

**Drake University**  
**Climate Action Plan**

**Drake University Sustainability Committee**

**June, 2013**

***Drake University Sustainability Committee Mission Statement:*** *The mission of the Drake University Sustainability Committee is to foster socially, economically, and environmentally sustainable practices and culture among staff, faculty, and students at Drake. The committee will serve to make policy recommendations to the president and the university community and will assist with the implementation of those policies regarding ways for Drake to more fully to realize the goal of long-term sustainability.*

## Introduction

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President David Maxwell is one of the charter signers of the [American College and University President's Climate Commitment](#), a statement pledging action to help fight global warming through better conservation practices on campus. Inspired by our school colors of blue and white, we have named Drake's sustainability program "Blue is Green." Through the program, we work to minimize Drake's environmental impact in every way we can.

### Greenhouse Gases

Pursuant to the President's Climate Commitment there are six relevant Greenhouse Gases that we monitor: carbon dioxide, methane, nitrous oxide, perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF<sub>6</sub>). The amount of all of these gases emitted can be represented as the amount of carbon dioxide that would be required to produce an equivalent warming (called CO<sub>2</sub>e). Due to its operations Drake has the ability to significantly reduce its impact on the first three gases – carbon dioxide, methane, and nitrous oxide. PFCs and HFCs are released as a result of operations of refrigeration, air conditioning, and fire suppression systems, and in some cases economic alternatives are currently unavailable. Sulfur hexafluoride is primarily released during the normal operations of large electrical equipment, and so Drake's emissions may come in the form of electricity purchasing. Because our emissions of the PFCs, HFCs, and SF<sub>6</sub> are small, our plan is to focus initially on the first three emissions where clear alternatives exist and we can have a large early impact. As technology improves and our emissions elsewhere are reduced, we will explore and implement reductions in the latter three.

### Climate Action Plan Requirements

1. Target date for achieving climate neutrality as soon as possible.
2. Interim targets for goals and action that will lead to climate neutrality
3. Actions to make climate neutrality and sustainability a part of the curriculum and other educational experiences.
4. Actions to expand research or other efforts necessary to achieve climate neutrality
5. Mechanisms for tracking progress on goals and actions.

### Responses to the Climate Action Plan

1. We have set an outside date to achieve climate neutrality by 2050. We have also established an interim target reduction of 20% GHG emissions for every 10 years or less.
2. We completed an initial Carbon Footprint in October of 2008. We have scheduled a second Carbon Footprint for May 2013 and are working toward scheduling GHG emissions reports and regularly maintaining an inventory.
3. We are in the process of establishing a mechanism to track and assess our progress on the Drake goals and actions.

### Actions

The first Provisional Carbon Footprint was completed in October 2008. The temporal boundary included campus information from June 1, 2006 to May 31, 2007. The Footprint outcome of the inventory indicated that Drake University is directly responsible for 16,419 tonnes CO<sub>2</sub>e (5.21 tonnes per student), and indirectly responsible for an additional 3,245 tonnes from commuting and air travel, and 8,820 tonnes from food service. The Carbon Footprint included the purchase of electricity, natural gas, fleet and equipment operations, student, faculty and staff commuting, grounds keeping, and chemical usage. This number did not include special campus events.

Electricity consumption was the largest source of emissions, accounting for 47% of total emissions. Natural gas consumption was also a large source of emission, amounting to approximately 21% of the total (figure 1). Our transportation emissions resulted from student, faculty and staff commuting to and from Drake University, air travel, and fleet. Miscellaneous was related to solid waste decomposition, grounds keeping, and chemical usage.

