

## UT Martin Climate Action Plan July 2022

### Introduction

UT Martin joined the Climate Leadership Network on 22 October 2019 when Chancellor Keith Carver signed the Climate Resilience Commitment. The Climate Leadership Network is a signature program of Second Nature that provides resources, networking, and national engagement opportunities for signatory institutions. Signatories are colleges and universities in nearly all fifty states who are taking action on climate change and preparing students through research and education. Higher education institutions whose presidents or chancellors have made a formal commitment with respect to climate leadership on their campus by signing onto at least one of the three Presidents' Climate Leadership Commitments, become Climate Leadership Network signatories. The climate leadership statement to which all signatories pledge, follows:

"We, the undersigned presidents and chancellors of colleges and universities, believe firmly in the power, potential, and imperative of higher education's key role in shaping a sustainable society. Not only are we deeply concerned about the increasing pace and intensity of global climate change and the potential for unprecedented detrimental impacts, but we also understand that technology, infrastructure, global interconnectedness, and our greatest asset – engaged, committed, smart students – allow us to explore bold and innovative solutions and to lead in climate action and sustainable solutions.

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.

We believe colleges and universities must exercise leadership in their communities and throughout society by providing the knowledge, research, practice, and informed graduates to create a positive and sustainable future. Along with other aspects of sustainability, campuses that address the climate challenge by reducing greenhouse gas emissions and by integrating resilience into their curriculum, research, and campus operations will better serve their students and meet their social mandate to help create a vital, ethical, and prosperous civil society. We further believe that exerting leadership in addressing climate change will reduce our long-term energy costs and the costs of climate disturbance, increase our quality of life, attract excellent students and faculty, and build the support of alumni and local communities.

We have resolved to take action in one of the following Presidents' Climate Leadership Commitments. We believe carbon neutrality and resilience are extremely high priority areas of action for all institutions and we aim to lead the nation in these efforts. We urge others to join us in transforming society towards a sustainable, healthy, and more prosperous future."

UT Martin signed the Climate Resilience Commitment, with the recognition that our region is vulnerable to several climate-related impact, including but not limited to drought, extreme heat, extreme cold, rainfall flooding, severe storms, tornados and ice. Identification of and addressing these impacts represents a proactive initial approach to climate change.

The requirements of the Resilience Commitment are to:

- 1) Develop a Climate Action Plan to increase resilience.
  - a. Within two months of signing this document, create internal institutional structures to guide the development and implementation of the Plan
  - b. Within one year of the implementation start date, actively support a joint campus-community task force (or equivalent) to ensure alignment of the Plan with community goals and to facilitate joint action, and submit the first annual evaluation of progress
  - c. Within two years of the implementation start date, lead and complete an initial campus-community resilience assessment including initial indicators and current vulnerability
  - d. Within three years of the implementation start date complete the Plan, (also reflecting joint community-campus components), which will include:
    - A target date by which defined thresholds of resilience will be met
    - Interim target dates for meeting milestones that will lead to increasing resilience
    - Mechanisms and indicators for tracking progress (including those that cut across campus-community boundaries)
    - Actions to make resilience a part of the curriculum and other educational experiences for all students
    - Actions to expand research in resilience
  - e. Review, revise if necessary, and resubmit the climate action plan not less frequently than every five years
- 2) Submit an annual evaluation of progress
  - a. Within one year of the implementation start, and every year thereafter, complete an annual evaluation of progress
  - b. Make the action plan and annual evaluation of progress publicly available by submitting them to Second Nature's reporting system for posting and dissemination

The Coordinator of the UT Martin Center for Sustainability was named by the Chancellor as facilitator for our resilience planning efforts. A taskforce was identified (Appendix 1) and, in July 2021, an Initial Resilience Assessment Workshop was held. The commitment requires examination of resilience in five focal areas, or dimensions: ecosystem services, human health and wellness, infrastructure, social equity and governance, and finance. The Initial Resilience Assessment identified four primary strategies to address our vulnerabilities to climate change. These four strategies and their associated dimensions follow:

Strategy 1: Increase and improve green space on campus (including tree cover)  
Primary Dimension: Ecosystem Services (E)

Strategy 2: Improve Healthcare Access and Availability (including Mental Health)  
Primary Dimension: Human Health and Wellness (H)

Strategy 3: Improve reliability and access to transportation (on campus and in community)  
Primary Dimension: Infrastructure (I)

Strategy 4: Increase climate initiatives and awareness of climate change  
Primary Dimension: Social Equity & Governance (SG)

Members of the taskforce met in July 2022 to identify **short-term (0-5 years), medium-term (6-15 years), and long-term (16+ years)** goals to address each of these strategies. This Climate Action Plan details these goals.

