



Acknowledgements

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Thank you for reading this plan digitally and for conserving resources related to paper consumption and printing.

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Executive Summary

Introduction

As defined by the [Brundtland Commission Report](#), sustainability means meeting the needs of the present without compromising the ability of future generations to meet their own needs, and it emphasizes simultaneous and interconnected social, environmental, and financial/economic dimensions.

Sustainability is a comprehensive approach to managing the effects of global climate change. Global climate change has myriad and complex impacts throughout the world, including

- More frequent and more extreme weather events
- Sea level rise
- Species extinction
- Water shortages
- Declining agricultural production
- Spread of diseases

These impacts have local (i.e., right here in Nebraska) and global economic implications and are particularly pronounced in low-income and marginalized communities.

In recent years, colleges and universities have recognized their role in advancing sustainability. Three of UNK’s peer institutions have signed the American College and University Presidents’ Climate Commitment and set a climate neutrality goal for 2050. Since 2013, five have received an AASHE STARS rating of bronze, silver, or gold. Twelve have a sustainability officer who coordinates sustainability work on campus (see Appendix: Peer Analysis). At UNK, 71% of students and employees think sustainability is important or very important to/at the university, and 72% agree or strongly agree that sustainability supports the university’s mission (Verdis Group’s UNK Sustainability Engagement Survey, March 2015).



AASHE
The Association for the Advancement
of Sustainability in Higher Education

stars
a program of aashe

AASHE is the Association for the Advancement of Sustainability in Higher Education. AASHE’s mission is to inspire and catalyze higher education to lead the global sustainability transformation.

STARS is AASHE’s Sustainability Tracking, Assessment, and Rating System. It is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance. As of October 2015, 722 institutions have submitted a STARS report, and 252 have a platinum, gold, silver, or bronze rating.

Plan Overview

From January through August 2015, the University of Nebraska at Kearney enlisted Verdis Group to engage university stakeholders in a sustainability master planning process to

- Analyze and benchmark the university’s sustainability performance
- Develop the university’s sustainability vision and measurable goals
- Develop and prioritize strategies for achieving the sustainability vision and goals

The topic area sections of the plan include

- Overarching strategies
- Energy
- Water
- Waste
- Purchasing
- Mobility
- Emissions
- Academics
- Campus Culture and Engagement
- Other strategies

The 2015 Sustainability Master Plan recognizes UNK's sustainability strengths/successes and identifies opportunities/challenges. Thus, the plan will help UNK to

- Institutionalize and incorporate sustainability as part of its core mission
- Inform decision-making that is socially, environmentally, and financially responsible
- Establish itself as a sustainability leader locally, regionally, and nationally

The plan synthesizes information from various sources:

- Extensive data analysis of sustainability performance
- Verdis Group's UNK Sustainability Engagement Survey (March 2015)
 - Over 700 student and employee respondents
- Review of existing strategic plans
- Peer analysis
- Verdis Group research, experience, and expertise
- Engagement with hundreds of UNK students and employees - including subject matter experts - to obtain, coordinate, and leverage sustainability information, experiences, and knowledge
 - Meetings, interviews, planning exercises, and site visits with
 - Director of Facilities Management and Planning
 - Vice Chancellor for Business and Finance
 - UNK Sustainability Committee
 - Utilities, Planning Space Management and Construction Services, Grounds Services, Custodial Operations, and Transportation Services
 - Information Technology Services, Residence Life, Business Services, Dining Services, Parking Services, and Communications and Community Relations
 - Residence Hall Association, Student Government, Honors Program, and Enactus

UNK Sustainability Definition & Vision

Using input from dozens of UNK stakeholders, Verdis Group helped the UNK Sustainability Committee to develop and approve the following institutional sustainability definition and vision:

Sustainability Definition

Sustainability is a philosophy of living and institutional operation that jointly considers social, environmental, and financial responsibility while benefiting present and future generations.

Sustainability Vision

UNK envisions a university in which sustainability is aligned with its learning, community engagement, operations, and everything it does. Sustainability is central to the day-to-day culture of the university. UNK's graduates are sustainability-literate, prepared to think critically about resource conservation and wise resource management. UNK is actively striving to achieve zero waste and carbon neutrality. The university is also a leader in conserving water, utilizing renewable and efficient energy technology, and promoting healthy lifestyles for its students and employees.

Sustainability Strengths & Successes

UNK was a reporting institution for STARS v1.0 in 2012, which included a greenhouse gas emissions inventory for performance year 2010. Impressively, since the year 2005, UNK's energy use intensity has decreased and its greenhouse gas emissions have decreased significantly. Additionally, Facilities Management and Planning

- Has earmarked \$1.5 million for lighting upgrades.
- Has eliminated most T12 fluorescent lighting throughout campus (the new Health Science Education Complex is 100% LED) and installed new windows in two buildings.
- Plans to submeter all or most buildings and add digital control improvements.
- Has upgraded the central plant and made thermal efficiency improvements.



LED lighting in the Health Science Education Complex and the upgraded central plant

The 2015 UNK Utilities Master Plan emphasizes superior envelope performance, improved light source efficiency (i.e. LED), and plug load occupancy sensors.

The 2013 Campus Landscape Master Plan emphasizes efficient irrigation, water-efficient plants, and displacement of city water with well water.

In 2011, Dining Services transitioned to trayless dining, and as of winter 2015, UNK has installed 21 water bottle refill stations throughout campus.

Efforts such as these have prevented thousands of water bottles and much food waste from going to the landfill.



Water bottle refill station in the Health Science Education Complex

UNK established a sustainability committee in 2009. The Residence Hall Association, Enactus, and Honors Program have collaborated with the UNK Sustainability Committee, Dining Services, and Custodial Operations to implement sustainability programming, e.g. Project: Clean Plate and Waste Audit Dumpster Dive. These programs have helped UNK to better understand and improve its landfill diversion. Additionally, Custodial Operations has collected reusable items during residence hall move-out and donated the items to local organizations.



Project Clean Plate and Waste Audit Dumpster Dive engage students in efforts to reduce landfill waste.

Since the sustainability master planning process began in 2015, UNK has already implemented several exciting new sustainability strategies such as an overhaul of the recycling system, the Zagster bicycle sharing program, and the Enterprise CarShare program.



In 2015, UNK overhauled its recycling system and launched the Enterprise CarShare program.

Key, General Findings

Reflecting on the entire sustainability master planning process, Verdis Group offers the following key, general findings:

- UNK has many sustainability strengths and successes, but their communication, and thus awareness, is limited. Generally, students have initiated the strengths and successes with which people are most familiar.
- UNK has accomplished noteworthy sustainability success even since the sustainability master planning process began, e.g. earmarking of \$1.5 million for lighting upgrades, overhaul of the recycling system, Zagster bicycle sharing program, Enterprise CarShare program.
- The extent to which UNK students and employees value sustainability may be significantly underappreciated. Verdis Group was frequently told that the conservative or rural backgrounds of UNK students and employees are barriers to advancing sustainability, but 71% stated that sustainability is important or very important to/at UNK (Verdis Group's UNK Sustainability Engagement Survey, March 2015).

- Some departments/offices are reluctant to weigh or prioritize sustainability criteria during decision-making. Sustainability jointly considers social, environmental, and financial responsibility, but some departments/offices only consider price. Even when considering only price, some departments/offices do not incorporate systems thinking: sustainability strategy "A" might have a relatively high price, but savings from sustainability strategy "B" and "C" can offset that price. Indeed, UNK is a public institution of higher education, but other public universities are embracing more comprehensive approaches to decision-making.
- Sustainability efforts are largely decentralized and uncoordinated among departments/offices, student groups, and administration.
- The establishment and early efforts of the UNK Sustainability Committee were exceptional, but its recent efforts and energy have slowed.
- Exciting and timely sustainability opportunities exist with the development of University Village, including renewable energy, progressive streetscapes, and native landscaping.



UNK is currently planning for and developing University Village south of the main campus.

Sustainability Performance & Goals

Verdis Group analyzed extensive data in order to benchmark UNK’s sustainability performance. Then, relying on peer analysis and other experience/expertise, Verdis Group recommended topic-area-specific

sustainability goals for 2025 and 2050. UNK sustainability stakeholders, including the UNK Sustainability Committee, then refined and approved the goals.

Topic Area	Baseline	Performance	% Change	Goal (2025)	Goal (2050)
Energy weather-normalized source kBtu/ft ²	206.2 2005	205.9 2014	-0.15%	-25%	***
Water gallons per weighted campus user	25,961 avg FY 2012- 13-14	26,068 FY 2014	+0.41%	-15%	-40%
Waste recycling rate		12% fall 2014	- - -	50%	90% “zero waste”
Purchasing percentage of Office Depot purchasing that is classified “green”		20% Q1 2015	- - -	50%	75%
Mobility percentage of students and employees that use alternatives to single-occupancy vehicle commuting		65% spring 2015	- - -	75%	85%
Emissions tons of eCO ₂	38,760 2005	28,902 2014	-25%	-35%	-100% “climate neutral” ***
Academics percentage of all courses that focus on or include sustainability		0.20% spring 2015	- - -	40%	75%
Campus Culture & Engagement sustainability engagement score		43 / 100 spring 2015	- - -	54 / 100 +25%	86 / 100 +100%
Campus Culture & Engagement percentage of available Campus Engagement STARS points		N/A fall 2015	- - -		100%
*** Instead of specifying a longer-term energy goal (which is complex to predict), we will point to the longer-term emissions goal of reaching climate neutrality by 2050. This goal will naturally drive UNK’s energy consumption and energy profile in the most sustainable direction.					

Recommendations (Top Strategies)

This plan details hundreds of strategies for UNK to achieve its sustainability goals. Below are the twelve most important strategies that UNK should begin considering immediately in order to maximize impact, efficiency, and savings.

Improve coordination of sustainability planning and implementation

UNK is already addressing sustainability through many projects and programs, but its efforts are largely uncoordinated. The majority of UNK's peer institutions, for example, have a level of sustainability coordination that UNK lacks (see Appendix: Peer Analysis). Thus, in the near term, university administration should task the UNK Sustainability Committee with coordinating the university's sustainability efforts. Alternatively, or additionally, Verdis Group strongly believes UNK should hire a sustainability coordinator. This person would advise on, coordinate, and implement UNK's sustainability planning, policies, projects, programs, and communications. UNK might face difficulty creating and filling a sustainability coordinator position within the immediate future, but eventually having one on staff will enable the university to successfully implement sustainability strategies and achieve its sustainability goals.

Hire an energy manager

UNK might face difficulty creating and filling an energy manager position within the immediate future, but eventually having one on staff will enable the university to successfully implement energy strategies and achieve its energy-related sustainability goals. Verdis Group strongly believes this position would pay for itself through cost savings.

Continue to implement sustainable lighting

Expand on existing efforts to (1) become incandescent-free, (2) replace T12s and install LED lighting, and (3) install occupancy sensors.



UNK has installed energy-efficient lighting and occupancy sensors throughout campus; those efforts must continue and expand.

Reduce UNK-owned IT devices

Begin taking steps to appropriately reduce the number of UNK-owned IT devices (e.g. desktop computers, laptops, tablets) on campus. Information Technology Services may strive to achieve one (mobile) device per appropriate employee within the next five years.

Replace irrigation heads

Per the 2013 Campus Landscape Master Plan, identify all existing aged and/or inefficient irrigation heads and develop (and implement) a plan to replace them with newer, more water-efficient heads.

Evaluate, measure, and continue to improve recycling

Throughout 2015, UNK has made outstanding strides with regards to improving its recycling system: new indoor and outdoor receptacles, new communications, new programs, etc. Custodial Operations and other partners should evaluate the effectiveness of these efforts and continuously improve the recycling experience. Part of this evaluation should include refining the methodology for most accurately estimating UNK’s recycling rate and tracking this rate regularly through time.



Even with an improved recycling system, UNK has opportunities to measure success, evaluate the system, and implement additional strategies to keep recyclable materials like those pictured on the right from going to the landfill.

Prioritize green purchasing

The Purchasing Department should appropriately prioritize green purchasing and work with other partners to educate employees – especially purchasers – about (1) how to make greener purchases and (2) why doing so is important.

Implement a comprehensive sustainable mobility program

Develop a program that comprehensively promotes alternatives to single-occupancy vehicle commuting, i.e. the program encourages and incentivizes the UNK community to walk, bicycle, carpool, rideshare, etc. Establishing this sort of program will require research (surveys, focus groups, etc.) and a strategic marketing plan.

Incorporate sustainable mobility between University Village and main campus

Be proactive in thinking about how students and employees will safely and sustainably traverse between University Village and the rest of campus. Now is a tremendous opportunity to incorporate sustainable mobility options into University Village operations, pilot new mobility strategies, and instill a culture of sustainability in a new setting.

Sign the ACUPCC

The chancellor should institutionally commit UNK to climate neutrality by signing the American College and University Presidents’ Climate Commitment. As of October 2015, three of UNK’s peer institutions have signed, and over 650 institutions have signed nationally.

Incentivize faculty to expand sustainability course offerings

Offer incentives to motivate faculty to develop sustainability courses and incorporate sustainability into existing courses. Incentives could include release time, professional development funding, trainings, etc.

Jointly engage students, faculty, and community partners

Not only should UNK’s sustainability planning and implementation involve/engage these groups individually, but it should also engage these groups simultaneously. For example, develop a program in which classes or research groups partner with a community organization to address a real-world sustainability challenge.

Conclusion

Using this plan as a guide, UNK will meet and exceed its strategic sustainability goals for 2025 and beyond. Implementation, however, is no easy task: UNK will encounter challenges as it institutionalizes and executes the plan’s recommendations. Therefore, sustainability champions at UNK must continually reference the sustainability vision; it will motivate, guide, and justify the university’s sustainability efforts. In order to demonstrate leadership and appropriately value social, environmental, and financial responsibility, UNK must commit to the 2015 Sustainability Master Plan.

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Sustainability challenges are quite complicated, so to help UNK measure its sustainability performance and describe the best path forward, it enlisted Verdis Group to help develop the 2015 Sustainability Master Plan.

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Outcomes

Outcomes of Verdis Group’s sustainability master planning process with UNK include

- UNK Sustainability Definition
- Why Sustainability Is Important to/at UNK
- UNK Sustainability Vision
- Key, General Findings
- Sustainability Performance, Goals, and Strategies

UNK Sustainability Definition

Using input from dozens of UNK stakeholders, Verdis Group helped the UNK Sustainability Committee to develop and approve the following institutional sustainability definition:

Sustainability is a philosophy of living and institutional operation that jointly considers social, environmental, and financial responsibility while benefiting present and future generations.



Why Is Sustainability Important to/at UNK?

Verdis Group arrived at two similar but nuanced statements that describe the importance of sustainability to/at UNK. The UNK Sustainability Committee decided to include both descriptions in this plan. The first description immediately below is based on qualitative data analysis of Verdis Group’s March 2015 site visit, which included numerous discussions with UNK sustainability stakeholders. The latter description is based on qualitative data analysis of Verdis Group’s UNK Sustainability Engagement Survey (March 2015).

Sustainability is important to/at UNK because being a sustainable university demonstrates leadership on this emerging topic. As a result of having a sustainability reputation, prospective students will be motivated to attend UNK. Since being sustainable incorporates financial responsibility and wise resource management, a sustainable UNK results in financial savings and obliges

taxpayers. A sustainable UNK also prepares students to be sustainability literate, lessens UNK’s environmental impact, and creates engagement opportunities.

Sustainability is important to/at UNK because it conserves resources and protects the environment. Sustainable decision-making causes the campus and the local community to be a better place to work and live, saves money for the university, and is generally the right thing to do. Sustainability establishes UNK as a leader in the community and a model for other local organizations. Additionally, sustainability helps reduce emissions, thus protecting public health and lessening the impact of climate change / global warming.