### Carbon Dioxide Equivalent (CDE)

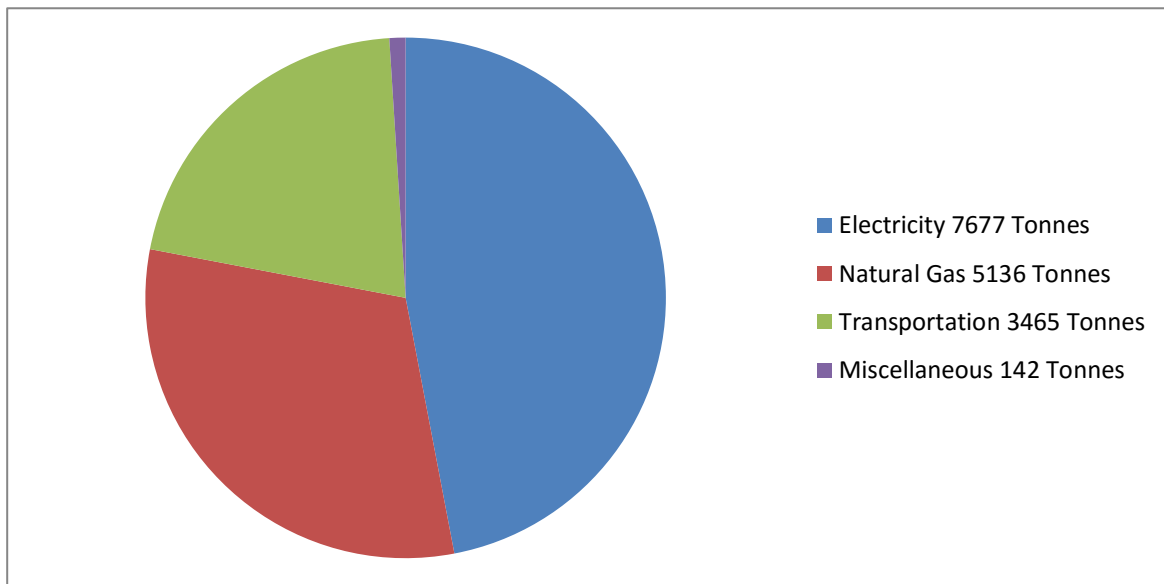


Figure 1

### Scope of Drake University Footprint by Greenhouse Gases

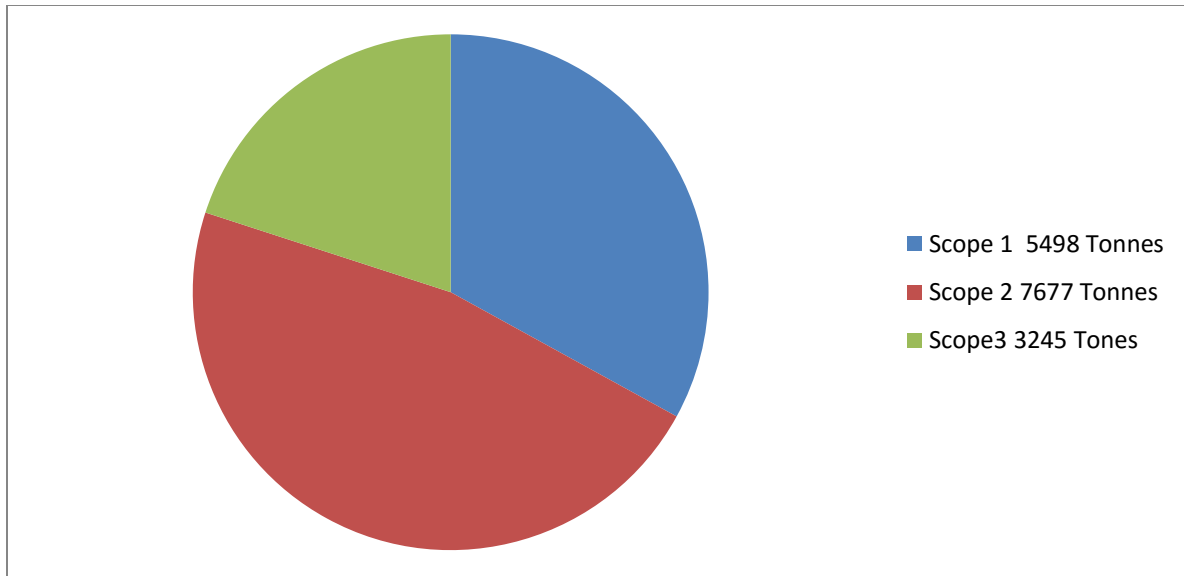


Figure 2

**Scope 1** Direct GHG Emissions – sources owned or controlled by Drake University to include consumptions of fuels, combustion of equipment, leakage of refrigerants and chemicals used in grounds department.

**Scope 2** Imported Emissions – from the purchase of power from sources not owned or controlled by Drake University to include the purchased of electricity, chilled water, and natural gas.

**Scope 3** Indirect Emissions – from the operational influence of Drake University, but not owned or controlled to include travel, commuting, events and lifestyle activities.

### Recent consumption

As can be seen in Figures 3 and 4, natural gas and electricity usage fluctuate annually, but average just under 90,000 MMBTUs for natural gas, and just under 20,000,000 kWh for electricity. While there may be a slight downward trend in both categories, we expect that trend to become more pronounced as we implement this climate action plan.

