase renewable energy generation to 20% of all campus use (defined as 2020 in Sustainability Plan)

#### **Progress Highlights:**

A new team was hired to spur the implementation of clean energy initiatives: Stephen Wood, PE, Executive Director of Facilities; Joel Baetens, PE, CEM, Director of Utilities; and Claire Naisby, CEM, CPMP, Building Systems Integration Manager.

On Thanksgiving Day, 2015, the University burned its last coal at the Lausche Heating Plant. The steam system is now operating on natural gas fuel, and the University has met its Phase 1 2016 benchmark on heating plant replacement.

By January 1, 2016, the University was offsetting 50% of electricity usage (20% of all campus energy use) with the purchase of renewable energy certificates (RECs). Because of this extensive commitment to renewable energy, Ohio University was placed on the US EPA Top 30 College & Universities Green Power Partner list. The University has also met its 2018 Phase 1 benchmark for renewable energy generation, and the 20% by 2020 goal of the Sustainability Plan.



#### **Progress Overview:**

Building energy intensity decreased 19.7% from fiscal year (FY)2012 to FY14 (see figure on next page), nearly meeting the 2014 Phase 1 benchmark.

Emissions from purchased electricity decreased 5.8% from FY12 to FY15.

Direct emissions from heating and cooling are virtually the same since fiscal year 2012 (0.19% increase), despite a 1.1% increase in gross square footage.

# Energy and Operations Benchmarks, next steps

#### Phase 2-4 Benchmarks:

Phase 2:

- 2030: Reduce building energy intensity by 40% below 2012 levels
- 2030: Reduce institutional greenhouse gas emissions 25% below 2012 levels

• 2032: Increase renewable energy generation to 30% of all campus use (defined as 2040 in Sustainability Plan) Phase 3:

- 2050: Reduce institutional greenhouse gas emissions 50% below 2012 levels
- 2050: Increase renewable energy generation to 40% of all campus use Phase 4:
- 2075: 0 emissions from energy and operations practices on all campuses



#### **Top Strategies:**

- Funds have been allocated, through the Energy Infrastructure Projects (EIP), for \$79 million in energy infrastructure upgrades that allow Ohio University to meet climate commitments and EPA regulations.
- A major utility metering project is underway on the Athens campus. All facilities over 15,000 gsf should be metered for all utilities by the fall of 2017.
- A Utility Master Plan was created with the assistance of RMF Engineering. The draft plan is under review as of February 2016, in concert with the Campus Master Planning process.
- The university is considering strategies to move permanently to Group 1, or carbon-free, energy sources, and has made a four-year REC purchase commitment (see progress highlights) to use carbon-free power for 50% of Athens campus electrical needs until a permanent renewable energy source can be secured.

# Land and Resource Management

Graduate Student Kristeena Blaser measures diameter at breast height (DBH) of a tree

# Land and Resource Management Phase 1 Benchmarks

#### Phase 1:

- 2013 (through 2075): Record 0 net emissions from fossil fuel extraction on OU property (ongoing)
- 2018: Increase carbon storage by 5% from 2012 levels
- 2018: Reduce GHGE from land management practices and equipment by 25% of 2012 levels

#### **Progress Highlights:**

Formation of Campus Tree Advisory and Land Management Committee.

Current review of Tree Inventory proposal—with intent to implement in FY17.

Initiation of carbon sequestration baseline calculation and offset analysis

OHIO Ecohouse grounds received designations as a Monarch Waystation through Monarch Watch and a Certified Wildlife Habitat through National Wildlife Federation.





#### Strategy spotlight:

#### Strategy: Reduction in maintenance required for landscaped areas:

Initiatives to accomplish Strategy:

- Transition flowerbeds from annual to perennial plantings some completed, efforts are ongoing.
- Incorporation of soil amendments in maintenance program that enhance waterpercolation and holding capacity to reduce drought stress in lawns, beds, and tree plantings. This effort reduces the need for supplemental water to be utilized in irrigation—ongoing.
  - "No-Mow" areas—There are plans to add a second "No-Mow" Prairie Planting on Ohio University Golf Course in 2016; improve/add to pollinator/ prairie planting at West State St. "No-Mow" area; installation in 2013 of "low-mow" fescue planting on several steep slopes on campus reducing mowing needs.

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 Riparian designations— Ohio University Voinovich School designed riparian landscape consisting of native plants along Oxbow Creek inlet for City of Athens 2014 project with Ohio University Grounds Department consulting, assisting in planting additional natives, and providing establishment maintenance.