## **Strategy 1: Increase and improve green space on campus (including tree cover)**

This strategy occurs within the Ecosystem Services dimension. The primary purposes of this strategy are to decrease stormwater runoff and flooding, increase water retention during drought periods, increase biodiversity, and increase and facilitate emotional health of members of the campus community.

Short-term goal 1: Update the Campus Tree Planting Plan.

The Campus Groundskeeper maintains a plan in the form of a map showing intended species and placement of future tree plantings. This plan was last updated in 2017. Since that time, a new campus Master Plan has been developed that affects future plantings. A new map will be created addressing these changes and also including new native wildflower plot and water garden locations. UT Martin was certified by the Xerces Society as a Bee Campus USA in June 2022; creation of new wildflower plots is part of this certification.

Short-term goal 2: Develop streamside buffers of at least 25 feet on all streams on the UTM Farm.

Management of rowcrop fields adjacent to Cane Creek and its tributaries by the UTM Farm Staff is inconsistent with regard to presence/width of streamside buffer zones. A formal policy to be adopted by the department specifying a buffer of at least 25 feet will decrease runoff of water, fertilizer and herbicides; decrease siltation of streams; increase biodiversity; and increase carbon capture.

Mid-term goal 1: Achieve certification with Tennessee Urban Forestry Council as a Level 2 Arboretum.

UT Martin was certified in 2015 by the Tennessee Urban Forestry Council as a Level 1 Arboretum, which requires labeling at least 30 tree species. We were recertified at Level 1 again in July 2022, at which time approximately 40 trees were labeled. Campus grounds plants new trees every year, including species new to our campus, with a focus on native species. Once trees have had two or three years to grow and become established, they may be tagged; when we reach 60 tagged trees, we will be eligible for Level 2 certification. Greater diversity of trees results in greater diversity of fauna, and increased resilience to tree disease due to climate-related stress and invertebrate range expansions.

Long-term Goal 1: Plant at least 50 trees per year on campus.

Many trees on campus are over 100 years old; loss to senescence, storms, drought, disease, soil compaction and disturbance to roots results in loss of multiple trees annually. Financial and human resources allow for limited planting of new trees each year. The goal in recent years has been to plant 50 trees per year; this goal is often not achieved. UT Martin is certified by the Arbor Foundation as a Higher Education Tree Campus; this certification requires that a campus tree care committee meet regularly. One of the members of this committee is also a member of the Tennessee Urban Forestry Council. The head campus groundskeeper will work with this member and the coordinator for the campus Center for Sustainability to write an annual grant to the Tennessee Division of Forestry to receive matching funds for tree acquisition and planting, to facilitate consistency in meeting this goal.

Long-term Goal 2: Provide more shaded outdoor walking/exercise/activity space.

Providing access to more comfortable outdoor activity space would promote connection with the environment, reducing anxiety and promoting fitness activity. Physical activity is also an excellent avenue to improving mental health. Shaded activity settings could also be designated for meditation, which is also effective in addressing anxiety and promoting mental health (Strategy 2). Tree planting efforts can include the Pacer Pond walking trail and other currently unshaded or partially-shaded sites.

## **Strategy 2: Improve Healthcare Access and Availability (including Mental Health)**

This strategy occurs within the Human Health and Wellness dimension. The primary purpose of this strategy is to identify and address student anxiety associated with regional and global climate impacts.

Short-term goal 1: Support construction of outside social event spaces.

