

Denison University Campus Sustainability Plan 2015

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Sustainability at Denison

Sustainability is a broad and all-encompassing topic that permeates every aspect of what we do at Denison. We believe that sustainability is one of the biggest challenges for us and future generations. We believe we must find a way globally to create sustainable ways of living. We also believe sustainability is fully consistent with the mission of Denison University, and the core values and principles of a liberal arts education.

Our approach is to identify strategic areas of focus for our sustainability efforts that 1) address the most pressing and critical aspects of sustainability; 2) align best with our vision of a sustainable Denison; and 3) are areas that, unless addressed, will undermine our collective efforts. In other words, our sustainability plan focuses on the areas of sustainability that we feel are most critical to the college. As we move forward, we are committed to a process that is both inclusive and engaging. We recognize that the path forward will be challenging and that it will require us to make difficult decisions in how we allocate resources, however, with a clear vision in mind, we can and will take steps in addressing sustainability in all of its contexts. Whether in the classroom, the Licking County community, or a country halfway around the globe, Denison students, staff and faculty lead by example. Together, we share a vision of a healthy future where people and the planet thrive.

Sustainability Vision

Denison is a community committed to being environmentally, socially, and economically sustainable. Each member of our campus community is empowered to be an active citizen, engaged in social change locally and globally. We integrate sustainability into teaching, learning, scholarship, and our daily lives. We recognize our responsibility to current and future generations. We consume mindfully and invest ethically, while maintaining the dynamic systems necessary to support a healthy, vibrant, and just global community. Our commitment to sustainability runs deep.

Plan Overview and History

An important element in planning for the future is acknowledging our current efforts, our successes, and the many challenges we face in fulfilling our vision. Denison University has had a long-standing commitment to principles of sustainability (*see Appendix 1 for a timeline of key milestones and accomplishments*). We were one of the initial colleges to sign on to the [Talloires Declaration in 2008](#). In 2009, we formed the Campus Sustainability Committee, created the Office of Sustainability and hired our first Campus Sustainability Coordinator. These actions led us towards signing [Presidents' Climate Commitment in 2010](#). In 2012, we adopted our first Sustainability and Climate Action Plan, detailing our move towards carbon neutrality and a sustainable campus by 2030. That document was intended to last for three years, and this current document represents an update to that original plan as has been written by the collective efforts of members of the Campus Sustainability Committee in 2014–2015 and 2015–2016 (*see Appendix 2*).

Over the last three years, we have made significant progress towards our initial goals - much of this progress is tracked in the [Sustainability Factbook](#). We reduced our carbon footprint by over 20%, invested nearly \$2.5 million in energy-efficiency projects across campus through our green revolving loan fund, added three LEED Gold buildings, and have initiated numerous best practices that have improved operational efficiency and increased campus awareness.

Denison has consistently demonstrated a strong commitment to sustainability in its operations, in the classroom, and in scholarly work, but we can and *must* do better. As we work to realize our vision of a sustainable Denison, we must leave neither our students nor our core mission behind. Paramount to our progress is ensuring that every graduate of Denison understands the core principles of sustainability and is ready to implement them as an active and engaged citizen in a complex global society.

The Sustainability Plan is in alignment with both the College's Strategic Plan and the Campus Master Plan. The Sustainability Plan is meant to serve as a guiding document for all our current and future sustainability efforts. While intended to be farsighted and long-standing, we intend this Plan as a whole to be thoroughly revised and updated after no more than five years to reflect new challenges and opportunities. The Sustainability Committee, in coordination with the Director of Facilities Services and Director of Sustainability, is charged with an annual re-assessment and updating of the specific action steps (*listed in Appendix 3*), and with prioritizing them so as to accomplish major milestones and meet goals as laid out below in a timely fashion.

Goals and Areas of Focus

Outlined below are specific and achievable goals that are essential to making measurable progress toward making our vision a reality. These have been divided into five key areas: 1) teaching, education, and research; 2) community; 3) energy and emissions; 4) dining; and 5) other campus operations. Specific action steps and target milestones are detailed for each goal, providing clear pathways for achieving the stated goals in Appendix Three.