## Land and Resource Management Benchmarks, next steps

#### Phase 2:

- 2032: Reduce GHGE from land management practices and equipment by 50% of 2012 levels
- 2032: Increase carbon storage by
  15% from 2012 levels

#### Phase 3:

- 2050: Reduce GHGE from land management practices and equipment by 75% of 2012 levels
- 2050: Increase carbon storage by 30% from 2012 levels
- Phase 4:
- 2075: 0 emissions from land and resource management practices on all campuses

#### Obstacle:

While genuine efforts are being accomplished to reduce the impact the Grounds Services department has on institutional greenhouse gas emissions, there is currently no reporting mechanism in place to determine exact emissions associated with grounds practices, which makes target data difficult to analyze.



#### **Progress Overview:**

- No resource extraction activity change on Ohio University Properties since 2012.
- Carbon Calculation of land carbon stocks: Planning for main campus tree canopy inventory as well as forested acreage analysis with associated carbon stocks and sequestration calculations to begin 2016; plan to have substantial completion by 2018 benchmark date, funding permitting.
- Purchase of new mower in 2015 with 7' mowing deck allowing more grass to be cut in one pass, causing reduction in mowing hours and extra equipment usage. This mower also has capacity to run off propane which will be considered moving forward. Purchase of electric weed eater, blower and pruners will reduce use of gas or 2-cycle powered machinery.

#### Next Steps:

- Continue strategy to increase tree canopy and shading: continue current policy of minimum of 1:1 tree replacement ratio, consider an increased replacement ratio in future iterations of the University's Design and Construction Standards.
- Landscape Coordinator to prepare and implement Landscape and Tree Care Plan Recommendations.
- Align with new Campus Master Plan green space and canopy preservation values
- Review of University Design and Construction Standards including tree protection/preservation, landscape standards, such as tree addition requirements for hardscape projects, and to promote overall best management practices.
- Continue investigating low emissions equipment
- Complete West State St. prairie/pollinator garden and secure Monarch Waystation designation.



Reporting Bodies: Landscape Coordinator, Manager of Real Estate Operations and Legal Assistant

Ohio University is the 2015 NATIONAL WINNER of the GameDay Recycling Challenge, Diversion Rate



# Waste Reduction and Recycling Phase 1 Benchmarks

#### Phase 1:

- 2016: Consume 5% less per person, per year
- 2016: Increase recycling rates 80% by weight of all recyclable solid waste
- 2018: Decrease construction waste going to landfill by 25%
- 2018: 100% of to-go products offered in dining halls made of compostable materials
- 2018: Compost all compostable university waste

#### **Progress Highlights:**

**Zero Waste Resolution:** Ohio University has been an organizing member, as well as signatory, of the Appalachian Ohio Zero Waste Plan; a comprehensive strategy to move towards zero waste in the region.

**Mechanisms for accurate waste measurement:** Significant improvement has taken place in waste-related tracking mechanisms for Ohio University's main campus. These include comprehensive assessments and data collection of every category which is waste stream related. Recent contract negotiations with our service provider now allow OHIO to track real weights per pick-up location on all major waste streams.

Accessible and user—friendly campus recycling: Major improvements include converting the campus to single stream recycling, establishing recycling capabilities in every residential room, office and academic building, and an addition of outdoor recycling opportunities across campus.

**Compostable containers:** Dining halls transitioned to 100% compostable to-go containers in 2012.



#### Obstacle:

Culinary Services has impressively achieved the goal of ensuring all togo containers are compostable. Though, it was later discovered that the University's compost system has difficulty degrading the containers at such a high volume. Facilities Management is now actively seeking additional processing measures to ensure that to-go containers are appropriately composted.

#### **Progress Overview:**

- Comprehensive waste stream baseline data was established for FY12. Between FY12 and FY15, the amount of materials being sent to the landfill dropped 18.8%, from 2266 tons in FY12 to 1840 tons in FY15. However in that same time period, the overall waste stream increased 4.84% from 5123 tons in FY12 to 5371 tons in FY15. Since student enrollment increased 6.7% over this period this is actually a 1.71% (or 8.03 lbs./person/year) decrease in waste created per capita.
- Ohio University is functioning at a 65.74% total recycling rate. In FY15, 3531 tons of landfill material was diverted through recycling, compost, donation or creative reuse. This represents a 17.89% increase in overall diversion rates from the FY12 baseline. This data includes all known categories of waste stream with the exception of construction and demolition waste.