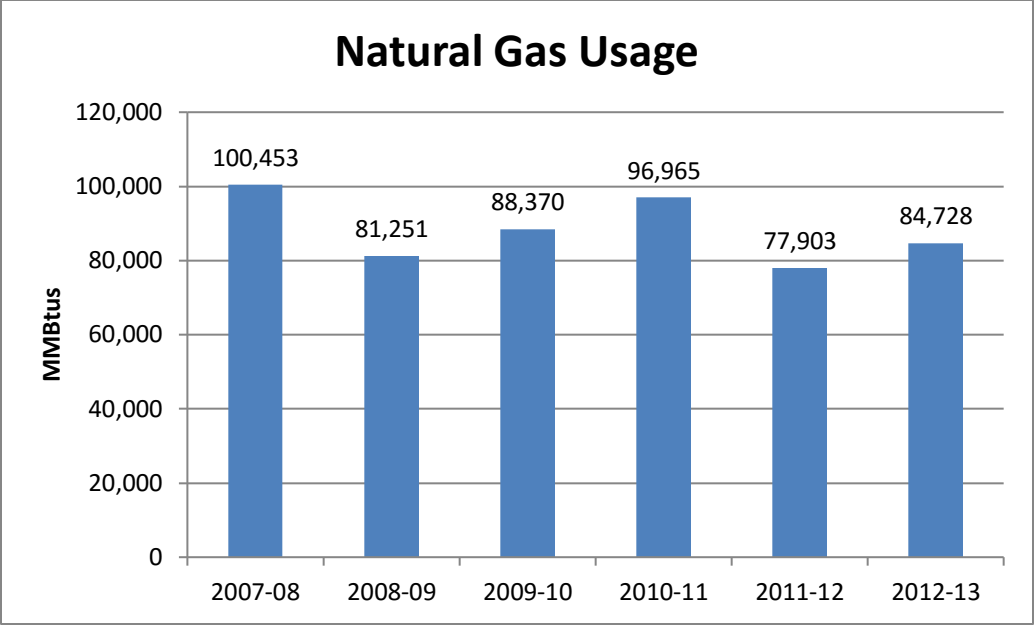


Figure 3. Natural gas usage from 2007-2013.

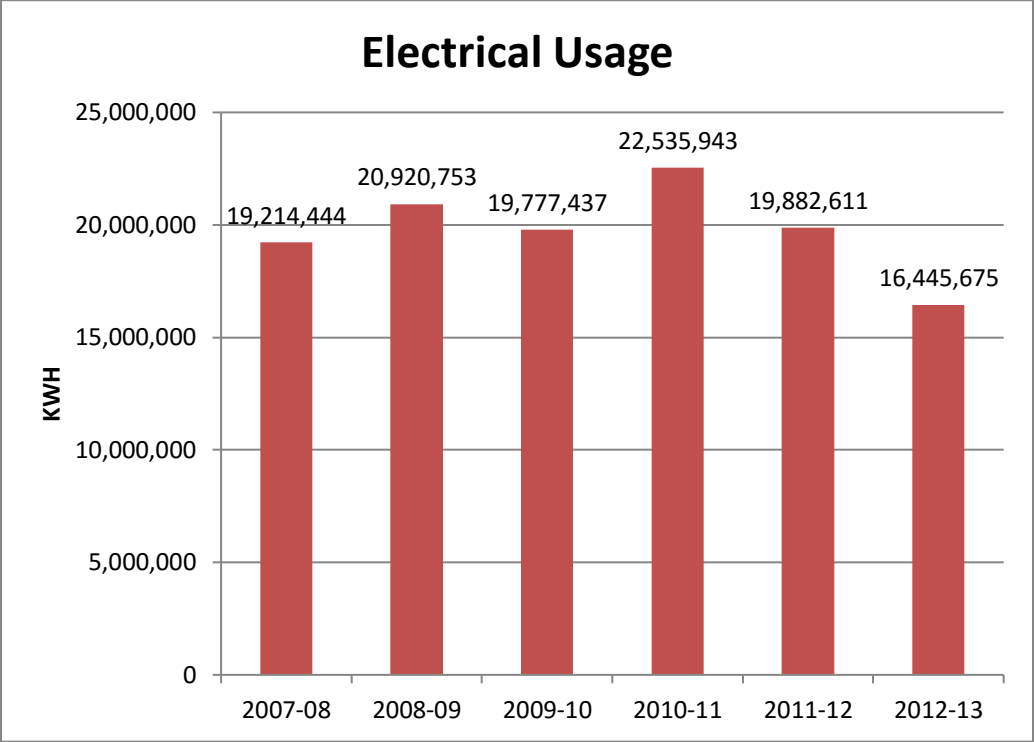


Figure 4. Electricity usage from 2007-2013.

**Essential Steps**

1. **Measure Emission** report climate impact.
2. **Reduce Emissions** start with largest emission sources.
  - a. **Commitment.** Includes leadership, resources, training, creative efforts, promote change, fire up enthusiasm of stakeholders, reward savings, and marketing.
  - b. **Plan.** Create a plan for energy efficiency, carbon reduction, establish goals, indicators and metrics to gauge progress and share with university stakeholders.
  - c. **Do the Doable.** Take immediate low and no-cost actions turn off the lights, lower the thermostats, use shades, clean filters, clean boiler tubes, car-pool, walk, ride the bus, and change lighting habits, lamps and fixtures.
  - d. **Energy Procurement.** Utilize strategic energy purchasing to reduce cost.
  - e. **Audit** campus and building energy performance, use Mid-American energy to help the University identify, quantify, perform cost-benefit analysis, to prioritize all potential energy management and carbon improvements.
  - f. **Funding.** Tap into federal, state, utility and private funding sources to focus on carbon reduction.
  - g. **Projects.** Carbon reduction projects are highest priority.
  - h. **Manage.** Track, report, and review emissions and carbon reduction projects on routine bases.
3. **Replace Emissions** may either purchase renewable energy or develop onsite renewable energy generation.
4. **Neutralize Emissions** by purchasing offsets, sequestration habitat, or other neutralization techniques.

Drake University continues to push toward becoming a zero emission campus. Drake University has been committed to energy efficiencies since the early 1990's. The increase in energy efficiency of all electrical and mechanical equipment will continue to reduce our carbon emissions. Drake has made conservation a top priority on the path to carbon-neutrality. We continue to find other ways to manage energy more effectively and efficiently.