UNK Sustainability Vision

Using input from dozens of UNK stakeholders, Verdis Group helped the UNK Sustainability Committee to develop and approve the following institutional sustainability vision:

UNK envisions a university in which sustainability is aligned with its learning, community engagement, operations, and everything it does. Sustainability is central to in the day-to-day culture of the university. UNK’s graduates are sustainability-literate, prepared to think critically about resource conservation and wise resource management. UNK is actively striving to achieve zero waste and carbon neutrality. The university is also a leader in conserving water, utilizing renewable and efficient energy technology, and promoting healthy lifestyles for its students and employees.

Key, General Findings

Reflecting on the entire sustainability master planning process, Verdis Group offers the following key, general findings:

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- UNK has accomplished noteworthy sustainability success even since the sustainability master planning process began, e.g. earmarking of \$1.5 million for lighting upgrades, overhaul of the recycling system, Zagster bicycle sharing program, Enterprise CarShare program.
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- Some departments/offices are reluctant to weigh or prioritize sustainability criteria during decision-making. Sustainability jointly considers social, environmental, and financial responsibility, but some departments/offices only consider price. Even when considering only price, some departments/offices do not incorporate systems thinking: sustainability strategy “A” might have a relatively high price, but savings from sustainability strategy “B” and “C” can offset that price. Indeed, UNK is a public institution of higher education, but other public universities are embracing more comprehensive approaches to decision-making.
- Sustainability efforts are largely decentralized and uncoordinated among departments/offices, student groups, and administration.
- The establishment and early efforts of the UNK Sustainability Committee were exceptional, but its recent efforts and energy have slowed.
- Exciting and timely sustainability opportunities exist with the development of University Village, including renewable energy, progressive streetscapes, and native landscaping.

Sustainability Performance, Goals, & Strategies

For each topic area (e.g., Energy, Water, Waste, etc.), Verdis Group analyzed extensive data in order to benchmark UNK’s sustainability performance. Then, relying on peer analysis and other experience/expertise, Verdis

Group recommended sustainability goals for 2025 and 2050. Sustainability stakeholders, including the UNK Sustainability Committee, then modified and approved the goals.

In addition to performance measures and goals, the topic area sections contain prioritized lists of strategies. These lists are, perhaps, the most useful components of this plan. To arrive at these lists, key UNK stakeholders evaluated lengthy collections of potential sustainability strategies according to the following criteria:

- **Implementation.** To what extent is the strategy relatively simple to implement?
- **Engagement.** To what extent does the strategy create engagement opportunities?
- **Environment.** To what extent does the strategy lessen UNK’s environmental impact?
- **Financial Savings.** To what extent does the strategy result in financial savings?
- **Leadership.** To what extent does the strategy demonstrate leadership?
- **Student Recruitment.** To what extent does the strategy improve UNK’s ability to recruit talented students?

In some topic area sections, we list the strategies as primary, secondary, or tertiary. In general, primary strategies scored highest in the evaluation exercise. Secondary and tertiary strategies scored less high; however, prioritizing the strategies was an inexact science and stakeholders should not feel obligated to implement the strategies sequentially.

UNK leaders and sustainability stakeholders should reference this plan - particularly the vision, goals, and strategies - as they advance sustainability during the next several years.

OVERARCHING STRATEGIES

OVERARCHING STRATEGIES

The following strategies are cross-topic. They do not fit into discrete, singular sustainability categories such as energy, water, waste, etc., but they are important to UNK's sustainability success as a whole. Strategies that are topic-specific appear in later sections. A later section also describes strategies related to Campus Culture and Engagement, most of which are also cross-topic.

Improve coordination of sustainability planning and implementation

UNK is already addressing sustainability through many projects and programs, but its efforts are largely uncoordinated. The majority of UNK's peer institutions, for example, have a level of sustainability coordination that UNK lacks (see Appendix: Peer Analysis). Thus, in the near term, university administration should task the UNK Sustainability Committee with coordinating the university's sustainability efforts. Alternatively, or additionally, Verdis Group strongly believes UNK should hire a sustainability coordinator. This person would advise on, coordinate, and implement UNK's sustainability planning, policies, projects, programs, and communications. UNK might face difficulty creating and filling a sustainability coordinator position within the immediate future, but eventually having one on staff will enable the university to successfully implement sustainability strategies and achieve its sustainability goals.

Revise the UNK Sustainability Committee charter

For now, rely on the UNK Sustainability Committee to coordinate the university's sustainability efforts. To do this most effectively, the committee should revise and improve its charter to articulate a more strategic purpose with clearer objectives. We provide details about this strategy at the end of this section.

Establish two ongoing funding mechanisms for sustainability projects

- (1) A green revolving loan fund will provide capital for sustainability projects that improve efficiency and result in operations savings.
- (2) A student green fund would support sustainability projects developed by student groups and/or interdisciplinary teams. An optional student fee of \$5

per semester could supply the fund, and the UNK Sustainability Committee could manage the fund and award grants. Also allow and encourage alumni and community members to donate to the fund. In addition to granting money, the student green fund would be a great engagement tool.

Submit an AASHE STARS v2.0 report

To compliment the 2015 Sustainability Master plan, UNK should further benchmark its sustainability performance by submitting a STARS v2.0 report, thus receiving a STARS rating. Thoroughly completing the comprehensive STARS framework may take at least one year, even with this plan and with the help of a student intern.

Prioritize sustainability at the University of Nebraska system level

Currently, the four institutions of the University of Nebraska system independently prioritize sustainability. The university system as whole, however, has an unclear sustainability vision and offers little direction. During the planning process, several staff members expressed that more system-level sustainability guidance would help them incorporate sustainability into their responsibilities. Thus, UNK should partner with the other three institutions to advocate for an official system-level emphasis on sustainability, which could include planning, policies, and/or other guidance.

Include students, faculty, and community partners

To the greatest extent possible, UNK should involve/engage students, faculty, and community partners in all aspects of its sustainability planning and implementation. UNK should always be thinking about how to expand the reach of its sustainability projects, even for facilities projects that may typically only involve a handful of staff members.

In addition to involving/engaging these groups individually, UNK should do so simultaneously. For example, develop a program in which classes or research groups partner with a community organization to address a real-world sustainability challenge.

Strategy Detail: Revision of the UNK Sustainability Committee Charter

The UNK Sustainability Committee was established by the administration in 2009 and was charged with the following [source: University of Nebraska at Kearney Sustainability Charge, August 19, 2009]:

- Lead the campus in educating members of the institution about sustainability
- Recognize those activities that can be identified as supporting UNK’s sustainable efforts

The UNK Sustainability Committee was also generally tasked with defining what it means to be “green” at UNK, identifying other programs and activities that support UNK’s sustainability initiatives, and identifying specific roles for faculty, students, and staff in supporting UNK’s sustainable activities.

The establishment of this committee is an important and meaningful step for UNK. Its existence should signal to the entire campus that sustainability is important to the university’s success. Unfortunately, many on campus are not aware of its existence: nearly 63% of survey respondents indicated they have not seen and/or are not aware of the committee (Verdis Group’s UNK Sustainability Engagement Survey, March 2015).

The committee met regularly for the first few years of its existence and was spurred into action by a passionate staff member that has since left the university. Over the last few years, meetings have been irregular, and the committee’s charge has largely gone unmet.

The committee’s purpose was temporarily refined for purposes of the sustainability master planning process to be an advisory group to the core planning team. To that end, the committee has effectively served its role, providing excellent insight and perspective, setting UNK’s vision and goals related to sustainability, and thoughtfully vetting the strategies throughout the plan that will be pursued over the next several years.

Following the completion and approval of the 2015 Sustainability Master Plan, there are ways in which the UNK Sustainability Committee and its purpose can be modified so as to meet growing demand for sustainability efforts on campus. The following changes to the committee and its charter are recommended:

- Refine the purpose (charge) to be twofold:
 - Fully integrate sustainability into campus operations, decision-making, and the culture of the campus
 - Achieve the sustainability goals noted in this plan
- Refine primary responsibilities:
 - **Champion.** Champion sustainability efforts, building engagement and momentum.
 - **Provide Coordination & Guidance.** Oversee coordination of efforts among all groups making sustainability efforts on campus and provide guidance that will help direct the activities of the other groups (e.g., Enactus, Residence Hall Association, Student Government, etc.)
 - **Communicate & Educate.** Disseminate information and educate the campus community about sustainability goals and initiatives.
 - **Implement.** Help coordinate the implementation of sustainability strategies listed in the 2015 Sustainability Master Plan.
 - **Allocate Resources.** Allocate (or advocate for the allocation of) necessary resources, both financial and human, to help achieve campus-wide sustainability goals.
 - **Direct Student Fee Resources.** If the optional student fee were implemented, this committee would be responsible for managing those funds and approving or denying proposals.
 - **Track & Report.** Ensure progress is tracked and annual progress reports are prepared and distributed.
 - **Policy Change.** Advocate for policy changes that align with the 2015 Sustainability Master Plan goals.

- **Identify Opportunities.** Expand the initiative by identifying new opportunities that align with the 2015 Sustainability Master Plan goals.
- Establish avenues of clearer ownership for members of the committee so they are responsible for implementation of certain aspects/topic area sections of the 2015 Sustainability Master Plan.
- Create and adhere to internal mechanisms for efficient and predictable committee work, including
 - Monthly, standing meetings
 - A process for identifying, soliciting, and orienting new members, especially students
 - Create consistent practices for meeting agendas and notes so as to create some predictability and transparency, including making meeting notes, annual action plans, and opportunities for involvement available to all interested parties (Faculty Senate, Student Government, etc.)
- Incorporate additional specificity with respect to committee representation and terms. As a starting point, consider
 - Permanent membership
 - Facilities Director (co-chair)
 - Academic community (co-chair)
 - Sustainability Coordinator
 - Manager of Custodial Operations
 - Student Government appointee
 - Enactus and/or Residence Hall Association appointee
 - Other important areas from which to have representation (3-year terms) include
 - Faculty (1 - 2)
 - Students (1 - 2)
 - Marketing/Communications
 - Business Services
 - Information Technology
 - Residence Life
 - Athletics
 - Community Members
- Create (formalize) a reporting structure up to the Chancellor's Cabinet, which should include expectations for annual reporting.

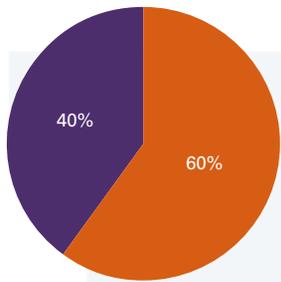
ENERGY

ENERGY

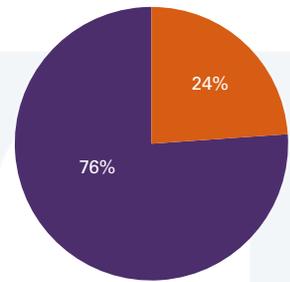
UNK uses grid-purchased electricity and natural gas to fuel its daily operations. Though these operations are necessary for carrying out UNK's mission, they come with a price: UNK's 2014 energy consumption emitted the equivalent of 25,300+ tons of carbon dioxide into the atmosphere and cost the university over \$2.3 million. Thus, one of the most effective and cost-efficient ways for UNK to demonstrate sustainability leadership and conserve natural resources is to improve its energy footprint.

UNK's Energy Profile

Avg site MMBtu (2012-13-14)



Avg energy costs (2012-13-14)



■ Purchased electricity ■ Natural gas

Though grid-purchased electricity makes up only 40% of UNK's energy profile, it is responsible for 76% of UNK's energy costs.

Making the Case for Energy Efficiency and Renewable Energy

53% of facility and energy management executives

Rate energy efficiency and renewable energy as being extremely important to their organization

Plan to increase investments in energy efficiency and renewable energy next year

Over 50% of UNK students and employees

Plan to have one or more facilities able to operate off the grid within the next ten years

55% of UNK students and employees

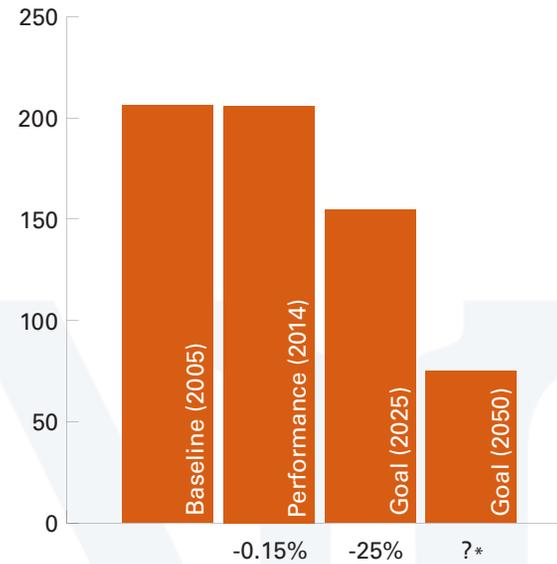
Chose energy as one of the areas on which UNK should focus its sustainability efforts. Only recycling scored higher (64%).

Source: Johnson Controls' Institute for Building Efficiency 'Energy Efficiency Indicator Survey' (2014)

Source: Verdis Group's UNK Sustainability Engagement Survey (Spring 2015)

Energy Performance & Goals

Weather-normalized source kBtu/ft²



*Instead of specifying a longer-term energy goal (which is complex to predict), we will point to the longer-term emissions goal of reaching climate neutrality by 2050. This goal will naturally drive UNK's energy consumption and energy profile in the most sustainable direction.

To achieve these goals, this plan recommends the following strategies:

Primary Strategies Lighting

Lighting is often a very straightforward means by which to gain predictable energy efficiency, and UNK is no exception. Fortunately, current leadership is already well aware of this opportunity and has taken several measures to install more efficient lighting. Nevertheless, opportunities remain and include the following:

Eliminate incandescents

Facilities Management and Planning should complete its efforts to eliminate all incandescent lighting on campus. Once complete, UNK should celebrate and communicate being an incandescent-free campus. Additionally, UNK should encourage residence hall students to use CFL and LED bulbs in their personal lamps instead of bringing incandescents onto campus.

Eliminate T12s

Facilities Management and Planning estimates that 40% of fluorescent tube lamps are T12s. At a minimum, it should continue replacing T12s with T8s when ballasts go out. Where financially appropriate, it should replace entire fixtures with LEDs that are currently being piloted. It should consider a wide-sweeping re-lamping program to aggressively replace T12s (and then T8s) with LEDs; with appropriate planning and communication, a widespread program will alleviate much of the hassle for building occupants that occurs with this larger scope of work.

Continue with the current program to relamp parking lot lights with LEDs

For the last three summers (2013-2015) a relamping program has been in place, and \$1.5 million from utilities savings/cost avoidance has been directed to specifically focus on lighting upgrades.



Newer LED street/parking lights like the ones pictured here are more energy-efficient than their older alternatives.

Install occupancy sensors

Continue with the program to install occupancy sensors in appropriate areas (classrooms, offices, restrooms, conference rooms) in all new construction.

In existing buildings, continue the program wherein occupancy sensors are installed anytime a ballast needs to be replaced (in the aforementioned areas).

Engagement

When asked about where UNK should focus its efforts when it comes to sustainability, 55% of survey respondents (Verdis Group’s UNK Sustainability Engagement Survey, March 2015) indicated energy should be an area of emphasis (second only to waste reduction/recycling at 64%). Furthermore, survey respondents also made it clear that UNK should initiate an engagement campaign around energy conservation: 70% of survey respondents either agreed (46%) or strongly agreed (24%) that UNK should establish an ongoing initiative that engages UNK employees and students in energy conservation and educates them about how to reduce energy use on campus.

While there will always be several opportunities for Facilities Management staff to independently execute energy conservation measures without the awareness of anyone else on campus, there are still ways to engage each and every person that comes on campus in reducing energy consumption, and there is clearly support for doing so.