# Waste Reduction and Recycling Benchmarks, next steps

#### Benchmarks, Phases 2-4:

#### Phase 2:

 2032: Decrease construction waste going to landfills by 50% of 2012 levels

#### Phase 3:

- 2050: Decrease construction waste going to landfills by 75% of 2012 levels
- 2050: Decrease waste going to landfill by 75% of 2012 levels

#### Phase 4:

 2075: Achieve 0 emissions from waste management practices on all campuses

#### **Next Steps:**

In an effort to achieve an 80% overall diversion rate in calendar year 2016, the University is focused on:

- ° continued conversion to mixed stream recycling;
- ° Infrastructure upgrades
- ° Increasing recycling capacity;
- ° development of education and outreach campaigns;
- continuing collaborations between Office of Recycling & Refuse and Architecture, Design & Construction to design appropriate tracking mechanisms for construction/demolition waste, and;
- adopting zero waste language and targets in the Ohio University Sustainability Plan.



Above: Student Sabrina Canchola collects and weighs post-consumer food waste during a Plate Waste Audit conducted for the Sustainability Implementation Course Photo Credit: Bridget Stocker



The above graphic, created by Luke Szabados, student and Recycling Team Member, was used to educate the campus about Mixed Recycling.

#### Benchmark Spotlight: Game Day Challenge

In Fall of 2015, OHIO was named the <u>national winner</u> in the diversion rate category of the nationally competitive GameDay Recycling Challenge. More than 22,000 fans attended the Oct. 17, 2015, Bobcat football game and recycled and composted 7,225 pounds of materials.

#### Benchmark Spotlight: Compostable Containers

- After significant research and contract negotiation, the dining halls transitioned to 100% compostable to-go containers in 2012.
- In 2014, West 82 in Baker Center also switched to compostable alternatives for all front-of-house consumables. This includes Pepsi cups, Pepsi lids, foil wrappers, sweetener packets and soufflé cups and lids.
- Many of the "Fresh Take" pre-packed food items that are made at the Central Food Facility and sold in the Markets and Cafes are also packaged in compostable containers.

Reporting Bodies: Office of Recycling and Refuse, Moving and Surplus Services, Architecture Design & Construction



Transportation

# **Transportation Phase 1 Benchmarks**

#### Phase 1:

- 2016: Encourage use of "LEFE" (Low Emission Fuel Efficient) vehicles on campus: 60% of all student, faculty, and staff vehicles registered with a parking pass will be classified as LEFE
- 2018: Increase pedestrian traffic and bicycle usage by 100% above 2013 levels
- 2018: Encourage use of non-Single Occupancy Vehicles: 85% of students/20% of employees will use a non Single Occupancy Vehicle as their primary method of transportation
- 2018: Reduce total (student, faculty, staff) commuter emissions by 15% below 2013 levels by introducing alternate transportation options and incentive programs
- 2018: Reduce air travel by 10% below 2012 GHG emission levels

#### **Progress Highlights:**

Ohio University is encouraging the purchase of electric vehicles (EVs) and supporting EV owner commuting to reduce total commuter emissions. EV charging stations have been deployed across campus and incentives have been put in place by the Ohio University Credit Union for EV purchases.



Ohio University has strongly focused on bicycle infrastructure over the past three years. The Ohio University portion of the Hockhocking Adena Bikeway has been repaired and resurfaced in a two-phase project; a Dero Fix-It Station was installed at the edge of Tailgreat Park; and all new and renovation building projects have installed bicycle racks. The City of Athens has also installed bike lanes on commuting routes to the university.

City of Athens Mayor Steve Patterson and Ohio University President Roderick J. McDavis announced a pilot partnership that will allow the Ohio University ID to serve as a fare card for free unlimited travel on the Athens Public Transit (APT) system beginning July 1, 2016.



# Transportation Benchmarks, next steps

#### Phase 2:

- 2032: 90% of all student, faculty, and staff vehicles registered with a parking pass will be classified as LEFE
- 2032: 90% of students/40% of employees will use of multiple Occupancy Vehicle as their primary method of transportation
- 2032: Reduce total (student, faculty, staff) commuter emissions by 50% below 2013 levels by introducing alternate transportation options and incentive programs
- 2032: Reduce GHG emissions impact from business travel by 40% below 2012 levels
- 2032: Continue to increase overall fleet fuel economy by 5% per year
- 2032: All OHIO vehicles to meet or exceed current federal fuel efficiency standards



#### Strategy Spotlight: Sustainable Transportation Infrastructure

Left: A bicycle repair station and new bike racks were installed near Silas Bingham House. Right: Ohio University celebrated the reopening of its portion of the **Hockhocking Adena** Bikeway in July. The Bikeway was repaved along the University's portion of the path. The Bikeway now offers a smooth ride for bicycle commuters to access campus.