**Projects completed before 2009:** installation of motion sensors in all academic and administrative buildings, vending machine misers to reduce energy costs, use of compact fluorescent bulbs, purchase of energy star appliances, steam line replacement, expansion of Forest Ave Heating plant, decommissioning of Fine Arts Heating plant, and replacement of boilers with more energy efficient models.

**Projects completed since 2009:** Replacement of 28<sup>th</sup> Street with at-grade, permeable walkway; replacement of water cooled equipment on campus at the Fieldhouse; LEED-certified renovation of Hubbell Dining Hall; expansion of community garden south of campus. Drake is particularly proud of our implementation of the first major commercial single-stream recycling effort in Des Moines. Single-stream recycling improves compliance rates and total waste diversion because people are not required to sort materials.

## Buildings

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According to our 2008 carbon footprint estimate, lighting, heating, and cooling of buildings at Drake is the source of the majority of emissions on campus. Heating fuel consumption fluctuates significantly from year to year, but in 2007 natural gas accounted for 31% of Drake's carbon footprint. Electricity consumption is generally more stable, and electricity use was roughly 47% of the total footprint. Much of the electricity footprint went to support building systems, though some was used in outdoor lighting, grounds maintenance, and other needs.

### *Current Efforts*

- All office buildings utilize motions sensors to turn off unnecessary lights and vending machines.
- Temperature tolerances in Drake buildings have been changed where possible to allow for warmer summer temperatures indoors, and cooler indoor temperatures in the winter.
- Drake recently renovated our dining hall to LEED standards.
- All incandescent lighting on campus has been replaced with compact fluorescents or other options.

### *Future Efforts*

- All new construction on campus will be LEED certified at the Silver level or above. Renovation projects will also meet LEED standards wherever possible.
- Drake will improve monitoring of energy consumption through increased metering to allow us to more accurately target potential improvements as well as catch possible system problems.
- Drake will use this information to reduce our CO<sub>2</sub>e emissions from building systems by 20% per decade if possible.
- If it is not possible to reduce emissions directly, Drake will purchase offsets for the remainder of our commitment.

## **Electricity**

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Drake purchases almost all of its electricity from MidAmerican Energy, although an incidental amount is produced by portable solar generators maintained by the Student Services office. According to their website, at the end of 2011, 47% of production was fueled by coal, 26% by wind, 20% by natural gas and oil, and 7% by nuclear or other sources. However, two recent events are likely to dramatically reduce the carbon footprint of Drake's electricity consumption.

### **Energy fractions changing**

MidAmerican Energy recently settled a legal case with the Sierra Club and agreed to retire five of its coal plants in Iowa by 2016. These plants will either close or be converted to natural gas. The other two plants will be retrofitted with baghouses to reduce particulate emissions, though they will continue to burn coal. This will have an important impact on GHG emissions because coal is the least efficient fuel source used by MidAmerican from the perspective of kWh/ CO<sub>2</sub>e, so any reduction in the coal fraction will lead to an overall improvement in Drake's carbon footprint.

Also, MidAmerican Energy announced in May of 2013 that they would increase the fraction of energy generated from wind from 26% to 40% of generating capacity. If that change alone were applied to our current carbon footprint, it would reduce Drake's total CO<sub>2</sub>e emissions by 9%.

### **Energy Purchasing**

The latter point brings up an issue because MidAmerican sells some of the green energy credits that it produces via wind generation to other utilities that are looking for green energy. Thus, it is not correct to assume that just because MidAmerican produces 26% of its energy from wind that Drake's electricity footprint reflects this fraction. However, it does mean that the potential exists in our electricity purchase agreements to specify a high level of renewable energy, and Drake is committed to that path.

## Transportation

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According to our 2008 carbon footprint estimate, transportation is responsible for 21% of Drake's emissions. 73% of these emissions (15% of total) are from commuting to and from campus, 18% (3.8% of total) are from university-sponsored air travel, with the remaining 9% (1.9% of total) from university-owned vehicles and equipment.

### Commuting

Most of Drake's transportation emissions are from commuting to and from campus. These are Scope 3 emissions (indirect), and Drake is unlikely to be able to cut these emissions to zero without significant changes at the societal level that would drive individuals to choose carbon-free transportation options. We will not assume here that those changes are made, and so our Scope 3 emission targets will be short of net zero.

That said, our strategy with commuting will be to facilitate low-emission choices, with the goal of tipping the balance towards reduced impact from the Drake community. True zero-emission commuting would require either:

- 1) Members of the community live close enough to not require a motor vehicle to get to work. Because Iowa winters and road conditions make year-round bicycle commuting difficult, this probably requires that people live within a 5 to 10-minute walk from their offices or classrooms. In the Drake area, that means a radius of about five blocks from campus.
- 2) Those who aren't able to walk would need to use zero-emission vehicles, which probably means electric vehicles powered by an electrical grid based on solar, wind, and other non-fossil energies.

Lower-emission commuting could involve:

- 1) Seasonal or occasional biking or walking instead of driving.
- 2) Car pooling, which is especially important for distant commuters.
- 3) The use of public transportation.
- 4) The use of telecommuting for some activities.