Student health and wellness are influenced by access to outdoor spaces for leisure, fellowship, and meeting/event spaces. Two sites have been widely recognized as having great potential for such spaces. One is an open area directly northeast of Pacer Pond, where a pavilion (“Pacer Pavilion”) may be constructed. The other is the space currently occupied by Grove Apartments. These are scheduled to be removed, and an amphitheater may be constructed in this space. Both of these event spaces are listed on the 2021 Campus Master Plan as short-term goals.

Short-term goal 2: Develop a survey instrument to collect data on local student concerns regarding anxiety and the role of climate in promoting anxiety.

While anecdotal reports suggest that students experiencing anxiety are concerned with climate change and the concomitant weather extremes, establishing a baseline data set of a cross-section of UTM students will allow greater confidence in directing on-going outreach and mitigation effort. This survey may be conducted as supervised undergraduate research through the UT Martin Psychology program.

Mid-term goal 1: Communicate with faith-based student organizations to identify and characterize anxiety of students.

Several faith-based student organizations are active on and adjacent to campus, including the Baptist Collegiate Ministry, Catholic Campus Ministry, Church of Christ Student Center, Fellowship of Christian Athletes, and Wesley Foundation. The Coordinator for the UT Martin Center for Sustainability will communicate with leaders of each of these organizations to:

1. Determine how common they perceive to be the impacts of climate on mental/emotional health
2. Determine their activities to address impacts of climate on mental/emotional health
3. Share with them what the campus is doing to address impacts of climate on student mental health
4. Seek partnerships to address and facilitate student emotional health

Mid-term goal 2: Establish and promote student engagement in resilience/mitigation efforts.

Among the most effective measures for addressing anxiety is hands-on activity. Providing opportunities for volunteer activity with tree planting and tending various bee flower plantings or water garden plantings could promote greater pride of accomplishment and reduce anxiety for affected students, while also addressing goals from Strategy 1. Provision of annual student service learning opportunities are requirements for both Tree Campus and Bee Campus certifications, so these student opportunities will serve multiple goals.

Mid-term goal 3: Provide more mental health focused group activities to help alleviate increased anxiety related to climate issues.

Recent research and local anecdotal evidence suggest that students are significantly affected by climate concerns, and climate and weather are frequently mentioned as sources of anxiety. To address this more specifically, we propose that Student Health and Counseling Services, Office of Student Life, and other campus entities offer more regular group therapy type activities using outdoor spaces to connect more with the environment and help to alleviate environmentally driven anxiety. This directly connects with Strategy 1. More extensive group outreach can be achieved if counselor access remains sufficient (through tele-health providers or in-person professionals).

Long-term goal 1: Support funding for new Student Health and Counseling Services facility.

Student Health and Counseling Services is currently located in a small house at the edge of campus. The location, size, floorplan, and condition of the facility are increasingly inadequate to accommodate the growing number of students in need of counseling services. The Campus Master Plan has listed a new facility north of the Student Recreation Center as a long-term goal.

Long-term goal 2: Support funding for new Student Health and Counseling Services staff.

The growing student demand for counseling services necessitates a growing Counseling Services staff. As the student population grows, it is important that growth of this department remain a priority. UT-Martin is piloting a tele-health program in fall 2022 through a national provider network to provide greater access to mental health care for students since the current counseling staff falls short of meeting the expanding need for mental health care among the student population. Complementing this program with an additional on-site staff counselor should be a priority.

### **Strategy 3: Improve reliability and access to transportation (on campus and in community)**

This strategy occurs within the infrastructure dimension. The primary purpose of this strategy is to provide transportation resources for both on-campus and off-campus students when storms/floods cause road closures, and generally for purposes of reducing carbon emissions from vehicle use. This could be shuttle services, increased bikes/bike lanes, pedestrian walkways, etc.

Short-term goal 1: Expand campus bike share program.

The UT Martin Center for Sustainability funded a campus bike share program, which was initiated in January 2021 with 5 bikes available for free checkout to students. Two bikes were located at Brehm Hall and three were located at the University Center. Several hundred users have checked out the bikes more than 1000 times as of June 2022, which indicates a strong demand. The bikes have been seen on the college farm, in the downtown region, and at local groceries and restaurants. Issues have also accompanied the program, including improperly checked in and missing bikes. The campus Center for Sustainability is working with Campus Security and the Motor Pool to address these issues. Regardless, finding or replacing missing campus bikes, and installing at least two additional bikes at Gooch Hall is planned to be funded from external sustainability grants, as well as adding a bike service station at Brehm Hall to complement the ones at the University Center and Gooch Hall.