#### **Obstacles:**

- Staffing for transportation mode survey was difficult to secure, so data was incomplete and/or unreliable.
- Personal vehicle data is difficult to verify.
- Campus community has presented a reluctance to reduce single-occupancy vehicle commuting.

#### Phase 3:

2050: Reduce total fleet and departmental car emissions by 60% below 2012 levels by continuing new procedures and incentives programs

#### Phase 4:

2075: 0 net emissions from institutional transportation practices on all campuses





#### Next Steps:

- Access and analyze Single Occupancy Vehicle (SOV) surveys to determine modes of transportation currently used and favored on campus.
- Educate campus community on alternative transportation options.
- Pursue funding for a bike share program and a commuter tracking and incentive program.
- Provide incentives for alternative transportation.
- Require commuters to report vehicle's "Year" on the permit application so that LEFE status can be tracked.

Transportatio

Reporting Body: Transportation and Parking Services

# pledg io luce. m chegrid #going off 1 the 8 The Sustainable Living Floor participates in the Call to Sustain Campaign

**Education and Outreach** 

# Education and Outreach Phase 1 Benchmarks

#### Phase 1:

- 2015: Establish and implement assessment of baseline awareness and knowledge of carbon neutrality issues for the university community as a whole
- 2015: Establish and implement assessment of baseline awareness and knowledge of carbon neutrality issues for incoming students. This assessment is to be repeated annually
- 2015 and ongoing: Expand and implement new university-wide programming and curriculum efforts aimed at increasing greenhouse gas emissions awareness
- 2018: Repeat university-wide assessment of awareness and knowledge of carbon neutrality issues

#### **Progress Highlights:**

A Sustainable Living Floor was opened in Luchs Hall in Fall 2015. Weekly programming for floor residents is supported by the Offices of Sustainability and Housing & Residence Life.

A Carbon Neutrality Literacy survey was conducted and made available to the entire campus community in February 2016.

A new Sustainability Studies Theme (groups of related courses): Thriving in the Anthropocene is now available through the College of Arts & Sciences.



#### Progress Overview:

- Carbon Neutrality Literacy Survey data reveals that the overall Ohio University literacy rate for sustainability is 73%, earning a passing grade of C.
- University –wide programming and curriculum efforts related to greenhouse gas awareness have been greatly expanded. Some examples include:
- The Common Experience Project on Sustainability is in its fourth year at Ohio University. The ongoing Sustainability Film Series is one of the highlights of this project.
- Sampling of new courses:
  - ES4900/5900\*: Sustainability Implementation
    \*To transition to ES4832/5832 in Fall 2016
  - ♦ MKT 4900: Sustainability Marketing
  - ◊ ART 4900: Art & Science
  - ◊ T3 4850: Sustainability Citizenship
  - ◊ UP 4900: Strategic Sustainability in Sport
  - Center for Energy, Economics and the Environment (CE3) brown bag lunches each Friday frequently cover topics related to climate and carbon neutrality.

**Education and Outreach** 

Event flier from a Sustainable Living Floor event

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# Education and Outreach Benchmarks, next steps

#### Phases 2 and 3:

• 2028: Reassess awareness and knowledge of carbon neutrality issues again and repeat at 5-year intervals throughout the implementation of the Climate Action Plan with the goal of achieving and maintaining a 90% "passing rate" on such assessments for the university community, ultimately reflecting awareness of climate neutrality efforts

#### Strategy Spotlight, Carbon Neutrality Literacy Surveying:

As a mandate of the Climate Action Plan, the campus community was surveyed to generate baseline data regarding carbon neutrality literacy rates. The overall literacy rate data is offered to the right, though the full report and findings of that survey can be found online at www.ohio.edu/ sustainability/Data.cfm.



#### **Obstacles:**

- Determining the most appropriate metrics for assessing carbon neutrality awareness and knowledge took time and research. It was also necessary for us to push the surveying period to February (despite a 2015 target date) since our Sustainability Literacy surveying occurs in the fall and we didn't want to induce survey fatigue.
- Revising and updating the Climate Action Plan Education and Outreach section will be necessary for the future so as to make this reporting section, and associated implementation efforts, more robust and meaningful.
- Identifying "sustainability liaisons" in academic departments who can report new courses and research projects related to carbon neutrality to the Office of Sustainability has proven difficult. More resources need to be spent on recruitment.
- SOUL and other relevant groups have struggled in creating compelling and interesting outreach to students, faculty and staff, including for use in upcoming public dashboards and websites. Unsolicited interest in these topics appears low.