Teaching, Education, and Research

As an educational institution that holds sustainability as one of our core values, Denison seeks to incorporate sustainability into the classroom and laboratory experiences of our students. The College offers numerous sustainability-focused and sustainability-related courses. Many faculty include sustainability concepts (including environmental, social, and economic sustainability) within their curricula through course topics and experiential or service learning components. An increasing number of faculty explore threads of sustainability within their research or through independent student research projects.

Goal 1 – Ensure that all students graduate from Denison with a clear understanding of the environmental, social, and economic principles of sustainability.

Goal 2 – Develop resources and enhance campus collaborations to support the inclusion of sustainability themes in the curriculum.

Goal 3 – Enhance the curriculum with additional sustainability-related courses.

Goal 4 – Encourage (and track) sustainability-related research.

Goal 5 – Maintain the Denison University Biological Reserve as a functional ecological landscape that provides habitat for native species and serves as a resource for sustainability-related research and education.

Goal 6 – Increase off campus study opportunities that provide insight and perspective into global sustainability issues.

Community

Sustainability is a concept that can affect all aspects of the college experience, impacting both students and employees of the college. The integration of sustainability into the campus culture need not necessarily require new programs and activities. Rather sustainability should be a theme that encourages collaboration and communication among campus groups so that all can benefit from better utilization of limited resources.

Denison’s sustainability efforts cannot be limited to only the campus; sustainability also includes community outreach. Opportunities for civic engagement and service-learning are vital to developing a broad and comprehensive view of sustainability that includes the environmental, economic and social implications of sustainable development.

Goal 1 – Build a stronger sense of campus community through increased communication and collaboration among campus groups.

Goal 2 – Increase engagement with the Central Ohio community through service-learning, internships, research, programming, and strategic collaborations with other organizations and institutions.

Goal 3 – Leverage campus resources to increase local economic development by supporting local businesses and organizations.

Energy and Emissions

Over the past five years Denison eCO₂ emissions* have averaged 79.4 million pounds annually. Approximately 80% of eCO₂ emissions are directly caused by electricity use, heating, and cooling of campus buildings. In 2014, Denison stopped burning coal, replacing it with natural gas, effecting an immediate 20% drop in eCO₂ emissions. Ultimately, complete elimination of Denison’s net emissions will require not only conservation, but also a transition to carbon-neutral sources of heat and electricity.

Denison will need to evaluate its current use of buildings and develop ways to ensure that new and renovated buildings not only address the curricular and co-curricular needs of the college, but that go beyond carbon neutral and help to reduce the carbon footprint of the college.

**Carbon dioxide equivalency (eCO₂) is a quantity that describes, for a given mixture of greenhouse gases, the amount of CO₂ that would cause an equivalent amount warming.*

Goal 1 – Enable better assessment and increase awareness in the campus community by collecting and disseminating data and information on campus energy use.

Goal 2 – Reduce overall energy consumption by establishing policies, educating the community, and encouraging proactive behavior.

Goal 3 – Continue to improve the energy-efficiency and environmental sustainability of building operation and maintenance.

Goal 4 – Design, construct, and renovate buildings to a rigorous and innovative sustainability standard.

Goal 5 – Invest significantly in local sources of clean energy production to meet both current energy needs and the goal of carbon neutrality by 2030.

Dining

Denison is emerging as a national leader in sustainable campus dining. We currently source 27% of our food locally. We are committed to responsibly-sourcing all of our food on campus. Responsible sourcing means: purchasing as much of our food locally as possible from producers we know; doing business with farms who don't take advantage of their workers; buying foods produced sustainably in ways that protect the land and water; staying away from hormones and antibiotics that are used unnecessarily; and choosing foods that have lower carbon and water footprints.

Goal 1 – Source our food responsibly.

Goal 2 – Integrate residential health and wellness with sustainable dining efforts.

Goal 3 – Support the development and growth of local producers.