To understand opportunities in reducing commuting via ride-share programs, Table 1 summarizes the driving distance of Drake faculty and staff (notice that driving distances are not evenly scaled). Assuming that full-time faculty and staff represent the bulk of commuting at Drake (they have the highest numbers, and many of the part-time faculty/staff come to campus one or fewer days per week), we will focus our analysis on them. Assuming that distance driven does not affect mileage (not a terrible assumption because Drake is very close to an exit for Interstate 235, so even nearby commuters are likely to use the highway), about half of the emissions from Drake faculty and staff come from those living 20 miles away or more (51% for faculty, 47% for staff), a distance at which the extra time required to pick up another rider becomes small (less than about 15%) relative to total trip time. Looking at this group of potential ride-sharers, 73% of

Table 1.

Drake Faculty/Staff Driving Distances

Distance (miles)	0-1	1-5	6-10	11-20	21-30	31-40	40+	Average
Full-time Faculty	75	62	111	23	16	8	12	9.6
Part-time Faculty	59	49	179	61	19	9	30	15.1
Full-time Staff	83	124	207	95	29	19	21	10.5
Part-time Staff	6	8	14	7	2	2	10	23.1
Temporary Staff	44	50	94	46	20	6	34	15.0



non-student commuters live within a few miles of at least one other non-student commuter. If we assume that a successful ride-share program resulted in the group of commuters living at least 20 miles away and within the same town as another Drake commuter, it would reduce emissions 20% without any technology conversion.

Student commuting distances are more variable than faculty/staff, and it is more difficult to estimate potential reductions. Students may be more price-sensitive than faculty/staff, and thus predisposed to ride sharing if networking is simplified and there are some financial incentives. Moreover, adding students to the mix is likely to increase opportunities for faculty and staff to find rideshares. On the other hand, their schedules also vary more, and so students may be reluctant to commit to a ride share. For our purposes, we will assume a 20% reduction from students as well from a ride-sharing program.

#### *Current Efforts*

- In 2008, Drake University partnered with Des Moines Area Rapid Transit (DART) to provide free bus passes to all Drake students and employees. The program is beneficial for the Drake community, but also provides a source of guaranteed revenue for DART. The Des Moines area is small enough that programs such as this can help DART to remain fiscally and politically viable, leading perhaps to a greater impact than a simple estimate of ridership miles would suggest.
- Drake, in partnership with Wells Fargo Bank and Iowa Realty, has an incentive program to encourage faculty and staff who are buying homes to do so in Drake's immediate neighborhood. When employees live nearby, commuting is reduced.
- In 2007 two new student residence halls were constructed at Drake. This created rooms for 494 students within easy walking distance of classes, thus reducing student commuting. The halls are also both within a block of a DART stop, so trips away from campus do not require a vehicle.
- Drake charges \$160 per year for day parking and \$250 for overnight parking stickers. This is a significant amount in Des Moines, and may discourage some from commuting via private car.
- Drake has installed bicycle racks throughout campus to encourage bicycle commuting during months when that is feasible and safe.

#### *Future efforts*

To encourage the transition to zero-emission commuting choices:

- Drake will provide a fixed number of free parking places for low-emission vehicles. The definition of low-emission will be subject to evolution, such that during initial implementation any vehicle which has an EPA-estimated city mileage of 45 mpg or greater will be included, but higher-mileage vehicles will have priority over lower-mileage vehicles, and electric vehicles will have priority over both. While it is true that electric vehicles might currently be responsible for a similar level of emissions as a low-emission fossil-based vehicle, electricity will be given priority as it helps to create the infrastructure necessary for a zero-emission economy.
- Drake will provide vehicle charging stations in designated parking places, with four for commuters and two for visitors.
- Drake will survey faculty to determine ways to encourage telecommuting when possible.
- Drake will work to continually improve the incentive program for faculty and staff living in the Drake neighborhood.
- Drake will explore ways to work with the Drake Neighborhood Association and others to improve the attractiveness of living in the Drake area.

We will assume a reduction in emissions of 5% by 2017 from the implementation of these changes, growing to 10% by 2022 due to the cumulative effects. We consider this a reasonable estimate, given that the single most distant faculty member is responsible for an estimated 3% of total faculty emissions currently. It is quite possible that the installation of a charging station would make commuting via an electric car possible

for some of the seven full-time faculty/staff commuters living 100 miles away or more, while that might have been beyond the range without the stations, and might make it more attractive for others.

In order to reduce the emissions from gasoline vehicles used in commuting, Drake will:

- Implement a ride-sharing program.
- Implement a short-term bicycle rental program
- Work with a local nonprofit organization to bring carsharing to Des Moines, and work to make it available to Drake students.
- Advocate for expansion of the local bus route to Bus Rapid Transit, which should encourage more public transportation use among members of the Drake community.

The ride-sharing program will involve a web portal designed to reduce the effort required to find other's interested in co-commuting. We expect that simply sharing this information will increase car pooling even without a significant incentive program. However, we will also provide free parking permits (a \$160 annual value) to one member of any car pooling group living 15 miles or more away. Only one member of the group will be allowed to purchase a parking permit. As discussed earlier, this program is expected to reduce commuting emissions by 20% within five years (2018), but not grow significantly after that.

