CLIMATE ACTION STRATEGIES

The CAP working groups developed strategies for climate action across the Institute. Community, Equity, and Accessibility strategies are presented as an initial framework and integrated throughout the other focus areas to ensure equitable access and impact. The remaining strategies were organized into eight focus areas:

- COMMUNITY, EQUITY & ACCESSIBILITY
- MITIGATION & ADAPTATION
- BUILDING ENERGY
- Strategies that reduce Scopes 1 and 2 emissions, increase energy efficiency, and reduce energy consumption in buildings.
- RENEWABLE ENERGY & OFFSETS
- Strategies for implementing renewable energy sources and offsets.
- MOBILITY
- Strategies that support fossil fuel-free mobility within campus and to and from campus.
- MATERIALS MANAGEMENT
- Strategies that address how materials are bought, used, recovered, and disposed.
- WATER MANAGEMENT
- Strategies that increase the efficiency and conservation of water management, including potable water, greywater, blackwater, and stormwater.
- CARBON SEQUESTRATION
- Strategies that increase the amount of carbon dioxide sequestered through natural resources on campus.
- INNOVATION
- Strategies that support and expand current climate-related research and solutions.
- RESEARCH
- Strategies that support and expand current academic programs to prepare staff and students for climate action.
- EDUCATION
- Strategies that advance Georgia Tech’s academic programs to prepare staff and students for climate action.

How to Read These Pages

PRIORITY

It is important to assess the priority of each strategy for reaching 50% reduction in carbon emissions by 2030 and 100% by 2050. Estimated costs are based on assumptions in the GHG model. Strategies that were not modeled are estimated for cost based on time and resources necessary for successful implementation. The estimated cost for each strategy is indicated by dollar symbols.

- $$$: High Cost
- $$: Medium Cost
- $: Low Cost

COST OF IMPLEMENTATION

A cost analysis was developed to estimate expected implementation costs through 2050. Estimated costs are based on assumptions in the GHG model. Strategies that were not modeled are estimated for cost based on time and resources necessary for successful implementation. The estimated cost for each strategy is indicated by dollar symbols.

- $$$: High Cost
- $$: Medium Cost
- $: Low Cost

TIME FRAME

Strategies will be implemented at varying start dates and require different timelines between 2024 and 2050. Some can be implemented quickly while others require ongoing implementation. Time frames are based on expected implementation dates.

- Short-term: by 2030
- Medium-term: by 2040
- Long-term: by 2050

Each focus area provides an overview of the climate action strategies and details how each strategy aligns with:

- United Nations Sustainable Development Goals (UN SDGs): A full overview of how the CAP strategies align with the UN SDGs can be found in Appendix E.
- Institute’s strategic plan.
- Georgia Tech’s Sustainability Next plan.

How modeled strategies were noted:

- Low-hanging fruit based on low-cost, high-priority, and high-emission reduction potential.
- Strategies modeled for emissions reduction potential.
- Strategies that resulted in emissions reductions between 0 and 50,000 mt CO2e.
- Strategies that resulted in emissions reductions between 50,000 and 100,000 mt CO2e.
- Strategies that resulted in emissions reductions > 100,000 mt CO2e.
- Strategies that were not modeled since potential GHG reduction is unknown.

This transition can replace over 90% of Georgia Tech’s heating load and will operate at an efficiency of about five times greater than that of the current heating systems.

Additionally, minimizing the use of cooling towers tovert heat will save millions of gallons of water annually.
EDUCATION

GUIDING PRINCIPLE
We prepare all students, regardless of discipline, to address climate-related challenges in their personal and professional lives.

ALIGNMENTS

<table>
<thead>
<tr>
<th>SDGs</th>
<th>Institute’s Strategic Plan: Champion Innovation, Lead by Example</th>
<th>Sustainability Next: Catalyze Innovation Through Education and Research, Lead by Example in the Practice and Culture of Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>13</td>
<td>17</td>
</tr>
</tbody>
</table>

The core focus of Georgia Tech’s strategic plan is that “students are our top priority.”

As an institution of higher education, Georgia Tech’s commitment to climate action extends beyond reducing emissions. In alignment with Sustainability Next, it includes advancing education for students to be climate leaders in the workforce and in their communities. In addition to providing curricular and co-curricular opportunities for current students, this focus area prioritizes providing robust resources for climate education, lifelong learning, and collaboration on climate action.

This section includes six strategies developed by the Education and Student working groups to advance CAP educational goals. Each strategy below envisages significant expansion of curricular, co-curricular, and extracurricular opportunities for students, alumni, and lifelong learners.

“Georgia Tech is a leader in climate solutions research and, through this plan, will extend leadership into solutions implementation. Even more importantly, this plan outlines how our academic programs empower our students to make an impact on climate change through their disciplines, whatever they may be.”

— Jennifer Leavey, Assistant Dean for Faculty Mentoring, College of Sciences
This strategy prioritizes expanding climate and sustainability education in every degree program to ensure all students are equipped to advance climate solutions, and the UN SDGs more broadly, within their chosen professions.

In addition to key concepts and skills associated with the science of climate change, incorporating social change theory, frameworks, and transdisciplinary climate action case studies equips students to apply their knowledge and skills to advance change on campus, in future workplaces, and in their communities.

This strategy is coordinated with Sustainability Next. The Undergraduate Sustainability Education Committee and the Center for Teaching and Learning can provide professional development opportunities for instructors engaged in sustainability and SDG teaching to incorporate climate action concepts and key competencies.