Other Campus Operations

Taken as a whole, campus operations are the single biggest component of our environmentally-focused sustainability efforts. Many of these efforts go unnoticed by the campus community because they happen behind the scenes or in ways that have little or no noticeable impact to students, faculty and staff. This doesn't lessen their importance, but does highlight a need to increase campus awareness about this critical aspect of building a sustainable campus.

Denison reduced water use by 10% (4 million gallons) per year since 2005 by upgrading to low flow alternatives and we use untreated well water and rainwater for our limited irrigation applications. The college is committed to maintaining the aesthetics of its campus grounds and has created a campus arboretum and a number of grow-zones that reduce the need to mow many areas on campus.

Denison's campus is pedestrian-friendly. While the college is nearly 100% residential, 86% of faculty and staff commute to work each day. With a desire to increase off-campus community engagement, particular attention will need to be placed on

providing viable transportation options and alternatives that align with broader sustainability goals and benefit the whole community.

What campus does with its waste is and has been a continual problem. Recycling rates have leveled off at 25–30% with no discernable difference in the overall amount of material processed on campus. The college must find ways to minimize the waste stream and increase diversion rates from landfills.

Goal 1 – Treat campus waste responsibly by developing and utilizing responsible waste management practices.

Goal 2 – Reduce the use of water and the energy used to heat, transport, and treat water.

Goal 3 – Protect the local potable water supply.

Goal 4 – Reduce the impact of maintaining Denison’s campus landscape through the use of environmentally friendly landscaping practices and appropriate technology and maintenance practices.

Goal 5 – Move toward a more efficient and better managed University fleet.

Goal 6 – Reduce driving on campus while encouraging alternatives like ride-sharing, biking, and walking.

Goal 7 – Evaluate and reduce the environmental impact of air travel by students, staff and faculty.

Conclusion

Our approach to sustainability is holistic and embraces the interconnectedness of environmental, social, and economic impacts of all human activities. While many of the goals outlined above involve actions by specific departments and offices on campus, the reality is that moving the college forward requires that *all* members of the campus community understand how our collective actions impact our sustainability goals in meaningful and powerful ways.

Shifting cultural norms to be consistent with our sustainability vision is one of the biggest challenges we face. Effective communication and education are critical to achieving change. We must share our successes with the community, raise awareness of our shortfalls, educate, and drive behavioral change. We cannot achieve the goals in this plan without the engagement and buy-in of the campus community as a whole.

To promote awareness and transparency the Campus Sustainability Committee and the Office of Sustainability will:

- Publish an annual Sustainability Progress and Status Report
- Promote annual sustainability-themed events and key goals to the campus community
- Reach out to key stakeholder groups to encourage collaboration, evaluate progress in key areas of the Plan, and explore new opportunities for progress

- Host a Campus Sustainability Forum to highlight our successes, solicit feedback, and to share our progress towards our sustainability goals.
- Develop a campus sustainability dashboard that tracks data about all of our sustainability efforts.

Appendix 1: Timeline of Sustainability at Denison

1977

Homestead

1984

Denison University Recycling Program

1994

Environmental Studies Program

1996

Green renovation of Barney-Davis Hall

2004

Denison Community Recycling Center

2007

Environmental Task Force

Environmental Venture Fund

6.44kW Solar Array on Doane Library

Campus Environmental Audit

2008

Composting Program

Taillores Declaration

2009

LEED Gold Renovation of Bryant Arts

Campus Sustainability Committee

Campus Sustainability Coordinator

AASHE Membership

2010

Presidents' Climate Commitment - ACUPCC

Tree Campus USA

Campus Community Garden

2011

Billion Dollar Green Challenge

Green Revolving Loan Fund

2012

Sustainability & Climate Action Plan

STARS Report - Silver Rating

LEED Gold Renovation of Ebaugh Labs

Campus CSA Program

2013

Cabin *Atlas* at the Homestead

10.14kW Solar Array at the Homestead

LEED Gold Renovation of Chamberlin

LEED Gold Natatorium

Denison CarShare Program

2014

7.84kW Solar Array on Polly Anderson

Field Station

2015

Sierra Club *Cool Schools* List

Princeton Review Green Schools List

Big Red Buyer's Club

NY Times Featured Story on

Energy-Efficiency

Appendix 2: Sustainability Committee

Over the last two years, the Campus Sustainability Committee has worked to evaluate progress made towards the goals outlined in the 2012 Campus Sustainability & Climate Action Plan as well as to draft a new plan that will move the college further towards its sustainability vision. The following individuals have been critical to this process.

