



RESILIENCE

STRATEGIES TO ADAPT AND PREPARE



As we pursue initiatives to address the consequences of climate change, it is critical to augment our mitigation strategies with innovative resilience measures. These include adaptive actions to strengthen our campus and community against severe weather, extreme temperatures, and other acute effects of atmospheric and climate change.

Newly formed in 2019, the Resilience SWATeam is preceded by years of groundwork laid by local stakeholders affiliated with the University of Illinois, Urbana, and Champaign. In February 2016, Interim Chancellor Barbara Wilson signed the Second Nature Climate Resilience Commitment, which calls for concrete, actionable resilience strategies to be deployed. This agreement supplemented the 2008 Carbon Commitment. Together, the two documents form the comprehensive Climate Leadership

Commitments. The Climate Resilience Commitment states:

“We have begun to experience the effects of climate change in our communities and we understand that these effects are projected to become more severe and damaging. We recognize that mitigation and adaptation are complementary strategies for reducing the likelihood of unmanageable change, managing the risks, and taking advantage of new opportunities created by our changing climate.”

This agreement spurred the formation of the Champaign County Climate Resilience Task Force (CCCRTF), which includes Illinois experts and representatives from local organizations. Following an in-depth climate resiliency assessment in 2018, the CCCRTF identified three primary goals. One of these entailed signing the Joint Resilience Proclamation in October 2018. This document, cosigned by Chancellor Robert J. Jones and the mayors of Urbana and Champaign at iSEE’s annual Congress, resulted in the formation of the Resilience SWATeam as it operates today.

Resilience measures undertaken from 2015 to 2019 include:

- » The Resilience Commitment was initiated as an iCAP Working Group (iWG) recommendation in 2015. The iWG recommended the Commitment in the following terms:

“We recommend that the Chancellor sign Second Nature’s Climate Commitment, which adds a Resilience Commitment (addressing climate adaptation) to our existing Carbon Commitment (focused on carbon neutrality). This commitment would involve partnering with the local communities to perform a resilience assessment, developing resilience indicators that are appropriate for our campus, and incorporating resilience targets into the iCAP. Additionally, should the campus choose to sign by January 4, 2016, we would be recognized

as a Charter Signatory.”

- » In April 2017, a Joint Task-Force for Resiliency launched to discuss methods and resources for evaluating local vulnerabilities to climate change. Their assessment¹⁴³ was completed in January 2018 and submitted to Second Nature as a key milestone toward our Resilience Commitment.
- » In October 2018, Chancellor Jones, Mayor Diane Marlin (City of Urbana), and Mayor Deborah Frank Feinen (City of Champaign) signed a proclamation affirming their “joint commitment to bolstering our community’s resilience to the impacts of climate change.”
- » In August 2019, the Resilience SWATeam was formed.
- » In fall 2019, the City of Urbana experienced a tornado which caused considerable tree damage. The university helped Urbana clean up upon their request.
- » In spring 2020, the community worked together in an impressive show of local resilience to slow the spread of COVID-19 and support our most vulnerable residents. For example, University of Illinois System UI Ride shuttles provided free, public Wi-Fi hotspots at 10 locations.

As a twin-cities campus, one of the university’s greatest assets is its proximity to strong

¹⁴³ <https://bit.ly/3fhikPP>

communities. Our history of climate resilience proves that time and again, we benefit from mutual support; this has also been true as each community has taken proactive measures to increase resilience to COVID-19. Though Champaign, Urbana, Savoy, and the university are independent entities, we are all immeasurably stronger when functioning as a unit. Our resilience strategies will prove stronger as well; for example, strategies to improve air quality and encourage pollinator-supportive plantings will be exponentially more beneficial should we leverage our combined resources.