The bicycle rental and carsharing programs would likely significantly reduce student commuting emissions because they would reduce the need for students to bring a car to campus. Many trips that students currently make in personal automobiles could easily be combined or eliminated, but there is little incentive to do so if a car is readily available. If students do not have a car, then they might be much more likely to use a personal or public bicycle, or learn to use mass transit, to avoid the small inconvenience and price of using a carshare when there are other options. Studies have shown that the first trip on a bus is the most difficult, and so on average each student we introduce to DART is likely to use the service multiple times while at Drake. We expect this effort to reduce student commuting emissions by 20% by 2020, resulting in an overall commuting emission reduction of 10%.

Total Scope 3 emission reductions by 2022: 40%. We will continue to explore options to reduce emissions even more, with a goal of 50% emission reductions in the commuting category by 2030.

### **University-Sponsored Air Travel**

Air travel is very important to Drake's ability to meet its mission. Faculty and staff must travel to distant conferences to improve their skills, disseminate their work, and network with others in their fields. Drake is also working hard to increase student travel abroad in order to instill an ethic of global citizenship, help students understand and appreciate other cultures, and improve career skills necessary in a globalized world. Thus, air travel will need to continue. However, these are Scope 2 emissions, and Drake must eventually become carbon neutral in this category.

#### *Current Efforts:*

Drake currently has no program that is intentionally designed to reduce carbon emissions from air travel.

#### *Future Efforts:*

In order to achieve this goal, we will:

- Implement a program encouraging faculty traveling to regional conferences to take public transportation. We will do this by expanding the travel budget available to those who choose bus or train travel.

- Ask all students and faculty arranging travel through Drake whether they wish to purchase carbon offsets.
- Improve teleconferencing technology so that it is a more viable option. We will also make an effort to better educate faculty on how to use this equipment.
- Require the purchasing of carbon offsets for travel after 2025, subject to cost.

Currently, Drake faculty and staff have a limited budget to travel to conferences. Often that means that Drake employees must pay for some expenses out of pocket. However, if we allow employees to go over this budget by up to the amount of the mass transit ticket, this could save employees between \$20 (for a bus to Chicago, for example) and \$200 (for a train to more distant venues). Without a nearby Amtrak station (the closest one is in Ottumwa, 85 miles away), the train travel is unlikely except under rare circumstances. There is the possibility that a proposed high-speed rail line will change that situation, but that is speculative and currently unlikely. We therefore expect most of those participating in the program to use bus transit to regional events. This program could save up to 5% of travel emissions by 2018, and significantly more if high-speed rail is implemented.

With carbon offsets currently available for under \$10 per trip, we expect that making them readily available will lead to a significant number of individuals purchasing them voluntarily. After an effort publicizing offsets, we expect a quarter of all trips to include voluntary offsets by 2018.

We expect improved telecommunication abilities to reduce travel by another 5% by 2018, especially in situations where delegations currently must travel to meet with foreign partners. The money saved by reducing airline travel will be sufficient to fund this part of the program.

Thus, we expect to reduce airline emissions 35% by 2018. Net emissions in this category will be reduced to zero by 2025, when offsets are purchased.

### **Drake Vehicle Fleet**

University-owned vehicles and equipment are responsible for 9% of travel-related emissions. These are Scope 1 emissions, and must be reduced to zero.

#### *Current Efforts:*

Drake currently considers vehicle mileage when making vehicle purchasing decisions, though it is only one of a number of decision variables.

#### *Future Efforts:*

By the summer of 2014, Drake will complete a feasibility study on the construction of a biofuel facility to be run off of waste food oils and other sources. These have proven viable at other institutions, and will allow some of our equipment to move toward net zero emissions even without being replaced.

Drake will institute an explicit policy of purchasing vehicles with the best feasible technology, though price considerations will continue to be important. As technology improves, benefits from this program will increase. By 2025, we will shift to an all-electric policy for new purchases, such that by 2030 all Drake vehicles will be either electric or run off of biodiesel.

Drake currently owns a small fleet of gasoline-powered golf carts. As these carts reach the end of their useful life, they will be replaced only with electric (or other low emission) carts.

The conversion to a fleet that includes significant electric vehicles will reduce emissions immediately because these vehicles are more efficient than fossil-powered vehicles. MidAmerican Energy is also in the

process of converting away from coal-fired power plants, further reducing the impact of electric generation. More importantly, these will provide a very important load-balancing function, where excess electricity can be used to charge vehicle batteries. This will reduce the cost of the installation of alternative energy sources, either for a centralized producer like MidAmerican or for Drake if is able to purchase a significant solar array producing variable power.

With these efforts, we expect to reduce our fleet and equipment emissions steadily until they reach net zero in 2035.

## Food Service

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Daily meal service for Drake students was responsible for 7290 tonnes CO<sub>2</sub>e in 2007. Although Drake University is not directly responsible for food service, we work closely with Sodexo to produce as environmentally sensitive a product as possible.