An engagement campaign focused on energy reduction would have beneficial and potentially long-lasting effects were it designed and executed correctly. Many of the engagement strategies in the Campus Culture & Engagement section of this plan should be focused on energy conservation. One such immediate opportunity is to develop and roll out a campaign focused on reducing peak energy demand in August and September (*see Strategy Detail: Peak Demand Reduction – Communication & Engagement Campaign below*).

Share energy information

Expand the number of people that receive monthly energy reports. Post “dummy bills” to buildings/departments, thus educating their people

about just how much their buildings' energy costs are. This may be easy to implement in residence halls immediately.

Limit plug load equipment

Develop a policy that limits and/or provides standards or regulations for what personal plug load equipment (mini-refrigerators, coffee pots, space heaters, fans, lamps, etc.) can be brought onto campus and plugged in.

Re-establish holiday shutdown procedures

Re-establish and communicate previously established holiday shutdown procedures for offices, classrooms, and residential halls.

Create an energy management team

Create an energy management team that regularly monitors energy use and develops solutions based on its findings. Successful energy management teams involve campus users from across the university. They also invite specific representatives from buildings where there is high energy use so as to engage the building users in identifying causes and finding solutions.

Minimize fume hood ventilation

Develop and roll out a 'shut the sash' campaign to minimize unnecessary ventilation in lab spaces when fume hoods can be closed.

Vending Machines

There are approximately 62 vending machines on campus, all of which use energy 24/7. Some of that energy is certainly necessary to keep beverages cold and operate the machine, but much of it is not needed. Fortunately, there are a few simple strategies that can be easily and relatively inexpensively implemented to reduce vending machine energy consumption.

Install vending machine misers

Like sleep features on computers, vending misers power down the machine to conserve energy when no one is in the area while maintaining product temperatures. When lights and motors are powered down, vending machines generate less heat and use less energy to keep beverages cold. UNK should install energy conserving technology in vending machines, which primarily includes a straightforward system with an occupancy sensor or an internal miser and an energy miser. Such a program should be completed in partnership with UNK's vending machine provider, who may sometimes assist with the costs to install the technology.

De-lamp vending machines

Beverage vending machines have lights on the inside that draw a consumer's attention to the machine under the assumption they will increase sales as a result. Ultimately there's no functional need for those lights to be on in most cases, which makes it worthwhile to remove them (de-lamping). This assumes that the machines are still using fluorescent lighting (rather than LEDs), which is still commonly the case for most units on UNK's campus. De-lamping a machine can save \$75-\$100 per year depending on the type of lighting.



Vending machines, such as this empty, fully-lit one in the Health Science Education Complex, use a substantial amount of energy.

Information Technology

Examine and modify IT settings

In the short run, several opportunities exist to examine and modify the settings on IT devices. These include

Computer labs and walk-up machines. Modify energy settings to the following (default power saver settings):

- Monitor: 5 minutes
- Sleep: 10 minutes
- Hard disk off: 20 minutes

This could be best started as a pilot with an engaged technology coordinator, then rolled out campus wide.

Multi-Function Device (MFD) sleep settings. Ask Canon to deploy the following settings on all MFDs:

- 5 minutes for rarely used machines
- 10 minutes for more frequently used machines

Office/classroom desktops, laptops, etc. Consider these settings:

- Turn monitor off after 10 minutes.
- Turn hard disks off after 15 minutes.
- System standby: after 30 minutes

Printer shut down settings. Manually set printers to the following settings:

- 5 minutes for rarely used machines
- 10 minutes for more frequently used machines

Desktop computers. Utilize power management settings to power down units at specific times each evening. Currently this must be done by user (rather than centrally deployed), which requires a campaign that calls on each department's IT Manager and/or users to change those settings. A one-page guide could be deployed so as to walk users through the process.

Monitors. Implement power management settings such as shutting down monitors or putting monitors to sleep on all Windows machines. Follow suit on all Macs once centralized management of those devices has been completed.

Power management settings. Explore options for software that would allow for different power management settings during business and nonbusiness hours.

Reduce the number of devices

The fewer devices on campus, the less energy is necessary. The goal is not to curb the productive time for students or employees through the reduction of equipment or its performance. Rather, Information Technology Services is planning to work toward the right balance of providing and supporting equipment while not inundating the campus with untracked and unmanaged equipment. Two high priorities for Information Technology Services to pursue in the next five years are as follows:

- Reduce the number of devices on campus so that each appropriate employee has one single (mobile) device. This includes elimination of desktops and does not include providing devices to students.
- Expand use of networked printers/MFDs while eliminating the number of desktop printers. A crucial component to this strategy is the existence of wireless printing capability.

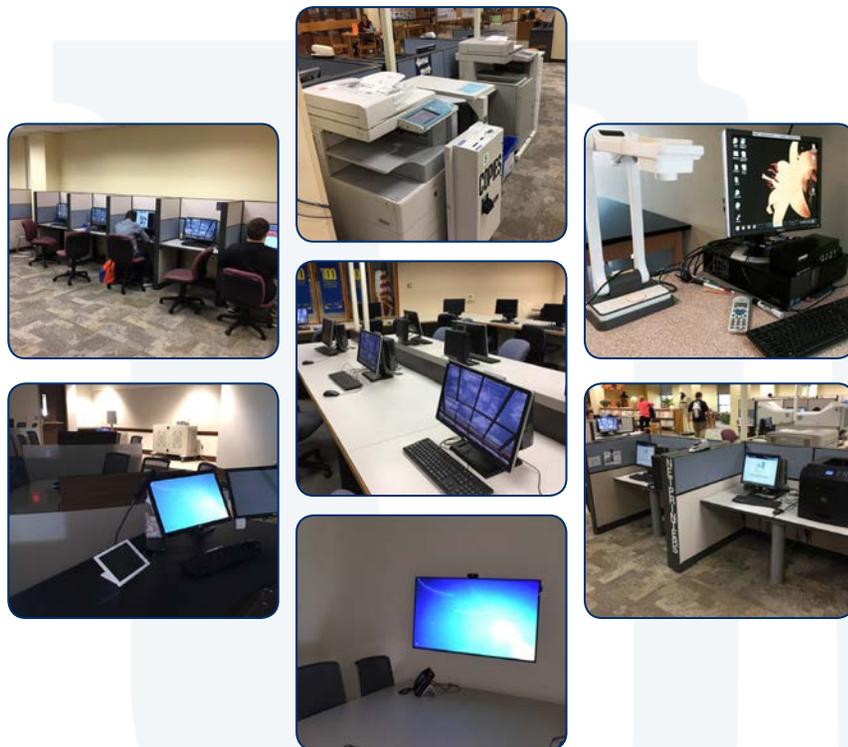
Utilize support and resources

Contact Energy Star's Tech Support and utilize its services to advise on a best course of action for IT energy conservation.

Engage students and employees in IT strategies

Nearly every student and employee interacts with IT-supported technology on a regular basis, which makes a campaign to educate and engage those users very meaningful. There are two main activities for connecting with users to reduce energy consumption.

- **Monitors Off Campaign.** Create and roll out an engagement campaign focused on users shutting off all monitors when they are not in use. Rather than the default being a monitor that is always on (expectation is that users leave them on), the default could be that users always turn them off. A special focus could be on the walk up and lab machines: when a user arrives at a walk up or lab machine, he or she will always need to turn the monitor on before using the machine.
- **Other Equipment Off.** Desktops, laptops, printers and copiers should be off nights, weekends, and holidays.



As these photos indicate, UNK has plenty of opportunities to (1) enable energy-saving IT settings for devices that are not in use and (2) encourage students and employees to engage in sustainable IT behaviors.

- **Educate Regarding Off vs. Unplugged.** Turning some equipment off does not always completely eliminate all power consumption. A broad educational campaign should be pursued to educate users, primarily employees and students living in residential halls, regarding what equipment can or should be unplugged in addition to being turned off.

Deploy Mac centralization software

This will allow IT Services to manage more settings on Academic Macs.

Virtualize servers

Completely virtualize UNK servers within 5-10 years (i.e., no on-campus data center).

Utility Rebates & Incentives

UNK has utilized Nebraska Public Power District's (NPPD) rebates and incentives in the past for lighting improvements and frequency drives, both of which saved thousands of dollars. Continue to (and possibly expand upon) utilize incentives and rebates from utility providers. NPPD's Commercial Energy Efficiency Rebates program offers Lighting, HVAC, and VFD upgrade rebates up to \$100,000 (more with pre approval).

HVAC

Continue pipe insulation

Continue budgeting \$7,000 per year for pipe blankets and expand the program as funds become available. According to the U.S. Department of Energy, insulating hot water pipes reduces heat loss and can raise water temperatures 2-4 degrees Fahrenheit.

Balance the steam/chilled water system

First, control building return temperature, then balance the steam/chilled water system to ensure it is appropriately sized.

Install highly efficient steam traps

Old traps allowed 5% leakage, which was good at the time. New steam traps have no leakage, which often results in a payback period of less than a year.

Install frequency drives on cooling towers

Install frequency drives on four central plant cooling towers, which provide the ability to control cooling capacity and load with maximum energy efficiency.

Secondary Strategies

Engagement

Pilot energy budgets

After executing the aforementioned strategy related to sharing energy consumption information with a much broader audience, implement a pilot wherein energy costs are pushed to the budgets of appropriate departments/units. Savings could be shared between the departments/units and Facilities Management. This is currently only feasible for electricity consumption; steam/chilled water would need to be distributed based on square footage.

Create a living lab at University Village

In new residential buildings, consider creating a living lab. A portion of which might include meters at the outlet level: consumption data could be used on the academic side to study human behavior, use of new technologies aimed at energy conservation, and other new facets of sustainable living.

Utilities Master Plan

In the Electrical Volume of the 2015 UNK Utilities Master Plan, Appendix F, Chart 2 (Aggressive Reduction of Energy Consumption) and Chart 3 (Approaching Net Zero) include excellent high-level strategies for possible energy conservation. In all cases, these strategies should be considered and further evaluated, including a cost/benefit analysis, before implementation.

2015 UNK Utilities Master Plan, Appendix F, Chart 2:

Aggressive (50%) Reduction of Energy Consumption - Strategies to Consider

Strategy	Potential Energy Impact (kBtu/ft ² /yr)
Superior Envelope Performance	7 - 10
Daylight Harvesting with Dimming Controls	1 - 2
Demand Control Ventilation	1 - 3
Reduced Duct Friction Rate	0.5 - 1
Green Roof	0.5 - 1
Reduced LPD - .75% W/ft ²	1 - 2
Improved Light Source Efficiency, i.e. LED	1 - 2
Auto/Integrated Lighting Control	0.5 - 1
Occupancy Control of HVAC/Ventilation	1 - 2
Solar Heating for Building and Domestic Water	1 - 2
Dedicated Outside Air System w/ Total Energy Recovery	2 - 4
Chilled Beams (Active and Passive)	1 - 2
Under Floor Air Distribution	1 - 2

2015 UNK Utilities Master Plan, Appendix F, Chart 3:
 Approaching Net Zero, 80% Reduction of Energy Consumption - Strategies to Consider

Strategy	Potential Energy Impact (kBtu/ft ² /yr)
Thermal Massing (Stack Effect) EUI	10 - 20
On-site Renewable Energy Photovoltaic (PV) / Pedestrian-scale Wind	10 - 50
Plug Load Occupancy Sensors	1 - 2
Natural Ventilation	1 - 5
Total Air Quality - Reduced Ventilation	1 - 2
Increased HVAC Ventilation	0.5 - 1
Total Building Systems Energy Monitoring for Demand Limiting	1 - 3

Controls & Meters

Evaluate steam/chilled water meters
 Consistently re-evaluate whether or not building-by-building steam/chilled water meters would be of any value. To date, UNK can only primarily identify a building’s electricity profile. Before pursuing this strategy, UNK’s Johnson Controls system should be fully utilized so that all relevant meters are on the system. Determining the full energy profile of a building will help determine which buildings need more attention and which do not.

Install building controls
 Where high quality energy controls do not exist, install them. Ensure systems are only on when needed. This may require a building-by-building review with building managers (facilities) and building users.

Information Technology

- Secondary IT strategies include the following:
- **IT Guidelines.** Develop and disseminate Green IT Guidelines ([see UNO’s as a good reference](#)) that instruct all colleges/departments on proper guidelines for conserving typical plug load energy. Create a strong education and engagement campaign around these guidelines to ensure wide adoption.
 - **Smart strips.** Pilot smart power strips and deploy them more broadly (if appropriate) following the pilot.
 - **Desktop settings.** Change to “plugged in” from “AC” or “on battery.” Doing so lowers the power draw of the computer.
 - **Thin Clients.** In the short-term, upgrade to thin clients to replace existing classroom/lab computers. For users that will not transition to a mobile device in the short-term (a primary strategy), consider thin clients.
 - **Reallocation of Devices.** Actively manage and re-deploy devices (primarily desktops, laptops, mobile devices) that are “replaced” with newer machines. Rather than allowing the user to retain the device, deploy it to a new user so he or she does not need to buy a new device as well.

Staffing

Hire an energy manager
 UNK might face difficulty creating and filling an energy manager position within the immediate future, but eventually having one on staff will enable the university to successfully implement energy strategies and achieve its energy-related sustainability goals. Verdis Group strongly believes this position would pay for itself through cost savings.

HVAC

Analyze mechanical system replacement
 When equipment fails and the process for analyzing its replacement is underway, fully examine the incremental cost to purchase the most efficient

equipment on the market. Conduct a payback analysis on that marginal cost increase. Time limitations are often a challenge when conducting this analysis. As such, proactively prepare for the failure of equipment by pulling together some of the information that will be needed to conduct the analysis.

Replace filters

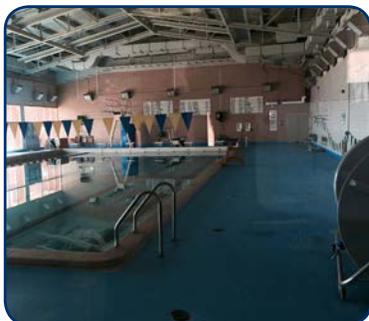
Institutionalize/formalize the excellent filter replacement program that is currently in place.

Assess building control scheduling

Ensure HVAC schedules accurately correspond with building occupancy. Ensure systems are only on when needed. This may require a building-by-building review with building managers (facilities) and building users. A special focus should be on reducing building energy demand during the summer when very few classes are held and not many faculty are present (Academic buildings may not need to be fully “on” during the summer). The energy manager position referenced above is critical to the implementation of this strategy.

Swimming Pool

Install a swimming pool cover



Without covers, UNK’s swimming pools lose (i.e., waste) a tremendous amount of heat energy.

Swimming pools lose energy in a variety of ways, but evaporation is by far the largest source of energy loss. Evaporating water requires tremendous amounts of energy. It only takes 1 Btu (British thermal unit) to raise 1 pound of water 1 degree, but each pound of 80°F water that evaporates takes a whopping 1,048 Btu of heat out of the pool. According to the

U.S. Department of Energy, savings of 50% to 75% are possible by installing a cover.

Building Envelope

Perform building envelope audits

Create and implement a more formal program to conduct building envelope audits with a focus on achieving superior envelope performance. One focus area is addressing door and window issues. These activities are occurring more and more often as of late with a general cycle where the carpenter and painting crews conduct audits. Where possible and needed, they are replacing door closers and adjusting doors and getting thresholds sealed appropriately. In some cases, complete entry replacements are occurring. Window seals are also being assessed. Per the 2015 UNK Utilities Master Plan, superior envelope performance has a potential energy impact of 7-10 kBtu/ft²/yr.

Expand infrared thermography

Continue expanding the infrared thermography program to assess building envelopes.



If light can enter through the envelope of these UNK doors, then heated and conditioned air can pass through the envelope, as well, resulting in wasted energy.