The following objectives discuss our desire to include university representatives, government agencies, and key community stakeholders in our implementation strategies. However, we feel passionately that local residents are the heart of their communities, and we are taking steps to cultivate involvement and facilitate opportunities for residents to engage in environmental discussions. One step

in this direction is to promote local sustainability programs with the Champaign County Sustainability Network (CCNet). Additional engagement strategies may include launching more citizen monitoring initiatives to collect vital data and identify problem areas; educating residents on how their individual practices impact the community through best practices training; and continuing to pursue decentralized energy production (e.g., retrofitting private residences for climate resilience, installing solar and geothermal energy systems, etc.).

As we look to our campus's future in 2050 and beyond, the Resilience SWATeam's efforts are a critical complement to the mitigation portfolio outlined in this document.

As we look to the future of our campus in 2050 and beyond, the efforts of the Resilience SWATeam will serve as a critical complement to the mitigation portfolio outlined in this document.

“The university has the opportunity to be a model for the local community, and other institutions across the world.”
— Mallory Mahen '22



Cutting low-mow zones intermittently preserves native perennial biodiversity and minimizes invasive species. The university currently has 81.8 acres of low-mow land.

- 8.1 Urban Biodiversity Master Plan
- 8.2 Coordinated Rainwater Management
- 8.3 Environmental Justice Plan
- 8.4 Local Sustainability Issues
- 8.5 Inventory Green Jobs
- 8.6 Vision Zero
- 8.7 Local Offsets Program

Resilience Objectives

The following Resilience objectives were developed by the SWATeams, iCAP Working Group, campus community, and Sustainability Council to guide the university's actions toward building local climate resilience.



Though Champaign, Urbana, Savoy, and the university are independent entities, we are all stronger when functioning as a unit.

8.1 [Extension w/F&S] Develop a coordinated urban biodiversity master plan by FY24 to make the Champaign, Urbana, Savoy, and campus metro area a model for biodiversity.

Maintaining biological diversity in our plants, animals, and ecosystems is one of the most impactful first steps we can take toward strengthening our communities' overall resilience. Integrating native plants and greenspaces into local urban areas is central to our biodiversity master plan. These efforts include:

- » Leveraging tree canopies and other vegetation to manage stormwater, improve air quality, reduce atmospheric CO₂, and curb the heat island effect often experienced in built communities.
- » Planting species that are likely to adapt well to projected climate changes.
- » Installing native plantings to support pollinator, insect predator, and bird habitats.

In addition to supporting native plants, pollinators, and land and water health, our biodiversity plan supports human health and well-being; for example, minimizing illnesses associated with ticks and mosquitos and reducing the adverse environmental impacts of homeowner landscape and lawn maintenance practices. Urban greenspace and landscape beautification are also proven to reduce levels of anxiety and stress.

In keeping with our Engagement objectives, we want to encourage community members to

become involved with and excited about these biodiversity strategies. Community gardens and food forests (to be included in the master plan) will provide opportunities for residents to engage with the ways biodiversity impacts everything from the ground beneath their feet to the food on their table.

As we implement the above practices, we will develop corresponding monitoring programs to assess effectiveness, making the metro area a "test bed" for informative, innovative biodiversity planning. With this information, we will draft model ordinances to use in our metro area and to share with other communities.

8.2 [F&S w/Extension] Coordinate rainwater management plans for the entire urbanized areas of Champaign, Urbana, Savoy, and the university. Starting in FY21, share the total number of green infrastructure locations on the iCAP Portal on an annual basis.

To complement the comprehensive approach outlined in Objective #8.1, we hope to implement a similar coordinated rainwater management plan for the three urbanized areas surrounding campus. The Champaign County Storm Water Working Group holds a quarterly meeting with representatives from the university and the urbanized areas of the City of Champaign, the City of Urbana, and the Village of Savoy. F&S and U of I Extension will collaborate with this Working Group to coordinate a community-wide rainwater management strategy.

In addition to traditional stormwater sewers and the green infrastructure opportunities described in the Land & Water chapter, other innovative solutions will be explored to complete this objective. One example is a Regenerative Stormwater Conveyance,¹⁴⁴ also known as step-pool conveyance systems, which involves building up a degraded stream (e.g. with sand, mulch, boulders, and trees) to ultimately create pools through which water can flow. This filters the water, reestablishes the original habitat, and results in a beautiful community asset and value-add for neighborhood homes.