2014-2015 Sustainability Committee

Dr. Heather Rhodes - Biology
Dr. Doug Spieles - Env. Studies
Dr. Jordan Katz - Chemistry
Julie Tucker - Student Development
Aaron Fuleki - Information Technology
Liz-Barringer Smith - Modern Languages
Beth White - Dance
Landon Slangerup - Student
Seymour Lubbers - Student
Art Chonko - Facility Services
Bob Jude - Facility Services
Sarah Piper - Dining
Jeremy King - Sustainability
Seth Patton - Finance & Management

2015-2016 Sustainability Committee

Dr. Jordan Katz - Chemistry
Dr. Doug Spieles - Env. Studies
Dr. Rusty Shekha - Soc/Anth
Todd Jamison - Institutional Research
Aaron Fuleki - Information Technology
Liz-Barringer Smith - Modern Languages
Dyan Couden - Studio Art
Landon Slangerup - Student
Andi Gupta - Student
Art Chonko - Facility Services
Bob Jude - Facility Services
Sarah Piper - Dining
Jeremy King - Sustainability
David English - Finance & Management

Denison Community Stakeholders

Jenna McDevitt - Administrative Services
Susie Kalinoski - Alford Center
Kristin Hausman - Residential Education
Frank Hassebrock - Teaching & Learning
Monica Ayala-Martinez - Academic Affairs

Mary Lindsey - Campus Safety
Adele Gorrilla - Investments
Barb Burgess - Building Services
Mark Comisford - Grounds & Roads

Appendix 3: Recommended Action Steps

Simply creating an action plan in and of itself will not move us any closer to achieving sustainability. Much effort went into the creation of this plan to ensure that it is a living document for the college that is aligned with the Campus Master Plan and the College's Strategic Plan. The following section includes action steps the college can take to address the goals set forth in the Sustainability Plan. These action steps are by no means an exhaustive list, but do represent specific programs, initiatives, and efforts that we know can currently be employed that will push us forward. As technology and resources change over time, new pathways may open up that will require us to reevaluate our current goals and to explore new possible actions steps. With that in mind, we intend the specific action steps to be reevaluated and updated annually as milestones are reached and new opportunities become available. Furthermore, as stated above, the Sustainability Plan as a whole should be reviewed and updated in its entirety in 2020, five years from now.

Teaching, Education & Research

Develop resources and enhance campus collaborations to support the inclusion of sustainability themes in the curriculum.

- Work with the Center for Learning and Teaching to compile resources that help faculty understand how sustainability fits with their own teaching interests. Develop a collection of pedagogical readings, assignments, prompts, and questions that can be used to teach sustainability in the classroom and house the collection in the Center for Learning and Teaching.
- Hold workshops for faculty, in a venue such as the Fall Faculty Conference, on integrating sustainability issues into the curriculum. Emphasize the broad scope of sustainability (environmental, social, and economic sustainability) and engage faculty in discussions of how different disciplines can address aspects of sustainability.
- Collaborate with The Alford Center for Service Learning to foster and highlight the important ongoing work Denison students, faculty and staff do toward the social and economic sustainability of our local community. Identify ways CSC can support and enhance this work, and ways that themes of environmental sustainability and environmental justice could be included in service learning.
- Encourage faculty to utilize resources for pedagogical development and interdisciplinary teaching such as the CLT, Denison Seminars, and Pedagogical Practice Projects as a means to help them develop curriculum that addresses sustainability.

Enhance the curriculum with sustainability-related courses.