Peak Demand Reduction

Consider a Building Automated System-based Power Demand Limiting strategy. Per the 2015 UNK Utilities Master Plan, pursue a detailed study of the potential for a BAS-based Power Demand Limiting strategy to identify if it is a valid tool for UNK to pursue in the future to help reduce its energy costs. Couple this strategy with a peak demand reduction communication and engagement campaign:

Strategy Detail: Peak Demand Reduction – Communication & Engagement Campaign

As articulated in the 2015 UNK Utilities Master Plan, the marginal cost of energy during monthly peak periods can be costly, which makes it attractive to focus resources on reducing UNK's peaks, especially during summer months when electricity rates are at their highest.

In addition to pursuing many of the energy conservation measures aimed at reducing base load consumption, UNK should create and strategically implement a plan focused on energy conservation behaviors when summer peak demand is expected to be reached. Here are a few key components that should be included in such a plan:

Targeted approach. In addition to general awareness across campus, specific and refined strategies and communications should be targeted on the following:

- Buildings that have the most intense energy use during peak times
- Buildings that have the most low-hanging fruit
- Buildings that provide the best opportunities to engage students and employees

Identify constituencies. While campus-wide communication is warranted, more specific and diligent efforts are appropriate for those constituencies that are likely to be in the aforementioned buildings.

Focus on select behaviors. Keep it simple and focus on behaviors that everyone can understand and easily implement. Examples include

- Close shades, blinds, and curtains whenever possible to reduce solar heat gain (specifically on south and west facing windows).
- Lower lighting levels where possible; turn off lights in unoccupied areas and when leaving a room.
- Turn off and unplug all electrical equipment not in use (computers, coffee makers, printers, chargers, etc.), especially in offices.

- Shut fume hood sashes when not in use.
- Open doors manually, when possible, instead of using the ADA buttons.
- Lock thermostats at 76°F (this is a Facilities Management effort, but communication is critical for this to be successful and to limit complaints).

Establish protocol & resources. Create protocols that are easily implemented once high-peak risk days are at hand. Someone must monitor weather and determine when to implement the plan. Communication and engagement modules must be prepared and ready. Namely, who is targeted, how and when will they be reached, what is the message, and how can they be recognized and incentivized for participating?

Focus on late summer months. Rates are higher and electricity demand peaks in the summer. Focus on August and early September for the program. Chances of success will be higher. If peaks are often hit in the weeks prior to the arrival of students, a different communication strategy will be needed to reach those that are on campus in July and early August. Energy consumption trends in late April through early May should also be monitored to examine whether there are peak reduction opportunities associated with the first relatively warm days of the cooling season.

Other tidbits. A few other aspects of the program are important to incorporate:

- Communicate what facilities is doing so that everyone knows it's a full-scale attack.
- Demonstrate that leadership is committed as well. Using humorous videos or photos is particularly effective.
- Allow employees to work remotely when possible.
- Measure success via key indicators that include peak energy and the effectiveness and reach of communication and engagement efforts.

Plug Load

Deploy timers and automatic shut offs

Deploy timers and automatic shut offs for situations in which plug load equipment could be turned off during unoccupied hours.

Move all vending machines indoors

When vending machines, especially beverage machines, are subject to the heat and humidity of the summer, they must work much harder to keep beverages cool - thus unnecessarily using more energy than they would if they were indoors.



By moving outdoor vending machines indoors, UNK will prevent them from wasting energy - especially during spring, summer, and fall months.

Tertiary Strategies

Meters & Controls

Install more than just one electrical meter per building to allow for more detailed analysis of where the energy load is located.

New Design & Construction

When designing new buildings, consider the following:

- Design and build to net zero, or include elements that will allow UNK to get to net zero easily when the situation changes (e.g. wire chases to the roof to connect to eventual solar array). AIA 2030 and ASHRAE's Net Zero energy goals are close to net zero.

- Per the 2015 UNK Utilities Master Plan, when considering fuel cells, focus on those that use natural gas for the foreseeable future.

With respect to certain new building practices, continue with the following:

- Installation of digital control systems
- VAV boxes in every room
- Conducting energy models
- Per the 2015 UNK Utilities Master Plan, building commissioning should be continued as it is going to be a common part of building projects in the future (due primarily to more stringent energy codes).
- And many other strategies that were referenced above, such as LED lighting and occupancy sensors

University Village renewables

Per the 2015 UNK Utilities Master Plan, for compliance with the next update to energy codes, the allowable energy usage for a typical project will be more difficult to achieve without some type of on-site renewable energy. Furthermore, estimated and software modeled energy performance is commonly not the same as actual energy usage, which makes it prudent to be able to create more on-site renewable energy than the modeled energy consumption rate anticipates the building will use. UNK should continue discussions with NPPD and other energy providers regarding incorporation of renewable energy into University Village plans. More specifically

- Per the 2015 UNK Utilities Master Plan, when considering photovoltaic, focus on PV roof mount, PV shading structure, and/or PV laminate applications.
- Move forward with installation of a California loop heat pump system.
- Consider involving students in the study of the effectiveness of renewable systems once plans are more concrete.

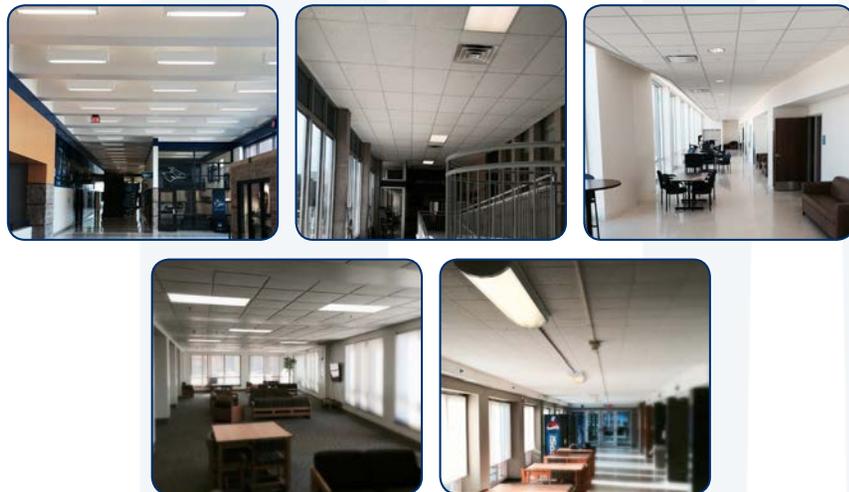
Lighting

Lighting control system

When installing a lighting control system, work toward a system where each fixture has a specific address, can be dimmed based on daylight, scheduled based on occupancy, and controlled from a central building control system.

Daylighting

When incorporating daylighting into lighting system designs, include controls such as daylight sensors, dimmable lighting, and/or more advanced lighting controls/switching that will allow for building lights to be turned off when adequate daylight is available. Per the 2015 Utilities Master Plan, daylighting controls, which could be manual in the past, will now have to be automatic controls. Daylight harvesting with dimming controls has a potential energy impact of 1 - 2 kBtu/ft²/yr.



During Verdis Group's several visits to UNK - and all throughout campus - building spaces unnecessarily had their lights turned on while natural light was abundant. This is a tremendous opportunity for energy savings.

Timeclocks

Adjust lighting timeclocks to meet the needs of occupancy every semester (spring, summer, fall) rather than assuming that lights are needed for extended periods year round.

Indoor Air Quality

Create and implement a more formal Indoor Air Quality management program that proactively detects issues and seeks to address them in a quick manner. Continue with pursuit of pilot sensors (e.g. currently considering carbon monoxide sensors) and consider expanding that program to evaluate other common indoor air quality issues such as high levels of carbon dioxide (there is an inverse relationship between CO₂ levels and student performance).

HVAC

Rightsize HVAC fans

Examine whether HVAC fans are rightsized for the load and replace when financially appropriate (likely more relevant for those systems built before 1998).

Air duct leakage

Develop and implement a more formal schedule to evaluate and resolve air duct leakage.

Variable air volume

Over the long run, and when funds are available and when other major renovation work is planned, transition systems from constant volume air-handling systems to variable air volume systems.

Peak Demand Reduction

Thermal storage

Evaluate the possibility of implementing a thermal storage technique in large buildings or on a campus scale.

Staggering startup

Per Utilities Master Plan, if UNK has heavy intermittent loads, stagger use of these loads, which happens to a good extent today.

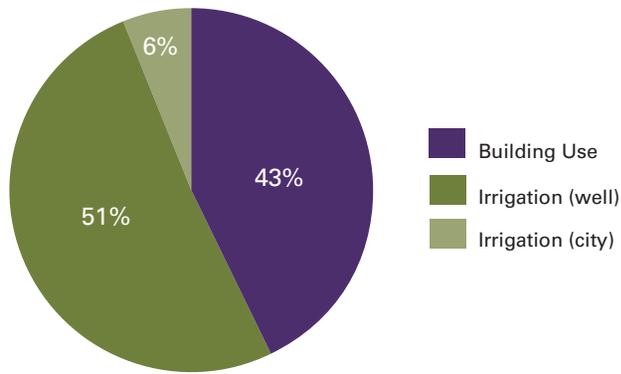
WATER

Water

Pumping, treating, and delivering water are resource-intensive processes. Additionally, surface water and groundwater supplies are vulnerable to global climate change impacts. Thus, conserving and managing water are two of the most significant sustainability challenges.

During fiscal year 2014, UNK consumed over 126 million gallons of water. This is equivalent to 191 Olympic swimming pools and cost the university nearly \$237,000 in water and sewer charges to the City of Kearney.

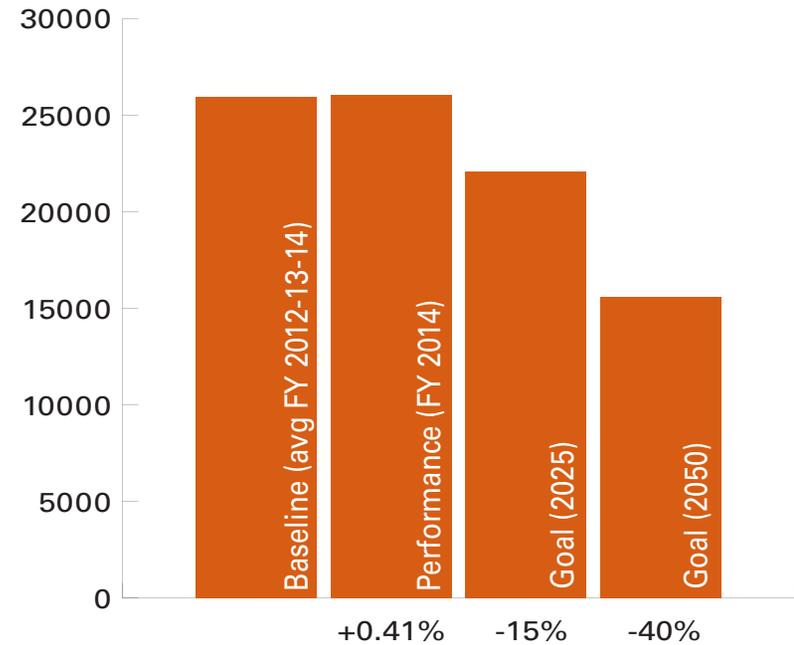
UNK's Water Profile (FY 2014)



During fiscal year 2014, 43% of UNK's total water consumption was used for building operations (e.g., heating and cooling) or used by building occupants (e.g., laboratories, restrooms, kitchens). The other 57% of total water consumption was used for irrigation.

Water Performance & Goals

Gallons per weighted campus user



To achieve these goals, this plan recommends the following strategies:

Primary Strategies

Building Use

Continue to replace residence hall shower heads

Facilities Management and Planning has already started the process of replacing older shower heads with water-efficient shower heads that have a 2.5 gallon per minute flow rate or better. Once 100% of residence hall shower heads have been replaced, UNK will notice even more significant water savings.

Provide shower timers to residence hall students
Provide shower timers to all residence hall students. The timers could be included as part of a water-saving education and engagement campaign.

Inventory consumption rates of toilets, urinals, and restroom faucets
Document the existing flush volumes of all toilets and urinals on campus, plus the flow rates of all restroom faucets. Based on the findings, develop a plan to phase-out older fixtures and replace them with water-efficient alternatives. For example, toilets should use only 1.5 gallons per flush, and faucets should have a 1.5 gallons per minute maximum flow rate.

Irrigation

Verify that peak season irrigation only occurs during the most appropriate hours
Occasionally check (or entrust someone(s) to check) all irrigation systems to ensure that peak season irrigation only occurs between 10:00p-6:00a for permanent irrigation areas and 8:00p-6:00a for establishment irrigation areas.



Verdis Group took this photo early in the afternoon on a hot September day in 2015. UNK likely wasted much of this irrigation water due to high rates of evaporation and transpiration. UNK should continually monitor its irrigation and minimize/eliminate daytime watering.

Verify that mower deck elevations are set at 3" or higher for turf areas
Occasionally remind mowing staff to verify that deck elevations are set at 3" or higher. Turf of this length promotes deeper root growth, which requires

less irrigation. This length also suppresses weed germination, which should allow for less herbicide application and other methods of weed management.

Inspect and replace irrigation heads
Per the 2013 Campus Landscape Master Plan, identify all existing aged and/or inefficient irrigation heads and replace them with new, more water-efficient heads.

Secondary Strategies

Pilot a project to capture and reuse rainwater
Encourage Facilities Management and Planning to collaborate with faculty, staff, and students to pilot a project in which rainwater is captured and reused. Provide opportunities for curricular and co-curricular education and campus engagement during all stages of project planning and implementation.

Pilot a water conservation program or campaign
Trial a curricular and/or co-curricular program in which students (or some combination of students, faculty, staff, and community stakeholders) engage in water conservation education, behavior, and/or outreach.

Irrigation

ASLA Sustainable Sites Initiative
Review the American Society of Landscape Architects' Sustainable Sites Initiative guidelines and consider requiring that new projects comply.

Professional development and training
Pursue professional development and training for the irrigation technician on the topic of managing irrigation more water-efficiently.

Over-spray
Occasionally check that irrigation system head layouts and spray patterns minimize over-spray onto paved areas.

Drip irrigation

Verify and assert that drip irrigation is used for shrub and perennial planting beds.

Well pump controls

Per the 2013 Campus Landscape Master Plan, create a plan to upgrade both irrigation well pumps with variable frequency drive controller panels, flow sensing, and filtration with automatic flushing.

Tertiary Strategies

Building Use

Dual flush toilets

Pilot or develop a plan to phase-in commercial dual flush toilets where appropriate.

Automatic-flush toilets and urinals

Develop a schedule for routinely cleaning and testing automatic flush valves to ensure they are operating optimally.

Condensate

Pilot a project to capture and reuse condensate from cooling coils at Bruner Hall and/or HSC. The project could engage students in curricular and/or co-curricular education.

Dish washing

Assess (or entrust someone(s) to assess) all pre-rinse spray valves in dish washing areas and replace them with water-efficient alternatives as appropriate.

Central plant

Reevaluate the central plant's reverse osmosis study.

Irrigation

Landscape design (plants)

Verify that landscape designs include native and adaptive trees, shrubs, perennials, and grasses, per the design palette of the 2013 Campus Landscape Master Plan.



Sustainable landscape design, such as this landscaping at the Health Science Education Complex, requires less water, uses water more efficiently, and will help UNK achieve its water reduction goals.

Landscape design (soil)

Advise on new construction and renovation design standards to include preferred finished soil conditions. These standards could then be prescribed in specifications and contracts.

Central controls

Install (or earmark funding for) a centrally-controlled irrigation system that determines water needs by analyzing air and soil moisture.

Pipes

Per the 2013 Campus Landscape Master Plan, verify that irrigation system mainlines are Class 200 PVC material installed at 24" depth to the top of pipe for 4" pipes and less, and 36" for pipes 6" and larger.

Backflow preventers

Per the 2013 Campus Landscape Master Plan, replace backflow preventers of the existing irrigation systems and add enclosures.