Short-term goal 2: Connect the Brian Brown Greenway to the Pacer Pond walking trail.

This can be accomplished with a paved route along the east side of Skyhawk Parkway from University Avenue to the west campus pedestrian entrance adjacent to Hawks Road. This is listed in the 2021 Campus Master Plan as a short-term goal.

Short-term goal 3: Include hybrid vehicles in university fleet.

As cost of hybrid vehicles continues to become more competitive with traditional fueled vehicles, it becomes increasingly cost effective to include such vehicles in our motor pool. Advantages include lower fuel consumption and cost, decreased maintenance costs, decreased carbon emissions, and modeling use of conservative emission vehicles.

Mid-term goal 1: Seek funding for new pedestrian walkways.

Numerous roads through and adjacent to campus do not have pedestrian walkways; these roads are nevertheless used by pedestrians despite danger from vehicular traffic. Creation of pedestrian walkways would facilitate and potentially increase pedestrian travel and decrease vehicle use by students. The 2021 Campus Master Plan includes a walkway from the UC along the east side of Mount Pelia Road to Hannings Lane, along the north side of Hannings Lane, and from the Plant Science Complex to the Smith Livestock Center, all as mid-term goals.

Mid-term goal 2: Pursue additional electric car charging stations on campus.

Electric vehicles should be expected to become more common among campus visitors, due to the Blue Oval Ford plant, increasing availability, decreasing cost, etc. This increase should be accommodated with the infrastructure to support this shift in transportation. A single charging station is currently available in the stadium lot. At least two additional stations would be desirable as a mid-term goal.

Long-term goal 1: Seek funding for extended pedestrian walkways.

University Courts on Peach Street is removed from campus; although a walking/bike path does connect the two areas, this path is far removed from the road, and many pedestrians and cyclists use the road between the areas despite lack of sidewalks or bike lanes and the resulting unsafe conditions. A pedestrian walkway/bikeway along the road would

greatly improve access to this location, decrease danger to pedestrians and cyclists who already use the road here, and decrease vehicle use by students. This pathway is specified as a long-term goal in the Campus Master Plan.

Long-term goal 2: Seek requirement to register all campus bikes with campus security.

This is a common free or small fee service on college campuses, where numbered stickers are applied to registered bikes. This allows for tracking number of bikes and the subsequent demand for infrastructure to support these bikes, and also for monitoring for lost or stolen bikes.

#### **Strategy 4: Increase climate initiatives and awareness of climate change**

This strategy occurs within the Social Equity and Governance dimension. The primary purpose of this strategy is to educate campus and community on climate impacts due to skepticism that climate is changing, that this is anthropogenically-influenced, and that climate change is having negative impacts on the environment and the community.

Short-term goal 1: Increase social media posts, public presentations, and press releases related to impacts of climate change.

The UT Martin Center for Sustainability hires student interns who regularly post sustainability-related topics on social media. Interns will be directed to post at least once per semester on climate. The Center for Sustainability Coordinator also occasionally presents on, or hosts presenters on, sustainability-related issues on campus. At least one presentation per year will include content on climate. These social media posts and presentations reach students, faculty and staff, and occasionally community members. To further reach community members, opportunities for local climate-related press releases will be identified by the Sustainability Center Coordinator.

Short-term goal 2: Provide and promote the dissemination and exchange of accurate climate information.

One of the major factors in anxiety is concern over or fear of the unknown. Providing objective information from reliable sources will help to alleviate anxiety and promote positive activity toward mitigation. Programs and outreach efforts as proposed in Strategy 4 directly impact this goal. The Center for Sustainability will initiate a clearinghouse of climate information for student and public information and education.

Mid-term goal 1: Include sustainability and climate-related initiatives in the General Studies 101 (First Year Initiative) curriculum.