### *Current Efforts*

- In 2013, Drake began a composting program for food waste.
- Drake dining facilities are tray-less as a way of reducing washing waste.
- Sodexo's Quad Creek Café offers eco-packaging for single use service.
- All facilities promote the use of reusable containers.
- Sodexo purchases local fruits and produce when local producers are able to meet company regulations.
- Drake hosts an annual farmer's market on campus, and helps to support a weekly farmer's market just across the street from campus.

### *Future Efforts*

- In the fall of 2013, Drake will cease selling bottled water on campus (except at sporting events). The university has installed water filling stations for reusable bottles at numerous sites around campus, and will continue to increase the convenience of cold, filtered, Des Moines city water.
- We will continue to investigate efforts to increase the availability of local foods on campus.
- Through education campaigns, we hope to help empower students to make more sustainable food and packaging choices.

## Education

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Drake University's commitment to achieving carbon neutrality hinges upon the education of its students, faculty, staff, administrators, trustees, and the larger Drake community in the key principles and values associated with sustainability. These include, but are not limited to:

- Systems thinking
- Interdisciplinary study
- Ecological literacy
- Environmental stewardship
- Sustainable economics
- Innovation and creativity
- Academic Inquiry

- Multiple perspectives
- Cultural and Biological Diversity
- Cultural preservation and transformation.
- Developing a sense of place.
- Responsible local and global citizenship

These principles and values are consistent with Drake University's mission, which is to provide an exceptional learning environment that prepares students for meaningful personal lives, professional accomplishments, and responsible global citizenship.

In order to achieve carbon neutrality, Drake University has developed the following sustainability education goals:

### **Drake University Sustainability Education Goals**

I. To advance innovative educational research methodologies and pedagogies in environmental and sustainability education.

II. To educate for an ecologically literate citizenry and to advance civic engagement in solving sustainability issues.

III. To provide professional development for faculty, staff, administrators, and trustees in environmental and sustainability education.

IV. To provide opportunities for faculty, administrators, staff, and students from across the campus to engage in scholarly activity, teaching, and service related to sustainability.

### **Undergraduate Level**

Drake offers a large number of courses that are consistent with the Sustainability Education Goals (SEG).

#### ***Classes Offered by Drake University***

At the undergraduate level, these courses currently include:

BIO 92: Introduction to Ethnobotany  
 BIO 98: Introduction to Primatology  
 BIO 108: Emerging Infectious Diseases  
 BIO 110: Iowa Natural History  
 BIO 115: Aquatic Biology  
 BIO 117: Ecology  
 BIO 120: Ecosystem Ecology  
 BIO 130: Ornithology  
 BIO 152: Field Botany  
 BIO 167: Population and Community Ecology  
 BIO 168: Limnology  
 ECON 109: Public Economics  
 ECON 175: Developing Economies  
 ENSP 15: Introduction to Environmental Science  
 ENSP 22: Meteorology: The Science of Weather  
 ENSP 27: Environmental Hazards  
 ENSP 35: One Earth: Global Environmental Science  
 ENSP 41: Principles of Geology

ENSP 50: Sustainable International Development  
ENSP 51: Energy and the Environment  
ENSP 55: Tropical Ecology  
ENSP 61: Environmental Sociology  
ENSP 65: Geographic Information Systems  
ENSP 71: Environmental Movements  
ENSP 101: Restoration Ecology Practicum  
ENSP 103: Foundations of Natural History and Environmentalism  
ENSP 105: Principles of Environmental Geology  
ENSP 107: Civic Environmentalism/Smart Growth  
ENSP 110: National Environmental Policy Seminar  
ENSP 111: International Environmental Seminar  
ENSP 125: Conservation Biology  
ENSP 127: Primate Conservation  
ENSP 135: Global Climate Change, Science and Policy  
ENSP 153: Ecological Economics  
ENSP 154: Environmental Decision Making  
ENSP 156: Environmental Politics and Policy  
ENSP 157: Environmental Justice  
ENSP 165: Applications of Geographic Information Systems  
ENSP 168: Dynamic Environmental Modeling  
ENSP 191: Environmental Science and Policy Practicum  
HIST 67: Sustainable Development in Africa  
HIST 186: History of the Environment  
HIST 188: Urban Environmental History  
LPS 146: Urbanization and Social Justice  
PHIL 79: Ethics in a Globalizing World  
PHIL 124: Health and Social Justice  
POLS 123: Grassroots Globalism  
SCSG 2: Human Geography  
SCSG 3: World Regional Geography  
SCSS 72: Global Social Change  
SCSS 145: Food and Society  
SCSS 173: Global Citizenship

There are also numerous First Year Seminars and Special Topics courses in various departments that are focused on sustainability issues.

### *Environmental Science and Policy*

Drake has two majors (Environmental Science and Environmental Policy) focused upon SEG II, both housed within the undergraduate Environmental Science and Policy Program. Both majors are designed to give students the background required to think critically about scientific, social, and economic effects of individual and public choices. The ENSP Program has about 60 students majoring in the field.

ENSP currently has three tenured and tenure-track faculty members teaching courses in a wide range of areas, as well as professors in other departments teaching courses that are cross-listed with ENSP. In the last five years, Drake has created new tenure-track positions for a geologist, environmental historian, environmental sociologist, and ethnobotanist.