WASTE

Waste

Hundreds of universities across the country are advancing towards zero waste by reducing, reusing, recycling, and composting. These practices not only conserve natural resources, but they also divert used materials from landfills, where they would otherwise pile up for hundreds of years while producing greenhouse gas emissions and contaminating water. Additionally, these practices allow universities to avoid purchasing costs, reduce landfill and hauling service fees, and engage the entire campus community in achieving tangible sustainability goals.

During calendar year 2014, UNK recycled 12% (by weight) of its solid waste. According to estimates by UNK Custodial Operations, this 12% recycling rate includes over 107 tons of paper, plastic, and cans from the single stream recycling program (also known as mixed recycling or all-in-one recycling) and over 14 tons of other materials such as metals, electronics, lamps, and batteries.

During residence hall move out in spring 2015, UNK students proudly donated nearly 1,400 pounds of reusable clothing, school supplies, non-perishable food, and other items to local charity organizations. Facilities Management and Planning and Residence Life plan to build on the success of this program during future residence hall move-outs by collecting and donating even more reusable items.

Throughout 2015 and ongoing into the 2015-2016 school year, Custodial Operations has implemented/will implement several improvements to UNK's existing recycling efforts:

- The Nebraskan Student Union, all residence hall rooms, academic and office buildings, and UNK's grounds installed new receptacles for single stream recycling and landfill-bound solid waste.
- Larger-scale outdoor events will have temporary, transparent receptacles for capturing recyclable materials.
- Facilities Management and Planning is working with Creative Services to develop a new recycling brand, plus recycling signage, education, and other communications.

- Facilities Management and Planning partnered with Residence Life to implement an inaugural residence hall move-in recycling program in August 2015.



During mid-2015, Custodial Operations debuted several new types of receptacles to promote outdoor recycling and replace existing indoor receptacles that made recycling challenging. Clearly they addressed a need: 81% of Verdis Group's UNK Sustainability Engagement Survey (March 2015) respondents agreed or strongly agreed that UNK should enhance its recycling program.

UNK now plans to increase its recycling rate, thus sending less - and eventually close to zero - solid waste to the landfill.



UNK's recycling rate equals the total weight of recycled materials (numerator) divided by the total weight of ALL waste (denominator). Thus, to increase its recycling rate, UNK must increase recycling and/or implement strategies to decrease all other types of waste.

Waste Performance & Goals

Recycling rate



To achieve these goals, this plan recommends the following strategies:

Primary Strategies

Seek opportunities to be more paperless

Continue to implement new paperless practices. For example, switch to entirely electronic admissions applications, transcripts, and W-2 tax forms. Some offices may have employees that prefer printed W-2 tax forms; in these offices, leadership should encourage paperless behavior to the extent reasonable, promote recycling, and educate employees about the sustainability impacts of paper consumption.

Pilot a residence hall recycling competition and/or recognition program

Test a program that motivates residence hall students to recycle more, incentivizes their participation, and rewards their achievements. Alternatively, UNK could participate in Recyclemania and compete against other colleges and universities. In 2011, participating Recyclemania universities' recycling rate increased from 24% during the first half of competition to nearly 28% during the second half. UNK could compete in Recyclemania's Competition Division (which requires weight data from the entire campus) or Benchmark Division (which only requires weight data from a subset of campus).

Evaluate the residence hall move-in and move-out recycling programs. Even though successful, evaluate the move-in and move-out recycling programs. Opportunities may exist to (1) capture more cardboard and plastic during move-in, (2) improve logistics, (3) increase participation, and (4) measure success.

Conduct an audit of cafeteria waste

For most of the year, and especially since composting is not currently available at UNK, students generate a high quantity of waste while dining in the cafeteria. In order to develop the most appropriate strategies for reducing cafeteria waste, UNK needs to know the cafeteria waste profile: What percentage is recyclable? What percentage is theoretically compostable? What percentage of the food waste is entrees, sides, or specific foods, etc.? Piloting this sort of audit could be a great compliment to the existing Project Clean Plate.

Solicit and deploy student recycling volunteers

One of the easiest ways to increase recycling is to have student volunteers stand near waste disposal receptacles during events. The volunteers encourage event-goers to recycle their waste items and answer questions about whether specific items should be disposed into the recycling or landfill streams. These volunteers could come from Enactus, Residence Hall Association, Student Government, or elsewhere.

Develop creative recycling communications for athletic events

For example, enlist students to help develop a short, humorous recycling video to show during time outs or between periods at football and basketball games.

Continue to install water bottle refill stations

UNK students and employees recognize the water bottle refill stations as one of the university's most visible sustainability successes, diverting thousands of plastic bottles from the landfill. Over 90% of UNK survey respondents (Verdis Group's UNK Sustainability Engagement Survey, March 2015)

indicated they are aware of the stations, by far the most widely recognized sustainability effort on campus. Thus, Facilities Management and Planning should continue to install new stations and encourage departments/buildings to set aside relevant funding.



UNK's water bottle refill stations not only help to reduce landfill waste, but they also increase awareness of UNK's sustainability efforts more generally.

Pilot centralized collection of landfill-bound waste in an office setting
Identify one office that is willing to test centralized collection of landfill-bound waste paired with desktside recycling. In other words, the office's employees would recycle at their desks, but would take their landfill-bound items to a receptacle that is centrally located within the office. This contrasts the typical setup in which both landfill-bound materials and recyclables are disposed at the desktside. By making landfilling more "difficult," this strategy could likely increase recycling. This strategy could also help eliminate odors and insect pests, make custodians' responsibilities simpler, and encourage employees to be more active throughout their day.

Secondary Strategies

Launch a campaign to reduce cigarette litter

Though this strategy will not increase UNK's recycling rate, it is still an important (and potentially contentious) solid waste -related issue on which other colleges and universities are focusing. In 2015, Keep America Beautiful

distributed \$275,000 to Cigarette Litter Prevention Programs at 73 U.S. organizations. Participating communities reported an average 48 percent reduction in cigarette litter.

Install signage that promotes paper towel conservation

Since paper towels are likely a major component of UNK's landfill-bound waste profile, develop creative signage for bathrooms and kitchens that encourages students and employees to conserve paper towels. This signage should be installed directly on paper towel dispensers when possible.

Contract with WasteCap to pilot its GoZero services

WasteCap's GoZero services (planning, communications, supplies, oversight) will help UNK achieve "zero waste" at a large campus event, e.g. Blue and Gold Showcase.

Measure and communicate copying/printing

Departments/offices, perhaps with assistance from Business Services, should measure their copying/printing. They should also communicate to individual employees the quantity of his or her total quarterly copying/printing. Equipped with these data, departments/offices could set group or individual reduction goals, or UNK could set an institutional goal. Simply making employees aware of their copying/printing/paper consumption (and incentivizing them to meet goals) will motivate them to consume less.

Collect more used and expired toner/ink cartridges

Custodial Operations and Information Technology Services should develop a communication and engagement campaign to collect more of UNK's used toner/ink cartridges. Additionally, they should create a program in which they collect expired toner cartridges and send them to a third party to be refilled.

Collect more electronic waste

Custodial Operations, Information Technology Services, and other partners should develop a communication and engagement campaign to collect more of students' and/or employees' electronic waste.

Benchmark pre-consumer food waste in the cafeteria

Preliminarily measure (e.g., weigh) the cafeteria's pre-consumer food waste (prep waste, spoilage, etc.) on a per-meal or per-day basis. This will equip Dining Services and Custodial Operations to track this information over time and develop improvement strategies.

Explore opportunities to donate perishable food and/or food waste

Dining Services may be able to divert some perishable food from the landfill by donating it local nonprofit agencies such as pantries, shelters, soup kitchens, after-school programs, and senior centers. Additionally, Dining Services may be able to donate (or sell?) some food waste to local farmers or composters.

Improve marketing of the cafeteria's "To-Go" reusable container program

Few students take advantage of this existing sustainability program that reduces food waste.. Dining Services and Custodial Operations should partner to identify participation barriers and market the program more boldly.

Offer retail discounts to customers who bring reusable containers

On-campus retail food and beverage managers should offer a small discount to students and employees who bring reusable containers (e.g., mugs) instead of relying on the retailer's disposable containers.

Benchmark the total weight of UNK's outgoing materials

Though this plan's recycling rate includes an estimate of landfill+recycling in its denominator, Custodial Operations should (and is already planning to) seek ways to measure all outgoing materials more precisely. Eventually, UNK could develop a new sustainability performance metric (i.e., total annual

weight of all outgoing materials), report this metric to AASHE STARS, and institutionalize a reduction goal.

Encourage instructors to make syllabi available online only

Anecdotally, UNK students report that many instructors distribute printed syllabi on the first day of class. Instead, instructors should make syllabi available online only. Students who need a printed syllabus will still have the option to print it themselves.

Evaluate the surplus program

Evaluate the surplus program to identify opportunities to increase the re-use of materials. Facilities Management and Planning may discover that creating an online "store" improves participation.

Tertiary Strategies

Construction and demolition waste

Facilities Management and Planning should obtain measurements of the past three years' non-hazardous construction and demolition waste and track this information moving forward.

Copying/printing reduction program

Pilot a program in which students and/or employees from different colleges/ departments strive to achieve the greatest percent reduction in copying/printing during a specified period. Recognize and incentivize participants based on their accomplishments.

Paperless meetings

UNK should implement a policy or guidelines that asks employees and student groups to utilize technology during meetings instead of paper. I.e., the policy or guidelines should promote paperless meetings.

Waste Audit Dumpster Dive

Facilities Management and Planning, Residence Life, and other partners should evaluate the existing Waste Audit Dumpster Dive program. The program provides UNK with a snapshot of its waste profile, but faces challenges regarding scope, planning, participation, and safety.



The existing, annual Waste Audit Dumpster Dive has its challenges but, upon evaluation and improvement, presents opportunities to engage students, learn about UNK's waste profile, and increase UNK's recycling rate.



Double-sided printing

Limit copy paper and toner/ink (cartridge) consumption by institutionalizing double-sided printing, particularly for multifunction devices. Information Technology Services should be able to help change default settings to double-sided printing. This (potentially contentious) strategy would likely need to be paired with an appropriate education and communication campaign and could be tied to a strategy to share paper and toner/ink savings with departments.

Recycling brand

Facilities Management and Planning should apply the UNK recycling brand (if/when it is developed) to all 95-gallon recycling containers and any recycling dumpsters/compactors. The containers and dumpsters/compactors should be kept looking nice so as to portray recycling as an institutional priority.

Hyperlocal evaluation

Custodial Operations should systematically and periodically work with individual buildings, departments, or offices to evaluate their hyperlocal waste management systems, identifying best practices, challenges, and opportunities.

Styrofoam

To the extent possible, Loper Catering should replace styrofoam with reusable or recyclable materials.

Printed lecture slides

Anecdotally, some instructors require, ask, or suggest that students print lecture slides. Implement a policy or guidelines that supports and incentivizes instructors who encourage students not to print lecture slides.

Student printing

Promote technology and encourage copy paper conservation by restricting or eliminating students' free printing and/or require that libraries and computer labs default to double-sided printing. Consider a shared-savings model with departments.

Online resources

Make course catalogues, course schedules, directories, and other appropriate resources available online by default, printing few of them only when necessary.

Paper timesheets

To the extent possible, appropriate departments should utilize technology and conserve copy paper by eliminating paper timesheets.

Hand dryers

Facilities Management and Planning should inventory bathroom paper towel dispensers and, when and where appropriate, install hand dryers. The hand dryers should be installed in convenient locations (e.g., beside paper towel dispensers) to give bathroom users a paperless option. [Research](#) suggests that most hand dryers have a smaller global warming potential (gCO₂ eq) than paper towels, require less energy/water/land, and better promote human health and ecosystem quality.

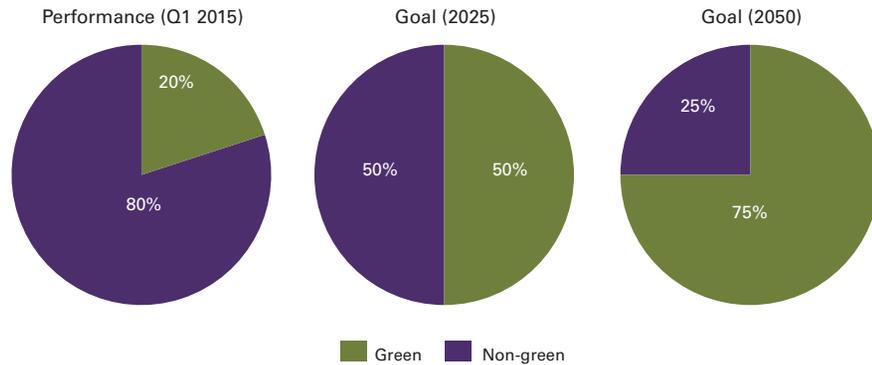
PURCHASING

Purchasing

UNK spends hundreds of thousands of dollars on goods and services annually. Thus, purchases and purchasing practices/policies are tremendous opportunities for UNK to advance sustainability. Sustainable purchasing helps UNK (1) avoid producing solid waste and (2) prioritize environmental and social responsibility.

Purchasing Performance & Goals

Percentage of Office Depot purchasing that is classified “green”



To achieve these goals, this plan recommends the following strategies:

Primary Strategies

Implement an Office Depot green alternative program

The Purchasing Department should partner with Office Depot to implement a green alternative program that allows purchasers to select from approved lists of products with green benefits.

Provide green purchasing education

The Purchasing Department should work with other partners to educate employees – especially purchasers – about (1) how to identify green items when purchasing from Office Depot, (2) how to make greener purchases generally, and (3) why doing so is important.

Increase purchase of green Office Depot copy paper

The Purchasing Department should increase the percentage of purchased copy paper that has recycled content, is certified by the Forest Stewardship Council, and/or is certified to meet similar multi-criteria sustainability standards. According to UNK’s Q1 2015 Office Depot Greener Office report, 32% of copy paper spend contained post-consumer recycled content and 14% was FSC certified virgin paper. The remaining 54% of copy paper spend was uncertified virgin paper or SFI / PEFC certified virgin paper, neither of which Office Depot considers green.

Increase purchase and use of remanufactured toner/ink cartridges

The Purchasing Department should partner with Information Technology Services to investigate the extent to which departments/offices purchase and utilize remanufactured cartridges. For departments/offices that do not do so, Information Technology Services should encourage them to pilot using remanufactured cartridges. If successful, the Purchasing Department should work with Office Depot to eliminate the option to buy virgin cartridges. Additionally, the Purchasing Department and Information Technology Services should encourage purchasers who buy from somewhere other than Office Depot to buy only remanufactured cartridges.

Related Strategies

Institutionalize purchase of green cleaning and janitorial products

Implement an institution-wide stated preference to purchase cleaning and janitorial products that are Green Seal or UL Environment (EcoLogo) certified and/or meet similar multi-criteria sustainability standards. Communicate this policy/guidelines widely, and encourage campus users to not bring cleaning products onto campus unless they are green-certified.

Purchase in bulk

Departments/offices should evaluate their potential to take on more items purchased in bulk. If capacity generally exists, UNK should implement an institution-wide stated preference to purchase items in bulk.

Purchase Energy Star certified electronics and appliances

Implement an institution-wide stated preference to purchase computers, monitors, and other electronics/appliances that are Energy Star certified. Department/office leadership should take responsibility for enforcement.

Phrase RFPs to incorporate sustainability

Prompt vendors to compete on the basis of lowest total cost of ownership in addition to (or instead of) purchase price.

Require vendor adherence to minimum environmental standards

Implement policies, guidelines, and/or agreements that require new and/or existing vendors and contractors and/or franchisees to adhere to minimum environmental standards and practices.