- Use resources outlined above to encourage faculty to include sustainability topics in courses and/or develop new courses within their disciplines, within the writing program, or Denison Seminars that focus on Environmental, Social and/or Economic Sustainability.
- Attach a searchable designation to courses related to sustainability within the course catalogue. (This might be part of a larger scheme to attach searchable keywords or tags to courses so that students could search for courses with “sustainability,” “service learning,” “global perspectives,” or any number of other designations faculty and students would find useful.)
- Utilize the energy Dashboard, the solar array, and other campus resources to allow students to engage with real and local sustainability data.

Encourage and track sustainability-related research

- Find a donor to support a sustainability themed student summer research program. Summer research is popular and competitive; adding 1-3 summer research positions on a sustainability theme would enable more students to participate as well as foster faculty and student engagement in scholarly work on sustainability. These positions could be open to all disciplines.
- Work with Gilpatrick House to create a sustainability-themed learning community (research table?) on campus.
- Utilize the “design lab” that’s part of the strategic plan.

Maintain the Denison University Biological Reserve as a functional ecological landscape that provides habitat for native species and serves as a resource for sustainability-related research and education.

- Continue programs to remove invasive species and consider targeted reintroduction of native species.
- Expand the Tree Species Trail as a teaching tool for Denison students as well as the wider community.
- Promote opportunities to use the biological reserve in teaching.
- Establish a dialogue between the biological reserve committee and the sustainability committee to help support the needs and mission of the biological reserve.

Community

Increase communication and collaboration among campus groups.

- Hold semi-annual planning meetings for campus groups interested in sustainability/diversity to coordinate schedules, budgets, and events (coordinated by the Office of Sustainability)
- Provide incentives such as increased funding for groups who regularly collaborate and/or share best practices for programming in sustainable ways
- Develop an integrated marketing plan for sustainability that includes both on campus and off campus outreach. This should include collaboration with University Communications, Alumni Relations, and Admissions.
- Facilitate a sustainability summit for students, faculty and staff that includes other colleges and universities in an effort to share best-practices and encourage collaboration on sustainability initiatives.

Educate the entire Denison community on sustainability issues and encourage sustainable living

- Develop a Denison specific Carbon Footprint Calculator
- Promote the existence of Green Office Certification and increase the proportion of offices that are certified.
- Include sustainability in orientation and pre-orientation programs for first-year students and new faculty and staff
- Present a sustainability update once a year at a General Faculty Meeting
- Track community service of employees and recognize these efforts
- Report student service hours on official transcripts
- Collaborate with the Community Health Involvement Committee and the Wellness Coalition to educate the community on environmental issues related to health
- Organize a sustainability forum and/or planning retreat and invite all sustainability-related campus groups, area non-profits, representatives from the Alford Center for Service Learning and Licking County schools.
- Encourage students to reuse or repurpose belongings through Operation Move-Out, “Yard Sales,” and so forth. Promote MyDenison discussion boards as ways to re-purpose/re-use items and to collaborate on sustainability-related issues (carpools, etc.)
- Partner with the Alford Center to host environmentally-focused service activities (e.g. Saturday Service, or one-day events)

- Partner with Residential Education & Housing and Facilities Services to provide students with mock utility bills to help them understand their own consumption, improve financial literacy, and suggest helpful tips for how they could decrease consumption
- Reduce vandalism in residence halls (to public spaces and individual rooms)

Energy & Emissions

Enable better assessment and increase awareness in the campus community by collecting and disseminating data and information on campus energy use.

- Continue to collect and analyze monthly consumption information for all utilities: electricity, water, natural gas, steam, coal, gasoline, and diesel. Organize, and share widely, data on consumption by areas such as academic, general and residences.
- Continue to install utility metering systems (esp. steam, condensate, and water) to collect real time data where feasible/practical.
- Continue to implement a campus energy dashboard that is accessible to all Denisonians. This will be used to monitor energy use by building to promote awareness of energy usage.
- Continue to mock bill students to educate about energy usage and “real world” costs, and to discourage wasteful energy practices.

Reduce overall energy consumption by establishing policies, educating the community, and encouraging proactive behavior.