#### **Next Steps:**

- Revise Education and Outreach benchmarks to include additional numerical goals, and a reporting body from an academic unit or governing body.
- Add public-facing energy and carbon emissions dashboards in academic buildings and residence halls.
- Update list of Sustainability –focused courses, and add a sub-list of carbon neutrality-focused courses.
- Combine the Carbon Neutrality Literacy survey (currently conducted in February) with the Sustainability Literacy Survey (currently conducted in August) and reassess changes to literacy and values each year in October, near Campus Sustainability Day.

#### Reporting Body: Sustainable Ohio University Leaders (SOUL)

# Walter International Education Center

The Walter International Education Center made possible through the generosity o Robert D. and Margaret M. Walter

> and Sigma Chi Fraternity. This location was the former site of the Sigma Chi chapter house from 1949 to 2003.



#### **Construction and Design Benchmarks**

#### Phases 1-4:

• 2075: 0 net emissions from Construction and Design - All new construction and renovations to implement carbon neutral practices

#### **Progress Highlights:**

A Design and Construction Standards Team was created in December 2015 to update the institution's published Standards and to develop an archive of source documents which will, in part, address energy strategies for new and renovated buildings during design and construction project phases.

Ohio University has completed three LEED-certified projects and another seven projects are registered with the certification goal of LEED® Silver.

#### Progress Overview:

- OHIO currently does not track the emissions associated with construction projects. No known tracking mechanisms currently exist for such an effort. It is suggested that the development of a convenient tracking mechanism be associated with a university-sponsored class project.
- Major construction and renovation projects are expected to have a LEED<sup>®</sup> (Leadership in Energy and Environmental Design) green building program analysis evaluation.
- New construction and renovation projects budgeted at or above \$2 million are required to meet or exceed the LEED Silver<sup>®</sup> certification level. Current LEED<sup>®</sup> certification requires projects to demonstrate a 10% improvement in the proposed building performance rating for new buildings, or a 5% improvement in the proposed building performance rating for major renovations to existing buildings, compared with the baseline building performance rating. This baseline is calculated according to the building performance rating method given by ASHRAE Standards.
- Projects budgeted under \$2 million will employ an equivalent LEED-based approach.
- Projects consisting only of infrastructure, equipment, furnishings and systems will be evaluated for LEED applicability.
- Sustainability was incorporated into all recent Master Planning efforts (Campus, The Ridges and Utility).

#### Leadership in Energy and Environmental Design (LEED):

#### LEED Certified Buildings on all campuses:

- 2013: 15 Park Place Walter International Education Center (Silver)
- 2014: Ohio University Tech Studies Addition in Chillicothe (Certified)
- 2015: Scripps College of Communication: Phase 1 (Silver)

#### **PROJECTED LEED Certifications on the Athens campus:**

- 2016: Nelson Dining Renovation (Silver); Boyd Dining & Campus Market (Silver)
- 2016/17: Bush Hall Renovation (Silver); Tupper Hall Renovation (Silver); Ohio University Student Housing: Phase 1 (Silver); Scripps College of Communication: Phase 2 (Silver)
- 2017/18: The Patton College: McCracken Hall Renovation (Silver/Gold); Jefferson Hall Renovation (Silver); Grover Center Renovation (Silver)
- The projected LEED<sup>®</sup> certification levels in parentheses are goals for that project and are subject to change.

#### Next Steps:

- Ohio University will remain interested in providing a LEED<sup>®</sup> EBOM (Existing Building: Operations and Maintenance) or equivalent evaluation of existing buildings on the Athens Campus.
- The Construction and Design benchmark is currently too vague to accomplish any strict measurement or verification. It is recommended that more specific goals are identified in this area so progress toward constructionrelated carbon neutrality can be more clearly defined and analyzed.