Other actions include developing student learning outcomes related to climate that can be adopted or adapted for courses and degree programs, assessing current distribution and characteristics of current climate education across schools and colleges, and hiring a cluster of sustainability-related faculty members with expertise in education for climate action to lead interdisciplinary academic programming.1

Understanding and taking action to mitigate climate change requires transdisciplinary perspectives and the ability to work effectively with people from a wide range of backgrounds with diverse forms of expertise.

Instruction that incorporates multi-disciplinary and transdisciplinary learning helps students develop a more sophisticated understanding of complex challenges and solutions. Experiential and community-engaged learning can enhance learning outcomes and help students develop the skills needed for teamwork on climate change.

This strategy supports advancing Georgia Tech’s Living Campus by developing a formal framework that enables instructors across disciplines to include course modules and student projects that contribute to the CAP implementation.

It supports students in using Georgia Tech data on emissions and operations for class projects and working with the Center for Sustainable Communities Research and Education (SCoRE) to engage in community partnered climate research.

In addition, this strategy has a focus on creating new climate-related Vertical Integration Programs (VIPs) that include students, faculty, and staff on campus as well as community partners (e.g., community-based organizations, Drawdown Georgia, government, business) that work together to develop and explore research questions and support climate action.

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1 This action is part of the Association for the Advancement of Sustainability in Higher Education’s Sustainability Tracking, Assessment, and Rating System (AASHE STARS) criteria.
6.3 Expand climate-related credential offerings

Priority: MEDIUM
Estimated Cost: $$
Time Frame: Short-term

GHG Reduction Potential: N/A

This strategy involves increasing the number of degrees, certificates, and co-curricular opportunities to offer greater opportunities for in-depth exploration of climate science and solutions.

It proposes that Georgia Tech evaluate and expand internships with nonprofit, governmental, and business organizations engaged in climate action.

It requires evaluating climate action components of existing minor and certificate programs, including the sustainable cities and energy minors, collaborating with leadership and faculty associated with the new environmental science major to enhance and expand academic offerings related to climate action, and working with the Graduate Sustainability Steering Committee to bolster climate-related graduate programs.

Potential outcomes of this strategy might include opportunities for students to earn a certificate in GHG reporting and climate modeling.

6.4 Support student engagement around community-driven work outside the classroom

Priority: HIGH
Estimated Cost: $
Time Frame: Short-term

GHG Reduction Potential: N/A

This strategy focuses on providing education and training to students to support broader emissions reduction. Key actions include incorporating sustainability and climate emissions reduction on campus into student orientation and early GT1000 courses.

This would support student projects that advance carbon reduction on campus. Additional actions for this strategy include expanding the sustainability ambassador program (in Georgia Tech housing), supporting student competitions for carbon reduction, and hosting conferences and panel discussions that provide opportunities for students to further engage in climate action.

Climate action is crucial for Georgia Tech due to its responsibility to the environment, commitment to academic excellence, pursuit of sustainability, engagement with students, and the potential for community partnerships. Students participated in Climate Action Plan development through advisory groups, public engagement and workshops, contributions from student organizations, research involvement, and efforts for integration into the curriculum. This ensures that student voices and priorities are considered in shaping sustainability initiatives.

— Athena Verghis,
Graduate Student, Student Government Association
6.5 Engage all staff, alumni, faculty, and students in lifelong learning and collaboration centered on sustainability and the SDGs, including climate action

Priority: **HIGH**  
Estimated Cost: $  
Time Frame: **Short-term**  
GHG Reduction Potential: N/A

Georgia Tech can "amplify its impact" by engaging with alumni, as well as staff, faculty, and students, on climate action through lifelong learning and collaboration opportunities.

This includes working with the Georgia Tech Alumni Association to develop a strategy for climate education and connecting students with alumni and community partners.

It expands student engagement by hosting campuswide events and broader network events such as the University Global Coalition, the Regional Centres of Expertise (RCE) Greater Atlanta, and RCE Americas on campus. It also rewards leadership in climate action by offering institutional awards for students, staff, faculty, and alumni.

6.6 Engage with other institutions to advance climate education

Priority: **HIGH**  
Estimated Cost: $  
Time Frame: **Short-term**  
GHG Reduction Potential: N/A

Partnering with other institutions allows leveraging, developing, and sharing best practices in climate education by growing networks of contacts and engaging in joint initiatives — locally, nationally, and internationally.

Georgia Tech is already collaborating with organizations such as the [Georgia Climate Project](https://climate.georgia.edu/) and the [RCE Greater Atlanta](https://rcegreateratlanta.org/) and will continue to engage with other academic institutions to compare, improve, and disseminate climate change-related curricula. This strategy also supports sharing best practices by meeting with other academic institutions to compare programs, tactics, and technologies, and how those are leveraged into academics to advance climate education and action.
## EDUCATION: Measures of Success

### TABLE 7: EDUCATION MEASURES OF SUCCESS

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracking of (and increase from baseline) climate-inclusive course offerings</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Established network for faculty members teaching climate-inclusive courses</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Tracking of (and increase from baseline) number of collaborative climate education projects, resources, and conference presentations with other institutions</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Tracking of (and increase from baseline) number of local community climate engagement student projects and internships</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Tracking of (and increase from baseline) number of students reporting engagement with climate-oriented projects and partnerships, on and off campus</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>