Institutionalize life cycle analysis

Implement an institution-wide stated preference to employ life cycle analysis when evaluating purchasing options. This may require the Purchasing Department or other stakeholders to provide life cycle analysis education to departments'/offices' leadership, and department/office leadership should take responsibility for enforcement.

Consolidate order purchases temporally

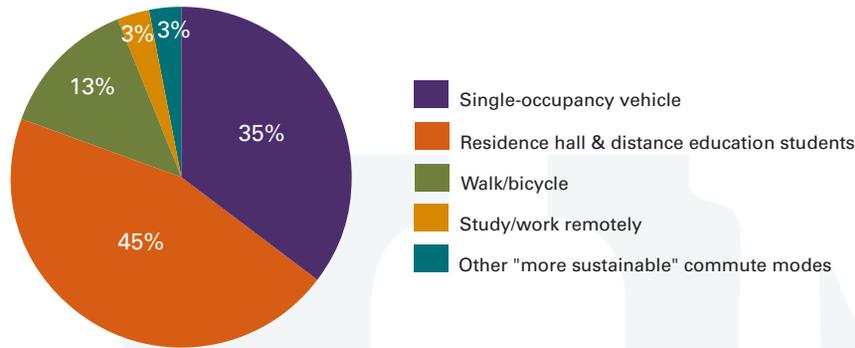
Implement an institution-wide stated preference for purchasers to make non-emergency orders only during two (Tues, Thurs) or three (Mon, Wed, Fri) days of the week. This strategy encourages purchasers to be more deliberate, which reduces wasteful spending and overstocking. Additionally, this strategy allows vendors to minimize packaging and increase delivery efficiency.

MOBILITY

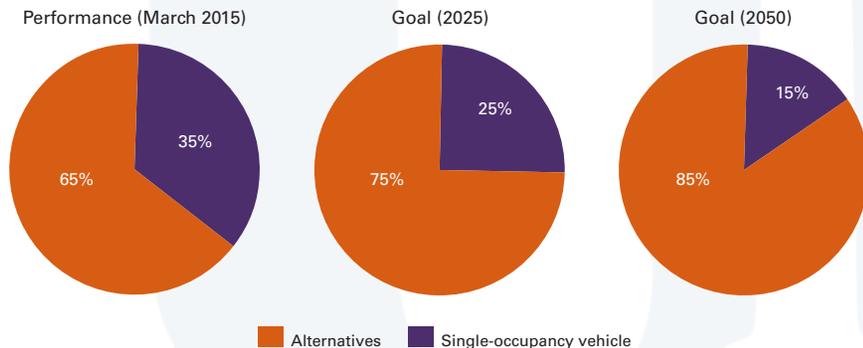
Mobility

Using alternatives to single-occupancy vehicle (SOV) commuting reduces greenhouse gas emissions and local air pollution. Additionally, displacing vehicle commutes with walking/biking promotes student and employee wellness.

UNK Commute Modal Split March 2015



Mobility Performance & Goals Percentage of students and employees that use alternatives to single-occupancy vehicle commuting



To achieve these goals, this plan recommends the following strategies:

Primary Strategies

Develop a sustainable mobility program

Generally, create a sustainable mobility program that provides and/or supports users with a variety of choices for commuting and removes existing barriers to sustainable transportation. Such a program will likely include many of the strategies outlined below.

More detailed analysis is necessary to determine, in part, exactly how the program would be structured, who is eligible, which features it will include, and how it will be administered. Next steps for developing such a program include

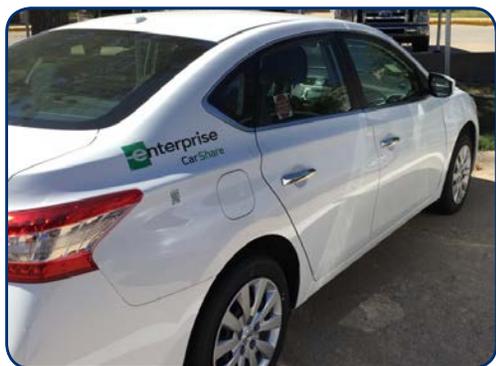
- **Focus Groups.** Conduct focus group sessions to discuss key ideas/features and obtain feedback (findings will guide survey development).
- **Campus-wide Survey.** Conduct a campus-wide survey (students, faculty and staff) to assess
 - Support levels for specific ideas.
 - Likelihood of use/adoption.
 - Barriers to use/adoption.
- **Preliminary Program Design.** Develop preliminary program design, including estimated costs and projected participation rates.
- **Employee/Student Forums and/or Open Houses.** Hold forums or open houses to obtain input on preliminary program features.
- **Adjust Program Design.**
- **Branding.** Establish an appropriate brand to make the program easily recognizable.
- **Develop an Engagement Plan.** Since commuting behavior can be very challenging to change, UNK should employ a more robust approach to engaging participants and soliciting new users.

A well-designed program should include efficient administration, measurable metrics that are regularly tracked and evaluated, and an engagement/

marketing campaign that includes a presence in new student/employee orientation (the most critical time to change people’s travel behavior is when they make big changes in their lives (i.e., start college or start a new job).

Finally, support elements such as daily/hourly flex parking and an emergency ride home program are vital elements of an effective program. They often provide important safety nets for those using sustainable transportation for the first time, and fortunately, they are inexpensive.

Excellent progress on a few components of such a program has already been made (e.g., Enterprise CarShare, Zagster bicycle sharing), but a more cohesive approach will help to ensure long-term success.



Some aspects of a comprehensive sustainable mobility program are already in place, such as Enterprise CarShare and Zagster bicycle sharing.

Walking & Bicycling

Throughout the planning process, many expressed a desire to increase the walkability and bikeability of the campus. The strategies outlined below are focused on creating infrastructure and programs that make walking and biking safe, enjoyable, and the preferred modes.

Improve pedestrian infrastructure

Improve pedestrian infrastructure on and around roadways so that drivers are more aware of how to interact with pedestrians - thus making it more enjoyable and safer for pedestrians. One example is signs that more clearly articulate that motorists are to stop for pedestrian in a crosswalk. The 2013 Campus Landscape Master Plan recommends several other enhancements that will result in a more walkable campus.



Signs such as this help drivers understand that they must stop to allow pedestrians to safely cross the street.

Two main focus areas for improved walkability include user safety and enjoyment. Campus users won’t set out on foot if they don’t feel safe while walking. Incorporating infrastructure that creates a safe environment for walkers is an important first step. Examples include redeveloping parking lots to create a more pedestrian-friendly environment (e.g., where lots 32 and 13 intersect).

Second, creating an enjoyable walking environment makes the experience more interesting and fulfilling. Amenities such as benches, landscaping, trees, and wayfinding enhance the environment for pedestrians. Most of these aspects were included in the 2013 Campus Landscape Master Plan.

Monitor and expand the Zagster bicycle sharing program
Sixty two percent of survey respondents indicated they agree (38%) or strongly agree (24%) that UNK should start a bicycle sharing program (Verdis Group's UNK Sustainability Engagement Survey, March 2015). Thus, UNK launched Zagster in October 2015. Zagster's bicycle sharing stations are located at West Center, Centennial Towers, the Nebraskan Student Union, Calvin T. Ryan Library, and the Wellness Center. UNK should closely monitor the program's effectiveness. If successful, UNK should expand the program to University Village at a later date.

Automobiles

Cars are not the enemy. They serve an important purpose and are not going to disappear anytime soon. But in order to create a more sustainable campus, their use should not be the easy default, especially when they are traditionally fueled and occupied by a single person. The strategies outlined below are intended to reduce single-occupancy vehicle trips to and from campus and to simultaneously relieve parking pressure.

Allow short-term parking at residence halls

Set aside short-term (less than 30 minutes) parking at appropriate residence halls so that students can drop off laundry/groceries and then park their cars in another (perimeter) lot. This will address one of the least desirable and unhealthy aspects of parking further away from residence halls: carrying bulky/heavy loads to/from one's car, especially if doing so requires multiple trips. The students will likely self-police the short-term parking (especially after 5:00 p.m. and on weekends), and residence halls should expect their students to respect one another by obeying the time restrictions.

Allow permit sharing

Explicitly allow and encourage students, faculty, and staff to share a permit and carpool. The way in which permits are sold informally allows for permit holders to share a permit; they are not assigned to a specific vehicle. Most users, however, are not aware of or haven't really considered that they

might be able to share their permit with another individual. Educating and encouraging permit holders to consider sharing a permit should entice users to consider new ways to get to campus. When more than one person with a shared permit needs to park on campus, they can purchase a daily pass.

Pilot a ridesharing social network program

Pilot Zimride or a similar ridesharing social network program. Zimride uses social networks to help riders connect with each other. Within seconds, riders can set up a profile, search for open seats where they want to go, or post a ride of their own. Zimride assists with ongoing outreach and marketing, and provides user ratings, mobile access, and data tracking. Zimride is most ideal for situations in which multiple people independently want to make a trip that is relatively long-distance and/or infrequent. For example, if two students independently wanted to travel to Lincoln for a weekend trip, Zimride would help them connect with each other and share the ride. Zimride would normally charge a university \$12,000 per year for its services, but because of UNK's existing partnership with Enterprise, it would only charge \$9,000 per year.

Monitor and expand the Enterprise CarShare program

Carsharing provides support to commuters who travel to campus without a personal vehicle. UNK's Enterprise CarShare program launched in August 2015. The university should continue to market the program widely, monitor its performance, and expand it if successful.

Communication & Policies

Provide multimodal directions

Have Facilities Management and Planning and all others organizing meetings on campus include multimodal directions in emails to incoming students and visitors who will be traveling to campus for special events (e.g. orientation, graduation, public lectures, etc.).

Campus Design & Land Use

Current designs for University Village call for compact, mixed-use, well-designed spaces, which reduce the need for car trips in addition to the cost of campus maintenance and operation. There are three key principles that, if followed, will guide future development appropriately. They include

- **Principle 1: Foster a Mix of Building Uses to Improve Area Vibrancy.** The 2013 Campus Landscape Master Plan proposes an increase in building types and uses on campus, including parking garages. This diversity of spaces improves access for pedestrians and bicyclists due to an increase in activity and density.
- **Principle 2: Use Building Placement and Streetscape Design to Promote Active Transportation Modes.** Highway 30 is an important edge where community and the campus meet. Planned improvements make this highly visible entrance to campus more pedestrian and bicycle friendly. Careful attention should be paid to this and other adjacent roadways to ensure pedestrian access is safe and enjoyable.
- **Principle 3: Provide High Quality Public Spaces to Encourage Interaction and Innovation.** The 2013 Campus Landscape Master Plan calls for several excellent public spaces such as the Fine Arts Garden and University Green. These create environs where students, faculty, and staff alike can informally gather.

Secondary Strategies

Bicycling

Enhance bicycle parking and storage

Creating ideal bicycle parking and storage requires careful forethought and planning.



Throughout UNK's campus there are several types of bicycle parking options, each of varying quality. Thus, UNK has exciting opportunities to enhance bicycle parking and storage.

Generally speaking, good bicycle parking is secure, stable, visible, protected from weather, and under somewhat regular surveillance. There are currently several different alternatives for bicycle parking and storage on campus that vary greatly in quality. Transitioning to the new bicycle racks and corrals the

2013 Campus Landscape Master Plan specifies will likely spur more biking on campus. Other strategies related to bicycle parking and storage include

- Include secure, covered, indoor bicycle storage in all new residential buildings
- Include bicycle parking in all new parking garages.
- Inventory short-term bicycle parking (e.g. racks and corrals) within 50 feet of all non-residential buildings and long-term bicycle storage within 330 feet of all residence halls.
- Create a space where bicycle storage, shower facilities, and lockers are co-located in at least one building/location that is accessible to all commuters.

Refurbish abandoned bicycles

Bicycles are often abandoned at the conclusion of a semester, yet they are frequently in good enough condition for them to be easily refurbished and reused. Two strategies exist for refurbishing abandoned bicycles.

- Pilot a program (with a longer-term, non-student owner) to refurbish and donate bicycles to students who do not have own a vehicle.
- Give abandoned bicycles to local bicycle shop(s) based on their repairing, selling, and donating a portion of sales back to the university.

Bike Bowl

Leverage the UNK Bike Bowl as an opportunity to provide outreach and education about bicycle transit.

Bicycle Friendly University

Work towards certification as a Bicycle Friendly University (at any level) by the League of American Bicyclists (U.S.) or under a similar third party

certification for non-motorized transportation. Once achieved, include this designation in appropriate marketing and recruitment materials.

Bicycle serial registration

Implement a program where students and employees can register their bicycle serial number with campus police to deter bicycle theft and to streamline the process for recovering stolen bicycles. [UNL has a program that can be replicated.](#)

Communication & Policies

There are several strategies that call for broad communication and/or the establishment and execution of policies in order to drive an increase in sustainable transportation. They include

Incentives

- Provide incentives or programs to encourage employees to live close to campus so that biking and walking to/from campus are more feasible options. Incentives should only be provided if the user agrees not to purchase a long-term parking pass. Daily passes can be used if/when necessary.
- Pilot an incentive program that benefits/rewards staff who use alternatives to single-occupancy vehicle commuting, and/or who park further away in a staff commuter lot.
- Provide financial incentives to incoming students toward the purchase of a bicycle (or cold-weather gear if pedestrians) if they agree not to purchase a parking pass for two years. The amount of the incentive could be calculated based on the cost of providing a parking stall.

Maps

- Change the “Parking Map” to be a “Transportation Map.” Include bicycle rack locations, bicycle lanes, and desirable pedestrian thoroughfares on all campus maps, especially those dedicated to parking/transportation.

- Create and distribute a walking/biking map that indicates route times not just distance (e.g. the proximity map in the University Village flipbook).

Policies

- Adopt policies that allow and encourage working remotely when appropriate and flexible work spaces so as to decrease the square footage required per employee on campus.
- Adopt a Complete Streets policy and incorporate it into design guidelines for all new and re-constructed/re-surfaced streets. Include design guidance for bicycle and pedestrian infrastructure on specific street types. Current plans for University Village call for Complete Street-compatible features.

Miscellaneous

- Increase distance education offerings so as to decrease the number of trips to/from campus by commuter students.
- Create a savings calculator that students/staff can use to determine whether or not it would be financially worthwhile to use sustainable transportation and/or participate in one of the aforementioned programs (e.g., TravelSmart).

Strategy Detail: Mobility between University Village & Main Campus

Once residential units are built and students move in at University Village, there will be a need to provide some support to students going back and forth to/from the main campus. There are a few options worth exploring in greater detail before defaulting to a traditionally-fueled shuttle. Options include (in order of preference)

- **Bicycle Sharing.** Ramp up the bicycle sharing program. Assuming the newly launched bicycle sharing program is going well, expand it to include several stations in University Village.
- **Personal Bicycle Ownership & Infrastructure.** Provide incentives to students to purchase and maintain their own bicycles. Ensure there is adequate infrastructure available to park, store and maintain bicycles.
- **Ride Sharing.** Create an “Uber-” or “Lyft-” like service in which students can quickly and easily find or offer rides from University Village to main campus. Provide designated parking for those willing to rideshare.
- **Shuttles.** If shuttles are chosen, ensure they
 - Incorporate alternative fuel sources. Options include
 - **Biodeisel.** Most traditional diesel engines require only slight modifications in order to run at least partially on biodiesel. A local supplier of biodiesel does not currently exist, so UNK could apply for a small (~\$25,000) grant to set up a lab, have faculty, staff, and students recycle cooking oil from campus/the city, and put the lab’s biodiesel into the shuttles. Such a program would ultimately result in lower costs per gallon and provide meaningful education opportunities for students. The [Rice University Biodiesel Initiative](#) provides an excellent model, and the [Omaha Biofuels Coop](#) is an excellent statewide resource to help guide such efforts.