Reporting Bodies: Architecture, Design & Construction; University Planning and Space Manage-

ment; Facilities Management; Office of Recycling and Refuse

OHIO

WellWorks employees discuss a project proposal with Sustainability Specialist Elaine Goetz at the Sustainability Expo

EDITATION

#### **Goals and Objectives:**

- Provide the campus community with regular and consistent information regarding sustainability efforts at Ohio University
- Educate campus community about the Sustainability and Climate Action Plans
- Train staff/faculty on new or newly enforced policies relating to sustainability
- Offer staff/faculty no-cost professional development experiences

#### About:

A primary recommended strategy as originally outlined by the Behavior Change and Implementation Management Committee was the development of a liaison group called Sustainable Ohio University Leaders (SOUL) which could help monitor both Education-based goals and Implementation-based goals of this section of the Plan. SOUL was formed immediately after the approval of the Climate Action Plan and has been actively pursuing the goals of this portion of the Plan ever since.

Education is a core tenet of SOUL and informing the campus community about progress toward sustainability goals is a focus point of SOUL meetings. As SOUL started developing, each meeting would focus on a particular sub-group of the Sustainability Plan. The participants would then discuss each relevant benchmark and identify challenges, changes and potential action steps. Recently, SOUL meetings have transitioned to focus on offering a more in-depth exploration of various topics, often paired with one or two guest speakers presenting on accomplishments and challenges.

SOUL, with support from the Office of Sustainability, also sends out bi-weekly newsletters to SOUL members and anyone registered on the Office of Sustainability Listserv. These newsletters include a compilation of upcoming sustainability-related events at OHIO or Athens, sustainability in the news and any other relevant announcements.

The Office of Sustainability and SOUL decided to create a sustainability implementation environmental studies course in which students work on a semester-long sustainability project while learning about ways to succeed in a sustainability-focused career. Originally offered as a practicum course (ES4900/5900), it has been awarded full-time status beginning Fall 2016 (at which time it will transition to the course number: ES4832/5832)

#### **Obstacles:**

Regular attendance at SOUL meetings, especially from University employees, has been low. Finding a time to accommodate student and employee schedules has proven difficult.

Multiple professional development sessions have occurred since the Climate Action Plan was approved, though student and employee needs vary greatly, making programming efforts inefficient.

#### **Next Steps:**

- Experiment with outreach and recruitment strategies to help increase name recognition and SOUL membership.
- Continue to host SOUL meetings focused on timely topics that interest the OHIO community, consider surveying community to identify such topics.
- Explore additional professional development opportunities to incentivize students, faculty and staff to attend.

#### **Progress Highlights:**

SOUL's Fall 2015 Energy Efficiency meetings included guests such as Joel Baetens (Director of Utilities), Marty Paulins (Director of Transportation and Parking Services), Lynnette Clouse (Senior Project Manager for Architecture, Design and Construction), Scott Miller (Director of Energy and Environmental Programs, Voinovich School), and Joseph Lalley (Senior Associate Vice President for Information Technology and Administrative Services).

SOUL teamed up with several courses this past year, including Sustainability Implementation and Sustainable Marketing, to implement a program called the "Sustainability Expo" More information is available on the following page.

Professional development sessions on job searching (student focused), resume building (student focused) and home energy efficiency (employee focused) have been offered since the approval of the Climate Action Plan.

Reporting Bodies: Office of Sustainability, Ecology and Energy Conservation Committee

# **SOUL Implementation Efforts**

#### **Goals and Objectives:**

- Support the Implementation and overall success of the Ohio University Sustainability and Climate Action Plan
- Maximize communication opportunities and place implementation responsibility back on the departments
- Generate connections with various individuals and units across campus

#### **Progress Highlights:**

The introduction of the Sustainability Expo each semester has been a great pathway for connecting with a diverse range of units across campus and has provided us with the capabilities to pursue the implementation of various benchmark goals. The first Expo, coordinated by SOUL, was held in September 2015 and the second was held in January 2016.

At the event, various academic and administrative units across campus propose projects for students to take on for a semester. Students and presenters talk with each other to determine if they would like to work together, and final assignments are given in the following days. Students spend the semester supporting the unit which proposed their project by offering sustainable solutions to obstacles or problems faced. It is anticipated this expo will continue to grow each semester.

#### **Progress Overview:**

The implementation aspect of SOUL has largely worked by assisting other departments or offices in their efforts to improve sustainability. SOUL provides a space for brainstorming and problem solving about various challenges at Ohio University, and it also acts as a place to facilitate inter-departmental connections for cooperative sustainability action.

SOUL has also created a centralized place for sharing information about actions conducted across campus to improve sustainability. Basecamp, an online organizing platform, is a tool used to track sustainability projects and encourage regular input from students, faculty, staff and alumni who aren't able to come to SOUL meetings.