Effective rainwater management is crucial to combating urban vulnerabilities to climate change. A specific concern for this region is the projected increased frequency of droughts. In response, our coordinated rainwater management plan will include a drought management plan, considering plant selection options and rainwater harvesting techniques.

8.3 [iSEE] Develop a collaborative plan for environmental justice that will assess metro area resilience and actively address related issues. The plan should be written and publicized by FY24.

Many strategies implemented in pursuit of our coordinated biodiversity, rainwater, and drought management plans will positively impact local communities. For example, there is a proven correlation between increased urban greenspace and mental health benefits. Moreover, sustainability is holistic, demanding attention to the

societal and economic components of a community as well as the purely environmental. It is our goal to address this full triad head-on.

Objective #8.3 focuses on the human component of climate resilience, with an emphasis on communities that have been historically marginalized and underserved, and are therefore disproportionately vulnerable to the impacts of climate change, heat waves, air pollution, and public health crises such as the COVID-19 pandemic.

To develop a thoughtful and comprehensive environmental justice plan, we must identify existing programs within our local communities (which currently operate independently) to recognize common principles and points of contingency. We aim to collaborate with other entities across campus to do so, potentially including the Humanities Research Institute (HRI), the School of Social Work (SSW), and the Office of the Vice Chancellor for Diversity, Equity & Inclusion (OVCDEI).

Following this initial step, students and faculty members will conduct environmental vulnerability assessments of campus and local populations, identifying the communities that are most at risk and assessing opportunities to provide valuable, sustainable solutions.

Finally, we will take the necessary steps to implement economically and environmentally feasible solutions in vulnerable communities, focusing particularly on resources to improve food security (e.g., shuttle systems to grocery stores, food trucks, and community gardens). We will also identify locations where cooling centers are needed for residents, and seek

¹⁴⁴ <https://bit.ly/3k6lDxo>



In spring 2020, University of Illinois System UI Ride shuttles provided free, public Wi-Fi hotspots to Champaign and Urbana residents in need of internet access.

opportunities to incorporate educational components wherever possible.

8.4 [iSEE] Take leadership in addressing the most pressing sustainability challenges in our local communities through collaboration with local governments and related community groups, by forming an advisory panel for coordinating efforts across jurisdictional boundaries. By FY24, select at least three major local sustainability issues to address and identify lead agency and key stakeholders.

As we conduct inventories and form strategies to address sustainability and environmental justice challenges in our local communities, we want to ensure that the issues we seek to

address are treated with integrity.

Above all else, we seek depth and durability in the solutions we implement. We are not aiming for quick fixes, but for long-term environmental and economic sustainability. By pouring our time, effort, and resources into several key issues and collaborating with local stakeholders on the finer points of each, we can ensure that they will be completed to the best of our ability. A particular issue that merits consideration is the 5th and Hill Neighborhood Rights Campaign, centered just two blocks north of University Avenue.

After identifying key issues to focus on, we will take steps to ensure that our solutions are born out of collaboration and supported at the highest possible level. This will involve forming relationships with key stakeholders from the university, Champaign, Urbana, and Savoy.

The Resilience SWATeam will function as an advisory panel for the coordination of projects between the four cooperating entities.

8.5 [iSEE] By FY23, collaborate with colleges and community groups to inventory existing certification opportunities for green jobs and identify gaps.

While we strive for volunteer engagement, integrating sustainability with the job market is a strong foundational step to ensure lasting resilience in any community.

Over the next three years, we will identify existing opportunities to green-certify jobs in the Champaign, Urbana, and Savoy communities, with an emphasis on employing and certifying at-risk youth and adults in resilience roles (e.g., green or renewable energy design and maintenance, food security programs, and other expanding job markets).