- **Compressed Natural Gas (CNG).** CNG is currently not a viable option at UNK because there is not a CNG fuel station nearby. When a station comes online, consider transitioning to such a fuel source (assuming current fuel source is unleaded or traditional diesel).
- **Electric.** Several electric-powered shuttles were researched, but none were currently appropriate for a shuttle that runs regularly throughout the day. The primary limitation was the range per charge, which was commonly around 100 (+/- 30) miles. If the shuttle schedule allows for shuttles to run intermittently and be charged often enough, electric shuttles present a more viable option once they are more moderately priced - the second major barrier.
 - Have space for bicycles either inside or on an outdoor rack.
 - Are clean and quiet to help maintain a peaceful campus atmosphere.
- **Autonomous or unmanned vehicles.** These alternatives are not ready for such an application today, but they could be a very worthwhile solution in the future. Operational costs are greatly reduced because drivers are not needed, and they are essentially on a closed, semi-predictable course.

Parking

Provide daily parking spaces

Encourage the use of daily parking spaces for those who only drive to campus occasionally. This strategy should be coupled with other strategies intended to entice campus users not to purchase long-term permits.

Provide parking for zero/partial zero emission vehicles

Set aside premium parking for zero or partial zero emission vehicles.

Campus Design & Land Use

Connect main campus and University Village via the tailrace trail

In addition to the “main street” connection between the main campus and University Village via the realigned University Drive, focus early efforts on an equally desirable walkway that connects the two campuses via the tailrace trail once land is obtained. Work is required with the City of Kearney to make this happen. Pedestrians often prefer/choose the shortest route even if it is not the most welcoming, and for many, the tailrace trail route will be preferred.

Tertiary Strategies

Internal Circulation

Wayfinding

Improve wayfinding on campus for people walking or biking. Include direction, distance, and destination signage and maps.

Communication & Policies

Distribution of instructional space

Currently, instructional space is most heavily used during 10am - 2pm on Tuesdays and Thursdays. As a result, parking demand, congestion, and building operations are higher during these times. The manner in which courses are scheduled does not consider how distribution of instructional space will impact UNK’s sustainability goals. Adding sustainability considerations to course scheduling decisions may be a challenge, thus UNK

should facilitate information sessions to increase awareness of the impact of course scheduling on infrastructure such as parking.

Transportation services

Change the “Parking Services” department to “Transportation Services.” This includes all support websites, maps, communications to be changed as well for a one-stop shop for students, faculty, and staff to explore their transportation options.

Communication regarding parking costs/subsidies

Effectively communicate the value of the parking subsidy (the fact that it costs more to build, manage and maintain a parking stall than permit fees currently cover) being offered by UNK. Facilitate a campus conversation about parking (how much it costs, how decisions are made, health/wellness/sustainability benefits, cost per parking stall, etc.).

Bicycling

Bicycle repair stations

Set up bicycle repair stations for students to use and/or start an on-campus bicycle shop.



UNK should regularly measure and evaluate bicycle parking in order to inform decision-making about improving sustainable mobility.

Bicycle and bicycle rack/corral census

Conduct a bicycle and bicycle rack/corral census each fall, winter, and spring for 3-5 years while rolling out bicycle infrastructure and programming. The census will serve as a feedback mechanism for assessing success and adjusting approach to people biking on campus.

Parking

Carpool parking

Designate reserved carpool parking in prime locations to encourage staff to carpool to campus.

Parking fees

Raise parking fees to better capture UNK's actual costs.

Commuter lots

Create a staff commuter parking lot(s) that is located away from the main buildings. This would encourage staff to walk/bicycle instead of drive while on campus. To the extent possible, most parking should be pushed to the outer sections of campus.



For so many students and employees, crossing Highway 30 (and some parts of University Drive) is often unsafe and unpleasant due to fast-moving traffic and a lack of pedestrian infrastructure.

Roadways around Campus

There are several roadways around campus that deter pedestrian and bicycle access to campus. Highway 30 in particular is extraordinarily dangerous for pedestrian crossings - students are often seen on the 2' median between the eastbound and westbound lanes, nowhere near a dedicated pedestrian

crossing. UNK should work with the City of Kearney and the Nebraska Department of Roads to improve the pedestrian and bicycle facilities on and around these roads.

Route 30 enhancement

Streetscape enhancements at and around the intersection of University Drive and Route 30 are excellent, but opportunities for improvements along Route 30 exist. For example, reducing the lane width to 12 - 12.5' would slow traffic. Planned 14' lane widths are comparable to those found on the interstate system and are too wide around campus. More frequent and more clearly shown pedestrian crossings would also be beneficial.

University Drive enhancement

When working with the City of Kearney to redesign it, advocate for an even narrower roadway. All recommendations in the 2013 Campus Landscape Master Plan are sound (narrowing the roadway, adding a multi-use trail along one side, enhancing key pedestrian crossings with signs and colorful pavement, and lining the drive with street trees). With respect to the roadway narrowing, the 2013 Campus Landscape Master Plan calls for 40' to include three lanes (one eastbound, one westbound, one two-way turning lane). Such an arrangement allows for 13' wide lanes, which is unnecessarily wide for such a street.

University Village roadways

Consider decreasing the width of roadways to 10.5 - 11" travel lanes. 12' lanes are unnecessarily wide, especially in many of the secondary streets within the network.

Support Program

Emergency ride home

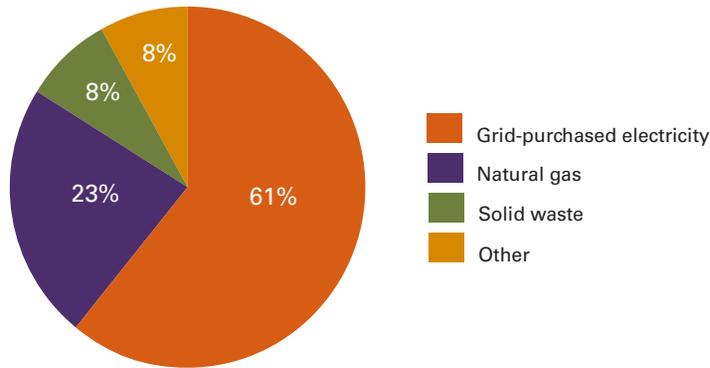
Implement an emergency ride home program for sustainable commuters when there is an emergency and they need to get home quickly. Participants could obtain a free/inexpensive cab ride home if their carpool drivers are unavailable or if their bicycles were stolen/damaged.

EMISSIONS

Emissions

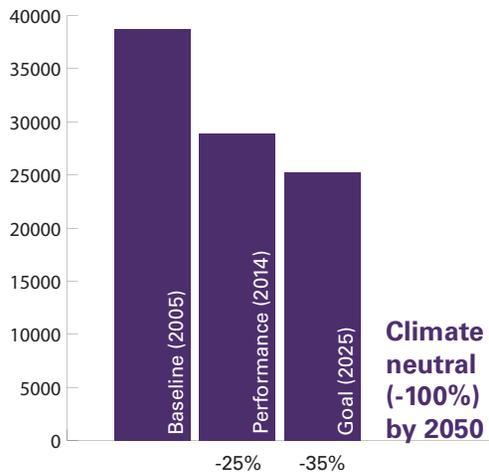
Most of the strategies in the other topic area sections are also emissions-reducing strategies that will lead UNK towards climate neutrality. The strategies we describe below, however, are the ones that are less directly related to other UNK sustainability goals.

Emissions Profile (2014)



Emissions Performance & Goals

Tons of eCO₂



To achieve these goals, this plan recommends the following strategies:

Sign the ACUPCC

The chancellor should institutionally commit UNK to climate neutrality by signing the American College and University Presidents' Climate Commitment. As of October 2015, three of UNK's peer institutions have signed, and over 650 institutions have signed nationally. This is also a great opportunity to increase awareness of UNK's sustainability and climate neutrality efforts: sadly, less than 11% of survey respondents knew "a fair amount" or "a lot" about UNK's efforts to reduce emissions (Verdis Group's UNK Sustainability Engagement Survey, March 2015).

Transition to a sustainably fueled vehicle fleet

Within the next 20 years, achieve a facilities vehicle fleet that is 100% sustainably fueled.

Encourage limitations on gas-powered lawn equipment

Implement a policy or guidelines that limit the use of gas-powered lawn care equipment, especially during poor air quality days. Alternatives to gasoline include propane, compressed natural gas, electric, biofuels, and manual tools.

Purchase Renewable Energy Certificates

Offset carbon by purchasing Renewable Energy Certificates that are either Green-e Energy certified or meet Green-e Energy's technical requirements and are verified as such by a third party.

Manage land for carbon sequestration

Offset carbon by identifying campus land to be managed specifically for carbon sequestration and document as such in policies, land management plans, or the equivalent.

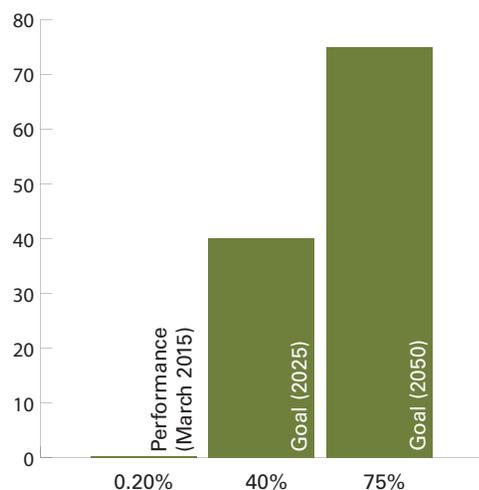
ACADEMICS

Academics

UNK’s primary mission is to educate and prepare future leaders, scholars, workers, and professionals. Today and in the coming decades, UNK has the opportunity and obligation to prepare its students to understand and address sustainability challenges. One way to do this is by establishing and expanding sustainability curricula.

Academics Performance & Goals

Percentage of all courses that focus on or include sustainability



To achieve these goals, this plan recommends the following strategies:

Primary Strategies

Pilot a sustainability learning community for faculty

Pilot a faculty learning community in which interested faculty from any discipline occasionally meet and/or have (e)discussions about (1) incorporating sustainability into their existing courses and (2) developing new sustainability courses and/or courses that include sustainability.

Institutionalize a sustainability course requirement

Develop a sustainability course requirement for the curricula of all undergraduate degree programs. Additionally, or alternatively, develop sustainability learning outcomes for all undergraduate degree programs and courses of study. Sustainability learning outcomes are statements that outline the specific sustainability knowledge and skills that a student is expected to gain and demonstrate by the successful completion of the degree program or course of study.

Improve the methodology used to inventory sustainability courses

Few faculty participated in the spring 2015 attempt to inventory UNK’s sustainability courses, which UNK references as the baseline performance measure in this plan. Develop a more strategic methodology for more accurately measuring the percentage of all courses that are sustainability courses and/or courses that include sustainability. The AASHE STARS v2.0 Technical Manual provides detailed guidance.

Incentivize faculty to expand sustainability course offerings

Offer incentives to motivate faculty to develop sustainability courses and incorporate sustainability into existing courses. Incentives could include release time, professional development funding, trainings, etc.

Explore the possibility of developing a sustainability degree program

Investigate starting a formal, undergraduate degree program focused on sustainability. This program provides a path for students to study sustainability topics in depth and provides a home for sustainability scholars within the institution.

Related Strategies

Incentivize and recognize sustainability research

Pilot programs that incentivize student and faculty sustainability research through fellowships, financial support, mentorships, faculty development workshops, etc. Additionally, recognize outstanding student and faculty sustainability research, e.g. with annual award.

Inventory sustainability research

Conduct an inventory of faculty/staff sustainability research and make the inventory publicly available.

Expand sustainability immersive experience programs

Explore the possibility of developing or expanding sustainability-focused immersive experience programs, such as community-based internships and study abroad programs.

Utilize campus as a living lab

Encourage faculty and staff to utilize UNK's infrastructure and operations as living environments for multidisciplinary learning, applied research, and practical work that advances sustainability on campus.



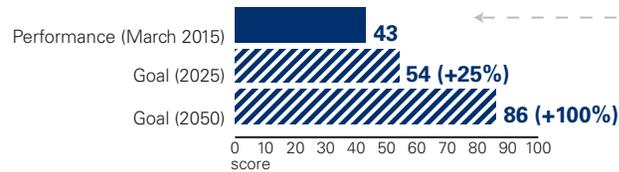
CAMPUS CULTURE & ENGAGEMENT

Campus Culture & Engagement

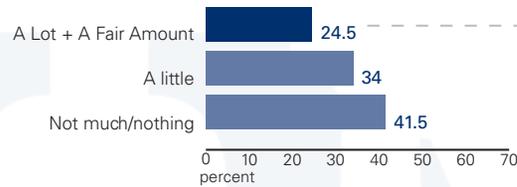
Campus Culture & Engagement Performance & Goals Sustainability Engagement Score

UNK Sustainability Engagement Score

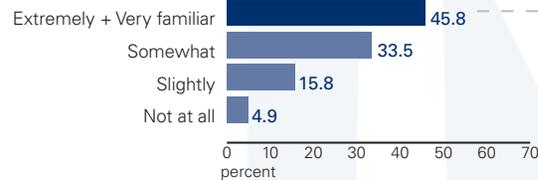
Sustainability Engagement Score:
Average of desired responses
for awareness, familiarity
knowledge, and behavior



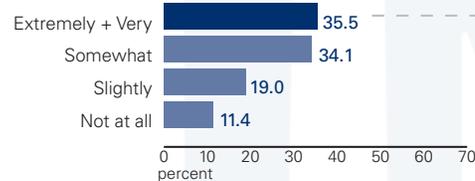
Awareness:
How much do you know about
UNK's sustainability efforts?



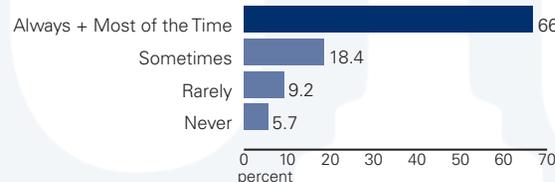
General Familiarity:
How familiar are you with the
term/concept sustainability?



Knowledge:
How knowledgeable do
you consider yourself about
the various ways you can help
UNK be more sustainable?



Self-Reported Behavior:
How often do you personally
participate in sustainable actions
when you are on campus?



■ Baseline
▨ Goal

UNK has a tremendous opportunity (and responsibility) to provide its students with sustainability learning experiences outside its formal curricula, thus enabling the students to deepen and apply their understandings of sustainability principles. Combined with efforts to engage employees in sustainability activities and behaviors, these experiences help to impact UNK's sustainability performance and integrate sustainability into the the campus culture.

UNK's sustainability engagement score is derived from Verdis Group's UNK Sustainability Engagement Survey (March 2015), deployed as part of this sustainability master planning process.

As an additional campus culture and engagement goal, UNK hopes to achieve 100% of available points for the STARS Campus Engagement subcategory by 2025:

STARS 2.0 Credits	
Campus Engagement subcategory	Points available (20)
Student Educators Program	4
Student Orientation	2
Student Life	2
Outreach Materials & Publications	2
Outreach Campaign	4
Employee Educators Program	3
Employee Orientation	1
Staff Professional Development	2

To achieve these goals, this plan recommends the following strategies:

Primary Strategies

Engage students through part-time sustainability employment

Some departments may be able to create sustainability-focused student employment opportunities. For example, Facilities Management and Planning often has leftover work study funding. Other departments where these opportunities may be most appropriate include Residence Life, Student Life, Communications and Community Relations, and Business Services.

Incorporate a sustainability video into New Student Enrollment (NSE)

Develop a creative video or interactive session about sustainability at UNK. Ideally, the video or session would become part of NSE, but a secondary option could be to incorporate the video, session, or equivalent into an aspect(s) of Student Affairs' First Year Program.