- Update, expand, and disseminate campus-wide standards for indoor temperature, humidity, air quality, and lighting, and implement in new and renovation buildings.
- Create educational materials explaining policies and conservation programs specifically targeted to students, faculty, and staff.
- Develop and disseminate efficiency standards and usage guidelines to reduce energy consumption of office and personal equipment and appliances, such as refrigerators and space heaters. This should include completely eliminating the use of inkjet printers on campus, and utilizing existing policy and procedure documents such as the “Guide to the General Operating Procedures” and “Green Office Certification” to help inform and educate the community on reducing personal energy consumption on campus.
- Utilize students and the campus community to help investigate, monitor, and reduce wasteful energy consumption across campus (such as turning off lights, closing unused hoods, and powering off digital projectors after use) and to create programs to drive behavior change.

- Encourage behaviors and practices that utilize building spaces more fully to minimize climate control and lighting use, such as using natural light when available and creating designated study spaces that concentrate students into fewer individual buildings/spaces.

Continue to improve the energy-efficiency and environmental sustainability of building operation and maintenance.

- Identify and implement a sustainable ‘Green Standard’ for the maintenance and operation of buildings across campus.
- Identify a benchmarking tool to compare building energy use on Denison’s campus with similar buildings on other campuses (such as USEPA Energy Star rating system) and establish benchmarking goals.
- Reach full compliance for the ‘Green Cleaning Program’ requiring all products used in cleaning buildings to be ‘certified’ products unless written documentation is provided.
- Continue to operate and maintain building equipment and systems to maintain established health, safety and environmental requirements, while minimizing energy consumption.
- Establish policies and programs to reduce the need to heat and cool buildings and spaces when unoccupied, both after normal working hours and when the campus is on break.
- Continue to install equipment, sensors and controls to automatically reduce lighting and HVAC energy consumption in all new construction, and wherever cost-effective.
- Re-commission existing equipment and control systems on a regular basis and investigate continuous commissioning programs to keep systems operating at peak efficiency. Continue to upgrade or install control systems to utilize energy saving strategies when operating HVAC, lighting equipment, and systems.
- Upgrade or replace inefficient HVAC equipment or systems, replacing them with appropriate technology to help reduce and control energy use.
- Continue to survey all major buildings for energy conservation measures, and complete economically feasible projects as quickly as possible.
- Provide domestic hot water only where needed or required by code and investigate alternative methods for producing domestic hot water that improves energy efficiency.
- Eliminate the use of chilled water drinking fountains across campus by replacing broken refrigerated units with fountains that do not have refrigeration. Install bottle-filling compatible fountains at key locations.

Design, construct, and renovate buildings to a rigorous and innovative sustainability standard.

- Include sustainability and efficiency decisions at the forefront of all future planning decisions. Vigorously challenge the need to expand total square footage across campus by instead improving utilization of existing spaces.
- Any new construction cannot cause an increase in the overall carbon footprint of the campus.
- Ensure that all new construction and major renovations are designed and built to a high standard of sustainability, such as LEED Gold.
- Work closely with design teams and representatives from the Campus Sustainability Committee to include best practices and start with the greenest possible design.
- Implement funding strategies for proposed construction in which both initial and ongoing costs are considered. Ensure decision makers (i.e. Board of Trustees) are well informed about potential long-term financial and energy savings in building operations by utilizing greener technology that may have higher upfront costs.
- Review certification programs and identify an appropriate method to ensure that Denison will be an innovator in green building construction. Review the advantages and disadvantages of obtaining documented certification and consequences of obtaining them.
- Require Life Cycle Cost analysis on HVAC, electrical, plumbing and building systems on projects more than \$500,000.

Be carbon neutral by 2030.

Phase 1: Reduce carbon dioxide emissions, pollution and environmental degradation from current energy sources.

- Investigate opportunities to utilize the existing heating and cooling plants more effectively.

Phase 2: Change main sources of heating, cooling, and electricity to reduce carbon dioxide emissions, pollution, and environmental degradation.