With the implementation of the Sustainability Expo, SOUL has developed a way to pursue intersectional sustainability action led by various offices and departments.

#### Next Steps:

- Pursue further collaboration with university units and student organizations, including establishing office/department liaisons.
- Generate more enthusiasm about SOUL through marketing and outreach.
- Explore paths to increase the importance of SOUL in the implementation process.
- Create professional development opportunities to incentivize faculty and staff.
- Continue efforts on projects pursued by students in previous semesters.

#### **Obstacles:**

Since SOUL strives to enable and support the implementation of sustainability projects and initiatives in all University units, but is not awarded the position to designate action steps to individuals and departments, it is difficult for SOUL participants to generate a sense of responsibility to the group or the greater sustainability efforts on campus. More enthusiasm should be generated about the unique structure of SOUL. By increasing participation, the group's ability to support departments and offices through project support and educational programs can be improved.



# **Next Steps**

In addition to the "Next Steps" identified in each of the sections of this report, there are larger-scale efforts that also must happen to ensure that the University's sustainability-related values and goals remain current, relevant and manageable. Therefore, the 2016 calendar year was announced as a revision year for both the Climate Action Plan and Sustainability Plan. In response to community requests for a longer revision process, a second revision phase was added for the 2017 calendar year.

#### **Revision Timeline**

PHASE ONE:

March 7-May 1, 2016: Public Comment Period, Phase 1

May 2-August 2, 2016: Review of recommendations by interested parties, development of a draft proposal

August 15, 2016: DRAFT submission of the revised documents by the Ecology and Energy Conservation Committee (EECC is the "monitoring agent" of the Sustainability Plan and Climate Action Plan).

September 2016-November 2016: EECC discussion and voting on amendments will be made to both documents.

December 2016: Formal submission of Phase One changes are submitted to President McDavis for final approval of the proposed changes. Implementation will begin immediately upon approval.

#### PHASE TWO:

May 1, 2016-May 1, 2017: Public Comment Period Phase 2

May 2-August 2, 2017: Review of recommendations, development of a draft proposal

August 14, 2017: DRAFT submission of the revised documents by the Ecology and Energy Conservation Committee (EECC is the "monitoring agent" of the Sustainability Plan and Climate Action Plan).

September-November 2017: EECC discussion and voting on amendments will be made to both documents.

December 2017: Formal submission of Phase One changes are submitted to Ohio University's President for final approval of the proposed changes. Implementation will begin immediately upon approval.

#### **Proposed Changes**

While the aforementioned revision process will seek public input to changes,

a number of necessary revisions have already been identified. Those revisions include, but are not limited to:

- Revise Energy and Operations section of both the Climate Action Plan and Sustainability plan to reflect infrastructure changes that will shift all energy usage to electricity in preparation for alternative energy systems. This will require changes to multiple benchmarks/goals.
- Change "Construction and Design" to the University-recognized "Architecture, Design and Construction."
- Make revisions to Waste Reduction and Recycling to reflect institutional goals to become a Zero Waste institution.
- Consider the feasibility of new benchmarks in the Sustainability Plan which address issues such as water conservation and increase community outreach efforts.
- Edit various grammatical, metric, and title errors that exist in the current documents.
- Update, various titles or offices currently listed as "reporting bodies" which have changed since the original release of the Sustainability Plan and Climate Action Plan.

# **Additional Information**

#### Changes from previous reports:

Since the last formal report of the Sustainability Plan and Climate Action Plan, Ohio University has officially become a reporting agent to the Sustainability Tracking, Assessment and Rating System (STARS), sponsored by the Association for the Advancement of Sustainability in Higher Education (AASHE). In its first year of reporting, Ohio University was named a STARS Silver Reporting Institution.

This national sustainability rating tool has allowed Ohio University to more comprehensively compare itself to its peers throughout the nation. Such assessments have led us to be able to more aggressively approach sustainability-related projects relating to academics, employee engagement, student living experiences, energy reduction and more. Though, the reporting process for STARS is quite labor-intensive. In an effort to better accommodate the reporting needs associated with all three reporting efforts (STARS, Climate Action Plan and Sustainability Plan), Ohio University instituted a tri-annual reporting procedure for formally published and publicized reports. The upcoming schedule of formal reports is as follows:

> Spring 2016: Climate Action Report Spring 2017: Sustainability Plan Report Spring 2018: STARS Report Spring 2019: Climate Action Report The reporting cycle then continues on a rotating basis

It should be noted that, between formal publication of reports, progress toward goals is continually occurring and being reported on at meetings of the Sustainable Ohio University Leaders (SOUL). SOUL meetings are open to all students, faculty and staff. Members of the campus community are encouraged to attend these meetings to gain insights into current efforts and receive progress reports from Reporting Bodies throughout the year. The full SOUL schedule can be viewed online at: www.ohio.edu/sustainability/ soul.cfm.