Leverage Blue and Gold Welcome Week (BGWW) to instill a culture of sustainability

BGWW is perhaps the best time to set a sustainable tone for the university. Anecdotally, however, BGWW is currently non-green in many ways. First, the UNK community must work together to make BGWW more sustainable. Then, UNK should leverage BGWW as a tremendous opportunity to provide marketing, outreach, and education about sustainability at UNK.

Develop a residence hall guide for green living

Develop a guide for green living and incorporating sustainability into the residence hall experience. UNK could consider developing a similar resource for students living in apartments and homes off campus, too.

Develop and implement a student sustainability literacy assessment

Explore the possibility of developing and implementing an assessment and follow-up assessment(s) to measure students' knowledge of sustainability topics; it may also address values, behaviors, and/or beliefs.

Display an online sustainability dashboard

To engage the UNK community and the public, display a dashboard widget on the sustainability webpage that highlights UNK's sustainability goals and progress toward achieving them. Keeping the dashboard current with progress updates will be key to effective engagement. Verdis Group is offering use of its dashboard widget for three years following rollout of this plan.

Pilot a sustainability outreach campaign

Pilot one or several sustainability-related outreach campaigns directed at students and/or employees that yields measurable, positive results in advancing sustainability. The campaign can take the form of a competition (e.g., a residence hall conservation competition), a rating or certification program (e.g., a green office program), and/or a collective challenge (e.g., a campus-wide drive to achieve a specific sustainability target).

Encourage and utilize sustainability feedback

Ensure means and opportunities exist for students and employees to submit sustainability-related suggestions and ideas. Pass those suggestions and ideas along to appropriate stakeholders. Some departments/offices may wish to solicit sustainability feedback locally. For example, Residence Life and the Residence Hall Association may be able to implement this strategy using their webpage.

Emphasize sustainability during new employee training

Provide information, resources, and tools regarding sustainability during new employee orientation and training.

Pilot a sustainability ambassador program

Pilot a program in which an employee from each building or department/office who is passionate about sustainability serves as his or her unit's sustainability ambassador. These individuals could meet regularly to share their units' sustainability progress and successes, discuss challenges, and roll out new initiatives. Coordinators of this program would need to synchronize its efforts with those of the UNK Sustainability Committee.

Pilot a sustainability cultural art event, installation, or performance

Student Life or Residence Life should pilot a sustainability cultural art event, installation, or performance that has students as the intended audience. Funding for this type of program may already exist, e.g., through the Residence Hall Association and/or Loper Nite.

Establish a sustainability student group

Though UNK has over 200 student groups already, none have an explicit and primary mission to advance campus sustainability. Additionally, none have the explicit and primary intent to include any student regardless of field of study, living quarters, etc. Thus, Student Life and other partners should orchestrate an effort to establish a new sustainability-focused student group that also collaborates and coordinates with existing groups' sustainability

efforts. The student group should report to and have representation on the UNK Sustainability Committee.

Improve sustainability web and social media presence

Currently, UNK lacks the human resources to give appropriate attention to managing its sustainability webpage and social media. Having a sustainability web and social media presence is important for communicating and engaging with the UNK community and the public. UNK should identify someone(s) to take ownership of this effort; even a student intern could be quite helpful.

Secondary Strategies

Pilot a real-time energy dashboard

Pilot a digital, real-time energy dashboard in a high-visibility campus building location, e.g. near the main entrance of the Nebraskan Student Union. Sustainability resources and information should accompany the digital dashboard.

Pilot an employee peer-to-peer sustainability outreach/education program

Pilot a program in which faculty and staff educate and mobilize their peers around sustainability initiatives and programs. In the program, employee educators are formally designated and receive formal training or participate in a UNK-sponsored orientation, and UNK offers financial or other support to the program. This sort of program would require quite a bit of organization, and could potentially be paired with the "sustainability ambassadors" program described in the Primary Strategies above.

Encourage instructors to talk with their students about sustainability

Instructors should advance UNK's sustainability culture by leading by example. For instance, instructors could share what they are doing to make their courses and classrooms more sustainable, e.g. making syllabi available online instead of printing, utilizing sunlight instead of artificial lighting, etc. The instructors could include a few sentences about their sustainability efforts on their course syllabi and/or course/faculty webpages.

Pilot a residence hall peer-to-peer sustainability outreach/education program
In one or some of the residence halls, try developing and implementing a program (sometimes known as “Eco-Reps”) that engages students to serve as educators in peer-to-peer sustainability outreach.

Establish formal sustainability awards
Create a formal award granted on an annual basis to a student and employee that demonstrate exceptional leadership with regard to helping UNK reach its sustainability goals.

Feature sustainability regularly in *The Antelope*
Ask The Antelope to regularly feature coverage of sustainability through a dedicated column or a reporter assigned to the sustainability beat.

Install sustainability signage throughout the grounds
Reference the 2013 Campus Landscape Master Plan and partner with appropriate stakeholders to install signage on the grounds that highlights sustainable groundskeeping and/or landscape strategies.

Tertiary Strategies

Sustainability conference
Pilot a sustainability conference, speaker series, or symposia that has students as the intended audience.

Professional development
At least once per year, offer sustainability training and/or other professional development opportunities to all staff.

Employee sustainability pledge
Encourage employees to participate in an online sustainability pledge tool that motivates and recognizes sustainable behaviors.

Pilot a campus garden
Pilot a campus garden and/or urban agriculture project in which students can participate in organic agriculture and sustainable food systems.

Sustainability graduation pledge
Create a graduation pledge in which students pledge to consider social and environmental responsibility in future job and other decisions.

Student sustainability research
Publish, disseminate, and market student sustainability research.

Sustainability brand
The existing UNK sustainability logo is merely the recycling symbol with “UNK Sustainability” written inside. To make sustainability communications most effective, and to connect students/employees with UNK’s broad array of sustainability efforts, stakeholders should collaborate to develop a new and improved UNK Sustainability brand.

Sustainability e-newsletter
Identify an appropriate group (e.g., the UNK Sustainability Committee) to generate content for a monthly or quarterly sustainability e-newsletter. Make the newsletter available on the sustainability webpage and consider emailing it to all (or a voluntary list of) students and employees. Alternatively, or perhaps preferably, include the sustainability content in existing newsletter-type communications.

Biodiversity
Develop on-campus stimulating outdoor natural spaces rich in biodiversity for educational and recreational use.

Mobile app

Consider finding ways to advance sustainability through the UNK mobile app (e.g., a sustainability tab, information about recycling and mobility, tips for green living, upcoming sustainability events, etc.).

New construction and major renovation

Communicate a summary of the sustainability features included in new construction and major renovation projects.



OTHER TOPICS

Other Topics

The following strategies are not directly related to a specific UNK sustainability goal category, but are nevertheless relevant to helping UNK achieve its sustainability aspirations.

Public Engagement

Establish formal partnerships with the local community

Establish one or more formal partnerships with the local community, including school districts, government agencies, non-profit organizations, businesses, and/or other entities, to work together to advance sustainability within the community.

Advocate for sustainability public policy

Institutionally advocate for local, state, and/or national public policies that support campus sustainability or otherwise advance sustainability.

Collaborate with other institutions

Pilot collaborative programs or practices with other colleges and universities (including UNO, UNMC, and UNL) to advance campus sustainability.

Join the Fair Labor Association and/or the Worker Rights Consortium

Join the Fair Labor Association and/or the Worker Rights Consortium to help ensure that UNK apparel is produced under fair conditions.

Establish community stakeholder policies for campus development efforts

Establish policies and procedures that ensure community stakeholder engagement is applied systematically and regularly across UNK's planning and development efforts, capital investment projects, and/or other activities and decisions that affect the broader community. Also establish practices to identify and engage relevant community stakeholders, including vulnerable and underrepresented groups.

Measure community service

Establish a methodology for measuring the percentage of students who participate in community service and the average hours contributed per full-time student per year.

Wellness

Measure and potentially reduce animal food products

Dining Services should measure the percentage of food purchases that are conventionally produced animal products, i.e. products that contain meat, fish, egg, or dairy ingredients that have not been verified to be sustainably produced. If the percentage is above 30%, Dining Services should phase-in a purchasing plan to reduce the percentage to below 30% within the next year.

Become a tobacco-free campus

According to the Tobacco Free College Campus Initiative, 1,577 campuses are smoke-free and 1,077 are fully tobacco-free as of July 2015 (including University of Nebraska Medical Center and Creighton University). UNK should follow suit in order to promote student and employee wellness, improve air quality, and reduce litter.

Grounds

Install graphics on stormwater drains

Label all stormwater drains with a visually-appealing, weatherproof graphic that communicates the drain drains into a local stream.

Become a Tree Campus USA institution

Grounds Services and other partners should complete the standards required to become a Tree Campus USA institution: establish a Campus Tree Advisory Committee, develop a Campus Tree Care Plan, allocate finances for a campus tree program, observe Arbor Day, and develop a service learning project. The latter two items on that list provide opportunities to engage students and other stakeholders in tree stewardship.

Identify vulnerable species and habitats

Conduct an assessment to identify endangered and vulnerable species (including migratory species) within habitats on UNK-owned or -managed land and/or environmentally sensitive areas.

Create an Emerald Ash Borer plan

Develop a plan to prepare for responding to the arrival of the Emerald Ash Borer.

APPENDIX

Appendix

Peer Analysis, October 2015

Peer Institution	Peer Class	ACUPCC; Climate Neutrality Goal	AASHE STARS Rating	Coordination
Minnesota State U - Moorhead	*BoR-est.	---	Silver Jan 2014	Office of Campus Sustainability (2.5 FTE) Sustainability Coordinator Sustainable Campus Initiative
U of Wisconsin - Stevens Point	BoR-est.	Yes 2050	Gold June 2015	Office of Sustainability (1.5 FTE) Sustainability Coordinator Sustainable Communities Advisory Committee
U of N Iowa	BoR-est.	---	Gold March 2013	Office of Sustainability (1.25 FTE) University Sustainability Coordinator Sustainability Council Sustainability Action Committee
U of Central Missouri	BoR-est.	Yes 2050	---	Office of Sustainability Sustainability Coordinator
W Illinois U	BoR-est.	---	---	Sustainability Coordinator Environmental Sustainability Committee
U of N Colorado	BoR-est.	---	---	Sustainability Council
N Michigan U	BoR-est.	---	---	Assistant Director of Facilities Building Services & Sustainability
Murray State U - KY	BoR-est.	---	---	---
Sam Houston State U	BoR-est.	---	---	---
U of Central Arkansas	BoR-est.	---	---	---
U of Nebraska at Omaha	system	---	Bronze May 2014	Sustainability Committee
U of Nebraska at Lincoln	system	---	Bronze Jan 2014	Office of Sustainability Sustainability Coordinator Chancellor's Sustainability Commission
U of Nebraska Medical Center	system	---	---	Sustainability Manager Executive Sustainability Council LiveGreen Committee

Peer Institution	Peer Class	ACUPCC; Climate Neutrality Goal	AASHE STARS Rating	Coordination
Creighton U	local	Yes 2050	---	Sustainability Manager Sustainability Council
Emporia State U	MIAA	---	---	---
Fort Hays State U	MIAA	---	---	Sustainability Coordinator
Missouri W State U	MIAA	---	---	---
NW Missouri State U	MIAA	---	---	Sustainability Office Sustainability Coordinator
Washburn U	MIAA	---	---	Energy/Sustainability Manager

* Board of Regents -established

Peer Case Studies

As part of this plan, three UNK students researched aspects of sustainability at UNK’s peer institutions. Here are summary reports of their findings:

Sustainable Energy at University of Wisconsin – Stevens Point

Written by Abbey Rhodes, UNK student

UWSP has a comprehensive sustainability program and a commitment to a greener world. Since beginning its first campus recycling program in 1989, UWSP has recognized that energy consumption is the leading source of greenhouse gas emissions on campus. UWSP practices energy conservation and efficiency efforts, has switched to clean energy sources, and has offset measures such as green electricity purchases, composting, and managed forests. UWSP measures greenhouse gas emissions in six sectors: purchased electricity, stationary on-campus emissions from heating and cooling, transportation, emissions from agriculture and fertilizer application, decomposition of landfilled waste, and those associated with the loss of refrigerants on campus.

UWSP gladly took part in sustainability efforts and continues to strive for carbon neutrality. It has upgraded lighting fixtures to LEDs in residence halls, seating areas, the marquee of the Health Enhancement Center, all vending machines, and in two of its parking lots. Next, UWSP switched all of its vehicles, including the mail carrier, to electric vehicles owned by Facility Services. Then, UWSP implemented a solar thermal hot water system to heat its showers and faucets in five residence halls, including an 18-window photovoltaic panel on the fine arts hall. UWSP generates electricity from a blend of wind, solar, and biomass. All of these initiatives and more have led to financial savings and prevented emissions from harming the environment.

The students at UWSP have also started a green fund through the student government. For \$12 per year per student, students may submit bids for various brick and mortar sustainability upgrades on campus. From installing new windows, to LED lighting at concerts, and even a new roof for the

science building, students are pioneering sustainability efforts on campus paid for by themselves. This creates a culture of sustainability, thus a mindful culture for a changing world.

Recyclemania at University of Central Arkansas

Written by Samantha Duennerman, UNK student

UCA has been participating in Recyclemania for three years. Recyclemania is a recycling competition among colleges that encourages students to become more active in the recycling efforts on their campus. The competition takes place during an eight week period with the goal to reduce waste at the participating colleges.

Participation in Recyclemania involves a lot of organization and communication to meet sign up deadlines and meet all qualifications. The participation at UCA in this program was started and maintained purely by student interest and support. Students brought the idea to the college’s physical plant and asked if it was something in which they could participate. After getting participation approval, emails were sent to other students to encourage participation.

Kevin Carter, the Recycling and Custodial Services Manager, believes that, by getting student housing involved in the program by encouraging local competition among residence halls, UCA will boost the amount of materials recycled on campus.

He thoroughly believes that without participating in the Recyclemania program, UCA’s recycling levels would not be as high as they are now.

Participating in Recyclemania has not only improved campus recycling, but it has also opened doors for grant opportunities. Many companies, such as Coca-Cola, are willing to support colleges that are trying to improve their recycling efforts and will provide grants to aid the process.

Sustainability Academics at University of Northern Iowa

Written by Anna Wagemann, UNK student

At the UNI, sustainability stands at the forefront of its mission in and out of the classroom. In application to academics, the classroom focuses on three fundamental areas: environment, social/health, and economics. Upon further analysis of UNI's curricula, 97 courses out of a total 2,277 (4.26%) are explicitly sustainability focused. Many science courses dominate the list (heavily emphasized in Biology with 14 courses and Geography with 12), however, each department has representation. For example, (TECH 6262) Sustainable/Green Building Construction, (SW 6230) Injustice and Oppression, and (RELS 3520/5520) Environmental Ethics. All students have ample access and opportunity to explore sustainability regardless of their discipline of study.

Examining the sustainability-related courses, 305 out of the 2,277 (13.4%) courses qualify. The options merely expand covering increasingly diverse subject areas such as (LITED 3121) Advanced Children's Literature, (COUN 6256) Multicultural Counseling, and (LYHS 2770) Principles of Tourism.

35 out of 40 departments offer sustainability courses; 87% of the student body has access to sustainability knowledge resulting in 2,175 out of 2,725 students fulfilling sustainability learning outcomes. The capstone course, "designed to prepare UNI students for the complex world of ideas that they will experience during their lives as educated citizens," provides an opportunity for all students to both earn credit for their individualized degree path while simultaneously learning sustainability concepts. The versatility and wide variety of UNI's sustainability curricula allows every student to learn about our planet and humanity's effect on the environment.

This versatility and willingness of all departments of the university to incorporate sustainability subject matter within the classroom is the key to success. To achieve a sustainability literate campus, more than a single

department or group of professors must take conscious action. A lesson, a chapter, or a discussion; minute incorporations build off one another, forging connections. UNK's faculty has to commit to the protection and preservation of our planet, wholeheartedly and without further delay. The call to action is now.

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