- Ensure coal is never burned again on campus.
- Continue to expand use of carbon-neutral sources of electricity, specifically wind and solar, including on- or off-site generation.
- Investigate alternatives to the current steam and chilled water plants for heating and cooling, including but not limited to: a co-generation plant; ground source heat pumps (geothermal); carbon-neutral fuels such as a sustainably sourced biofuel; decentralization, or an alternate location of the plant if centralized; absorption cooling; and thermal storage.

- Include, along with engineering and economic life cycle analysis, a thorough investigation of potential future technology and trends impacting the potential carbon footprint of the various energy sources.

Phase 3: Purchase or produce energy from renewable and carbon-neutral sources to reduce carbon dioxide emissions from the use of fossil fuels.

- Create a 15-year Road Map for achieving carbon neutrality status by 2030, including detailed intermediate goals, long-term strategic objectives, and timetables.
- Work toward objectives set by the Road Map by installing on-site renewable energy generation and implementing aggressive energy conservation measures, and/or investing in off-site renewable energy credits.
- Keep abreast of technological advances.
- Continually assess the costs and benefits to increase the use of renewables systematically.
- Include an educational component connected to any renewable energy development on campus or purchase of renewable energy credits.

Dining

Source our food responsibly.

- Actively help build and promote local food systems and supply lines in the community.
- Move to “meatless days”
- Look at options to freeze local foods from summer months, for use in winter months.
- Educating kitchen staff on when to prepare food / when to turn on ovens / using HVAC systems properly. Implement a sustainability side of this training and invite D.U.
- Invest in local farms to help build their capacity to provide responsibly-sourced products for Denison.

Increase the overall sustainability of our campus food operations

- Minimize food waste by doing batch cooking and employing food recovery.
- Utilize reusable containers in all to-go operations
- Minimize the use of disposable water bottles on campus

Other Campus Operations

Water

Reduce the use of water and the energy used to heat, transport, and treat water

- Continue to upgrade all fixtures on campus to low flow fixtures.
- Eliminate any use of city water for irrigation in landscaping, and work toward use of only rainwater rather than well water.
- Explore and implement where feasible alternative water collection, including optimizing use of the underground cistern, other rainwater collection, and condenser water from air-handling systems.
- Adopt a policy that no additional irrigation will be added unless it draws from non-city water sources.
- Consider water use when purchasing equipment and seek sustainable alternatives to equipment with heavy water use demands such as once through water cooled equipment.

Protect the local water supply as a natural resource.

- Limit polluting runoff from our campus wherever possible by minimizing and using best practices for applying substances like fertilizer and road salt.
- Work proactively to prevent pollution from fuel, oil or other spills. Follow best practices to promptly clean up any spills that do occur.
- Continue to utilize retention ponds, bio swales, and other structures to reduce run-off.

Grounds

Reduce the environmental impact of maintaining Denison's campus landscape through the use of appropriate technology and maintenance practices.

- Identify and expand areas of land for low or no mowing. Include signage and community education about these areas.
- Reduce the use of petroleum based fertilizer by increasing and improving composting.
- Explore alternative equipment, development of policies, procedures and processes used to maintain the campus and identify best practices that reduce labor and reliance on non-organic and petroleum based chemicals.
- Plant native, deer resistant, and low maintenance shrubs, trees, and plants.
- Expand the planting of trees wherever possible.
- Adopt an Integrated Pest Management Plan

Recycling & Waste

Reduce waste and increase campus recycling and composting through a combination of policies, procedures and increased community outreach.

- Investigate the most effective way for the Denison community to recycle (commingling versus sorted)
- Institute a campus wide system for compost collection
- Create a recycling point person for each academic and residential building and steering committee to identify best models for location dependent recycling
- Improve recycling in residence halls by installing larger recycling bins and expanding recycling options
- Expand participation in “Recyclemania” through better publicity
- Collect and recycle more construction waste from summer and regular small scale projects
- Track and publicize monthly waste land-filled, recycling rate, and compost generated
- Educate campus community about ways to reduce consumption and promote reuse and sharing of campus resources
- Target per person goals for waste
- Increased number of recycling bins across campus
- Create student jobs for recycling, sorting, and/or composting operations