We will also explore the National Green Infrastructure Certification Program (NGICP),¹⁴⁵ which provides the skill set needed for entry-level workers to properly construct, inspect, and maintain green stormwater infrastructure. Designed to meet international best practice standards, the NGICP is a tool that can be used to meet a wide range of needs, including professional development for existing green infrastructure professionals. As part of a larger workforce development, the NGICP can provide candidates with the technical skills to enter the green workforce and earn a livable wage.

¹⁴⁵ <https://ngicp.org/about/about-ngicp/>

¹⁴⁶ <https://ccrpc.gitlab.io/lrtp2045/>

¹⁴⁷ <https://fs.illinois.edu/services/more-services/tdm>

8.6 [F&S] Support Vision Zero as a county-wide goal for safe and sustainable transportation.

Vision Zero is a strategy to eliminate traffic fatalities and severe injuries while increasing safe, healthy, equitable mobility for all. First implemented in Sweden in the 1990s, Vision Zero has proved successful across Europe and is now gaining momentum in major American cities. In 2012, Chicago became the first U.S. city to adopt Vision Zero; since then, more than 20 cities across the country have committed to this strategy.

The Champaign-Urbana Urbanized Area Transportation Study (CUUATS), the transportation entity of the Champaign County Regional Planning Commission (CCRPC), is the Metropolitan Planning Organization (MPO) responsible for administering the federally mandated transportation planning process for the Champaign-Urbana-Savoy-Bondville-Tolono urbanized area. In December 2019, CCRPC published the Long Range Transportation Plan (LRTP) 2045¹⁴⁶ for the area, including Vision Zero as an objective. The university is an active partner of CUUATS, and therefore supports the Champaign County LRTP 2045 and commits to the Vision Zero objective.

The Transportation Demand Management (TDM) department¹⁴⁷ at F&S works with regional transportation planning partners to coordinate networks for all campus travel, including walking, bicycling, transit, and motor vehicles. TDM also encourages active

transportation, maintains street signs and pavement markings, manages traffic closures on campus property, prioritizes pavement improvement projects, and emphasizes pedestrian safety and the safety of all on-campus modes of transportation. Furthermore, implementing the Campus Bicycle Network Master Plan and exploring sustainable options for transportation infrastructure and fuels fall under the TDM's purview. In the last five years, the department's efforts and safety measures have resulted in zero transportation-related fatalities on campus streets.

The City of Urbana's Bicycle and Pedestrian Advisory Commission (BPAC) passed a resolution in support of Vision Zero in late fall 2019.¹⁴⁸ In January 2020, the Urbana City Council and Mayor made a commitment to the Vision Zero concept by directing BPAC to bring forward a Council Resolution and Vision Zero plan for approval by the full council.¹⁴⁹

¹⁴⁸ <https://www.urbanaininois.us/BPAC>

¹⁴⁹ <https://bit.ly/3hT7YaI>

8.7 [iSEE] Establish a local offsets program by FY24.

As stated in the Transportation chapter, we are interested in pursuing local carbon offset programs, in part to mitigate greenhouse gases (GHG) generated as a result of university air travel but primarily as a way to educate faculty and staff about air emissions. In collaboration with local communities, we plan to adhere to the following steps in pursuit of a results-driven carbon offsets program:

- » By the end of FY22, inventory available peer institutions and offset programs through a literature review.
- » By the end of FY23, develop a plan with wide stakeholder engagement both on and off campus.
- » During FY24, initiate the finalized plan.

Conclusion

Climate change does not exist in a vacuum; neither does climate resilience. Limiting our resilience scope to campus alone would not only impede our own progress, but also that of surrounding communities.

It is therefore in all of our best interests to address air quality, biodiversity, infrastructure, and rainwater management not as items for individual action, but as coordinated efforts to

maximize all available resources. Given the unprecedented challenges posed by the COVID-19 pandemic, strengthening the resilience of our local communities is more important than ever.

To implement lasting adaptive strategies and enact preparedness measures, we are pleased to begin conducting meaningful work in partnership with Champaign, Urbana, and Savoy.



Chancellor Robert J. Jones, iSEE, and the Sustainability Council continue to work with cities and other local entities to ensure climate resilience.