### *Engaged Citizenship*

All undergraduate students at Drake are required to take a course focused on “engaged citizenship.” Most students take this course during their sophomore year’s “engaged citizen experience.” This experience is designed around a theme, and each year the theme changes. In 2013, the theme was “Sustainability,

Climate Change, and the New Green Revolution.” Seminars, film viewings, and other events have all been organized around this theme, and numerous “special topics” courses were developed to address the theme.

### **Graduate Level**

*College of Business and Public Administration* offers a class titled “Corporate Governance for Sustainable Development” which serves the purpose of increasing awareness about sustainability among current and future managers of the business world. The course description is as follows:

*The class presents an in-depth examination of the issues related to corporate governance in an ethical society. General theories of governance provide a foundation for an examination of the role governance decisions play in promoting the long-run **sustainability** of the community in which the firm operates. Global comparative analysis will help identify best practices in internal and external governance mechanisms.*

This course is offered at the graduate level and all of the Master of Business Administration and the Master of Financial Management students are required to take it as one of the core courses of their respective programs. The course objectives and outcomes include understanding the importance of sustainability in today’s business world.

Drake University Law School also offers a class in sustainability. The description of that class is as follows:

*This course is an excellent and unique opportunity to make a positive impact on your community. You will be introduced to a diverse, emerging, and innovative area of the law, as well as creative practitioners and public officials working in this area. The course is designed to operate similar to a small firm focusing on issues relevant to sustainability. We have a real client, The Greater Des Moines Partnership, who has asked for our help. Through our representation of the client, we will explore the concept and practice of sustainability and its integration of economic, environmental, and social considerations. Students will draft actual proposals to advance issues relevant to sustainability and receive feedback from public and private sector officials, including the Des Moines City Council.*

### **Research at Drake**

Currently, there are seven professors at Drake working on sustainability-related research:

Michael Haedicke; Environmental Sociology  
David Courard-Hauri; Ecological Economics  
Todd Hodgkinson; Sustainability Education  
Amahia Mallea; Environmental History  
Nancy Ross; Ethnobotany  
Thomas Rosburg; Prairie Restoration  
Keith Summerville; Entomological Ecology  
Kathryn Szramek; Hydrology

Through the ENSP Program, Agricultural Law Center, and other programs, Drake endeavors to engage in an organized, sustainability-related research program that allows undergraduate and graduate students to learn important research skills as well as contribute to our understanding of the interactions between humans and the natural world.

### **Sustainability Related Activities on Drake University’s Campus**

The sustainability committee also requested information from the Meeting Services & Sodexo regarding the sustainability related activities that took place on Drake University’s campus over the past three years.

Based on the information provided, on February 28, 2010, there was a five hour seminar about sustainability and on September 19, 2010 and October 9, 2011 and October 14, 2012 there were three different sustainability related organizations that held events at different on-campus locations.

Recently, Drake University Engaged Citizen Center hosted a conference titled “Sustainability in Urban Environments” on February 15, 2013, as part of the engaged citizen experience (see “Undergraduate Level” discussion). The conference was designed to attract both students and community members, and brought in national-caliber speakers from Detroit, Cleveland, and Washington, DC. On April 3, 2013, we hosted James Balog, founder of the Extreme Ice Survey, and photographer of *Chasing Ice*.

The campus communities are very interested in these topics and these types of activities are useful for increasing the awareness about environment sustainability.

### **Goals**

Drake has been quite successful in its efforts to provide a strong sustainability-related curriculum, and so our goals under education are not as ambitious as our goals elsewhere. However, we would like to continue to develop new opportunities for students in this area, and success will be measured in terms of growth in student interest.

Drake is working to improve its ability to train sustainability professionals and educators. With the construction of a new community garden learning center, we will expand Drake’s environmental education efforts to K-12 students in partnership with the Boys and Girls Club of Central Iowa. Drake seniors are currently designing a curriculum for use in the garden that addresses Iowa’s core science learning objectives through sustainability education. Moreover, this facility will improve the ability of our School of Education to prepare new teachers to provide sustainability-related coursework.

We also hope to use the President’s Climate Commitment to improve our students’ ability to think quantitatively about carbon emissions by having students in our ENSP 35 class calculate the carbon footprint.



## Summary

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Drake University has committed itself carbon neutrality by 2050. We expect to work toward this goal by reducing carbon emissions by 25%, or roughly 4,125 tonnes CO<sub>2</sub>e, every ten years in the intervening period. These emission reductions will come from a combination of measures, including improved building design, building retrofits, purchasing green energy, converting the Drake fleet to electric vehicles, local food purchasing, and encouraging alternative modes of carpooling, and the purchasing of carbon offsets. This Climate Action Plan is a statement of goals, with various levels of specificity for near and long-term goals. We expect our implementation strategies to change over time as new technologies are introduced, others become more affordable, and our campus community chooses priorities. While strategies will change, Drake's goal of carbon neutrality will not, as it is critical for meeting our university's mission of preparing our students for responsible global citizenship.