Dining Specific Action Steps:

- Install a pulper to increase items that are compostable and assess its effectiveness
- Provide more education about composting in dining halls
- Compost bin in Slayter
- Investigate options for increasing recyclable/compostable containers at Slayter
- Making sure that (dining) prep methods minimize water use, waste production via composting
- Incorporate new composting stations into Huffman and Curtis to help facilitate and educate about composting practices
- Recyclable or compostable take-out containers
- Purchase food pulpers for Curtis and Huffman OR invest in chipper for more efficient composting (do we also need to allocate more land for compost piles?) – Moved to “Waste”

- Install dishwashing facilities in ALL campus dining locations, including any new buildings with snack bar or other food service
- With dishwashing system could now create program of re-usable take-out containers, system can run on deposit basis (make it pricey to incentivize return of containers)

Purchasing Specific Action Steps:

- Getting more sustainability themed components in the general op guide and doing training.
- Set some guidelines for purchasing within the Ohio Five
- Seek items and sources that use less packing materials
- Comprehensive assessment of campus purchasing to identify opportunities for conservation (where are we buying, are we duplicating purchases)
- Needs to be an online database of campus surplus

Transportation

Move toward a more efficient and better-managed University fleet.

- Evaluate current fleet management system and improve for greater efficiency. This would include making non-specialized vehicles part of a central pool and providing an online reservation system through which campus members can reserve appropriate vehicles from that pool for university business
- As part of fleet management, evaluate vehicle use by major fleet users, including security and facilities. Determine if some vehicles could be replaced with more efficient types of vehicles (cars in place of vans or SUVs) or if some vehicle use could be accomplished with alternative transport such as golf carts, Segways or bikes
- Establish a leasing/purchasing policy for campus vehicles that assesses both the need for a given vehicle and type of vehicle proposed for purchase or replacement, with the goal to purchase the most fuel efficient and cost appropriate vehicles
- Research the costs and benefits of alternative fuel and high efficiency vehicles (such as biodiesel, hybrid, electric, and/or compressed natural gas) for addition to the fleet. Establish a pilot program to test the best possibilities as fleet vehicles are replaced
- Educate staff that use university vehicles to reduce idling time; this might include signage on DU vehicles instructing the operator to minimize idling.

Reduce driving on campus while encouraging alternatives like ride-sharing, biking, and walking.

- Increase the cost of student parking permits over 3 years to \$150, while maintaining and publicizing a discounted rate (\$25) for the Orange lot. Use additional funds to support programs listed below. Consider more restrictive parking permits to limit driving from one part of campus to another.
- Reinvent the Bike Share program as a community partnership? [this and the shuttle program- could these be changed into whole community approaches to public transportation? Granville, Newark, Columbus?]
- Add bike sheds, racks, covered areas (part of new performing arts building?)
- Evaluate expansion of the third party car share program (such as ZipCar) on campus. The car(s) would be available for private use by students, staff, and faculty, as well as possibly as a supplement to the University fleet when necessary
- Evaluate current shuttle programs available to students for transport to Columbus, the airport, and area shopping. Expand shuttle service as appropriate, investigate potential community partnerships (e.g., Licking County Transit, COTA, etc.).
- Publicize bike share, car share options, ride share boards, and shuttle services to reduce the use of and need for a car on campus
- Evaluate and improve walking access to campus from surrounding neighborhoods (repair stairways, add pathways and sidewalks if needed to better connect campus to the village).
- Evaluate and improve bicycle access to campus from surrounding neighborhoods as well as bicycle parking options on campus (consider adding bike racks and/or bike sheds)
- Incentivize faculty and staff to carpool by offering designated parking spots in the garage with special carpool parking stickers.

Evaluate and reduce the environmental impact of air travel by students, staff and faculty.

- Collect data on air travel related to university business
- Collect data on student travel that is part of their educational experience (such as study abroad, conference, or research trips)
- Research ways to reduce the carbon footprint associated with air travel
- Encourage departments to utilize Skype for interviews and meetings whenever practical to reduce the need for air travel.