The GS101 standard curriculum is provided on Canvas for all instructors of this courses, which is taken by approximately 95% of freshmen on campus. This curriculum is designed to acclimate students to our campus environment. Including Sustainability Center activities and resources, along with the values held by our campus related to climate adaptation, will fit well and appropriately with current required content.

Mid-term goal 2: Identify general education and other courses with climate change content; make a listing available to students.

Climate change and its impacts is addressed in numerous courses; however, this information is not readily available to students interested in pursuing knowledge in this important subject area. The Center for Sustainability can regularly review course descriptions and maintain a listing of relevant courses on its website for student informational purposes.

Long-term goal 1: Make the Sustainability Center Coordinator position a full-time appointment.

The UT Martin Center for Sustainability was created in 2018 and is currently funded by a \$5/semester Green Fee. This fee covers all Center expenses, including the salary and benefits of the Coordinator. This position is currently filled by increasing a 9-month faculty member appointment to a 12-month appointment. No release time is provided. A significant proportion of Green Fee funds goes to this salary. Creation of a full-time Coordinator position from university funds would dramatically increase funds available for sustainability initiatives on campus, including climate-related initiatives. Additionally, the Coordinator would not be constrained by teaching obligations and other tenure-track faculty responsibilities.

## Summary

The 24 goals described in this report pertain to four strategies to address climate resilience on the UT Martin campus (Table 1). While not a comprehensive list of every way that our campus may address climate resilience, the goals here have been identified through an exhaustive vetting process identified through the Climate Leadership Network, beginning with an Initial Campus Resilience Assessment conducted by a campus and community taskforce in summer 2021, and culminating with this report. The taskforce believes that these goals represent the highest priorities for our university to maximize our climate resilience. Several of the goals address more than one of the strategies; we believe that these inter-strategic relationships validate the relevancy of the identified goals and maximize the benefit of addressing each of them.

Table 1: Number of short-term (0-5 years), mid-term (6-15 years), and long-term (16+ years) goals identified, by strategy.

Strategy	Short-Term Goals	Mid-Term Goals	Long-Term Goals	Total
Greenspace	2	1	2	5
Mental Health	2	3	2	7
Transportation	3	2	2	7
Climate Awareness	2	2	1	5
Overall	9	8	7	24

Climate resilience cannot be achieved by any one campus office; rather, resilience requires cooperative and continuing efforts across all campus units. Certain offices, such as the Center for Sustainability, may play critical roles in coordination, but a proactive resilience program absolutely requires support and commitment from university administration. The UT Martin Chancellor and Provost have fully supported efforts at climate resilience. Success also depends on an active and fruitful partnership between campus and community. The City of Martin and the University of Tennessee at Martin share a strong partnership and commitment to the welfare of students and community members alike; this partnership is critical to the successful implementation of several goals herein.

A successful climate resilience plan must be responsive to changing conditions. While this Climate Action Plan may be considered a final report, it must also be revisited and modified on an ongoing basis to reflect met goals, newly identified challenges, and new objectives. We recommend that the plan be formally revisited and revised at least every five years; this process should continue to be led by the Coordinator for the UT Martin Center for Sustainability.

Finally, it is important to note that a comprehensive approach to climate change begins with this foundational work of building resilience, and that future efforts must increasingly address carbon emission reduction and sequestration.

## Appendix I: UT Martin Climate Resilience Taskforce

Eric Pelren, Facilitator – Natural Resources Faculty, Sustainability Center Coordinator

Darrell Ray, Co-Facilitator – Biology Faculty

Amanda Crice – Wesley Foundation

Laura Foltz – Finance and Administration

Sam Goyrey – Northwest Tennessee Local Food Network

Dana Hagan – Physical Plant

Art Hunt – Communications Faculty

Jennifer Hart – Student Health and Counseling Services

Mike McCullough – Management Faculty

Anthony Prewitt – Student Life

Holly Rowan – Campus Emergency Response Coordinator

Mark Simpson – Meteorology Faculty

Rachna Tewari – Agriculture Faculty

Brad Thompson – City of Martin

Chris Virgin – Campus Grounds

Carol Williams – Finance and Administration