#### Note on Reporting Data:

In an effort to offer a timely report, this report reflects quantitative data such as greenhouse gas (GHG) emissions and procurement data from the previous three fiscal years (though, whenever possible or relevant, current and/or additional fiscal year data is also provided). Since reporting for some quantitative data requires a significant amount of time, the completion of that data is not ready for reporting until January the following year. Where possible, we have noted the date discrepancies. Qualitative data presented here is offered as a recap of the past three fiscal years, present year included.

#### **Publication Medium:**

**This document will only be published electronically.** This format was selected in an effort to deter unnecessary printing of large documents. The excessive paper, ink and energy generated from printing and distributing any reporting documents were deemed contradictory to the Office of Sustainability's mission.

#### Feedback:

Feedback can be submitted electronically at the Office of Sustainability's website.

# Acknowledgments

The success of the Ohio University Climate Action Report, and associated implementation efforts, is greatly dependent on the leadership and vision of all faculty, staff and students on all Ohio University campuses. A great deal of our efforts are augmented and complemented by various leaders and invested parties from within our campuses and surrounding communities.

> A special thanks is extended to those entities mentioned as a "Reporting Body" for one or more Benchmarks in this plan.

#### In particular, the following individuals assisted in the acquisition and interpretation of departmental data:

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Brody Bauers, Senior Project Manager

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Andrew Ladd, Manager of the Office of Recycling and Refuse

Joseph Lalley, Senior Associate Vice President for Information Technology and Administrative Services

Steve Mack, Director of Facilities Management

Diana McGrew, Assistant Director for Strategic Sourcing and Operations

Olivia Miltner, Undergraduate Student and SOUL Coordinator

Claire Naisby, Building Systems Integration Manager

Rich Neumann, Director of Culinary Services

Marty Paulins, Director of Transportation and Parking Services

Erin Robb, Auxiliaries Procurement and Contract Manager

David Simon, Planning Analyst

Eddie Smith, Graduate Student

Stephen Wood, Executive Director of Facilities Management

Hallie Zarbakhsh, Undergraduate Student employee in Office of Sustainability

# Acknowledgments

#### **Ecology and Energy Conservation Committee**

The Ecology and Energy Conservation Committee serves as the monitoring agent to the Climate Action Plan. The 2015-2016 members and their departmental associations are listed here.

Nancy Manring, Political Science (EECC Chair) Annie Laurie Cadmus, Office of Sustainability Ana Rosado Feger, Business Andrew Ladd, Recycling and Refuse Clifford Hamilton, Environmental Health and Safety Scott Miller, Energy and Environmental Programs, Voinovich School Alexei Davydov, Mathematics Jennifer Romero, Student Accessibility Services Karen Deardorff, Communication Studies Abraham Kitchen, Undergraduate Student Olivia Miltner, Undergraduate Student Paige Walters, Graduate Student Paul Logue, Community Representative

#### **Office of Sustainability Staff**

Office of Sustainability staff collect, interpret and report annually on the Sustainability Plan. Members of the 2015-2016 staff who helped make this report possible are listed here.

Annie Laurie Cadmus, Director of Sustainability Elaine Goetz, Sustainability Specialist Samuel E. Crowl, Sustainability Project Coordinator Kristeena Blaser, Special Projects Coordinator Elizabeth Rose, Education and Outreach Coordinator Cheyenne Fenstemaker, Lead Undergraduate Staff Daniel Doak, Reporting Coordinator, PACE Employee Olivia Miltner, Sustainability Implementation Coordinator Hallie Zarbakhsh, Sustainability Grants Manager

#### **Sustainable Ohio University Leaders**

Sustainable Ohio University Leaders (SOUL) are the implementation arm of the Sustainability Plan. We extend our gratitude to any student, faculty or staff member who has attended a SOUL meeting. We encourage all members of the campus community to join us at <u>upcoming meetings.</u>

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For additional information about the Climate Action Plan, the planning process, and for a PDF of the original 2012 version, please visit:

www.ohio.edu/sustainability



Athens Beautification Day draws a large crowd for this zero waste event