DAVIDSON COLLEGE CLIMATE ACTION PLAN 2021-2026

Doing our Part:

A Campus Roadmap to Halving Greenhouse Gas Emissions

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History of Davidson College Climate Action Planning

Context for the original Climate Action Plan

In 2010, Davidson College published its first Climate Action Plan (2010 CAP, Appendix A). Development of the plan was motivated by then-President Tom Ross' decision to join a cadre of institutions of higher education (IHEs) across the United State signing the American Colleges and Universities Presidents' Climate Commitment (ACUPCC). The ACUPCC called for IHEs to choose a target year for carbon neutrality along with interim reduction goals, to develop and publish an accompanying climate action plan, and to measure and publicly report the greenhouse gas emissions (GHGs) associated with campus operations each year.

By the first decade of the 21st century, climate science revealed alarming trends and highlighted the need for urgent action to curb human activities emitting climate-warming gasses. Global diplomatic discussions were already in motion. Yet, the topic was just beginning to enter public consciousness in the U.S., and was met with strong partisan resistance and campaigns of climate denialism by corporate interests vested in a fossil fuel-based economy. In that moment, alignment of leading U.S. college presidents in acknowledging the threat posed by global climate change and the commitment of their collective institutional power to solution-building was revolutionary. The ACUPCC modeled an approach to climate action that continues to be adopted by city and state governments, corporations, and other entities across the globe: namely, senior-level commitment to ambitious GHG reduction targets as a means to drive operational changes across their organization.

Approach to the original Climate Action Plan

The 2010 CAP and approach to development share many characteristics with other first-generation plans of ACUPCC signatories. A large cross-campus stakeholder committee was convened (34 in Davidson's case, in addition to consultation with a 24-member Sustainability Council which featured significant alumni representation, other college administrators, and the Board of Trustees). Davidson's first sustainability staff position was established to direct the plan development process, and the college's first themed year was dubbed the "Year of Sustainability."

The 2010 CAP committee organized into teams delivering wide-ranging recommendations in the following areas: Operations and Infrastructure, Transportation, Solid Waste, Administrative Policies, Curriculum and Research, and Student Outreach (2010 CAP). A 2017 analysis of the plan's 49 objectives by Office of Sustainability student employee Jonathan Lee '18 determined that 21 had been successfully implemented, 14 had not yet been implemented, and 14 were no longer relevant in the current context (see Appendix B). In many cases the not-yet-implemented or no-longer-relevant objectives were either phrased so broadly as to be impossible to declare success (i.e. "Focus on institutional goals for GHG emissions and sustainability and utilize partnerships in delivery of information/use the campus as a classroom"), or were written in a limiting, specifically instructive way (i.e. "Make a carbon-footprint calculator for dorm rooms available online" does not fit current best practices for student outreach). Authors of the 2010 CAP did understand the limitations to their work in a rapidly changing context, writing that "The CAP is a living document that will be reviewed

and revised over time to account for new technologies, developments in climate policy, and the evolution of the campus culture (page 3 of 2010 CAP)."

Davidson's first GHG inventory was completed in early 2009 and is included in the 2010 CAP. That analysis provided a valuable baseline assessment and identified the relative share of various campus operational activities to the total GHG footprint. However, in the effort to mobilize such a large and broad group of campus stakeholders, a shortcoming of the 2010 CAP was that specific objectives were not tied to the associated reduction in GHG that would be realized through their achievement, and were not accordingly prioritized. In fact, "Sustainability Master Plan" would have been a more accurate title for the document: "Not all objectives of this CAP will directly reduce GHG emissions, but will promote sustainability on campus through education and advocacy, adding to the overall culture of sustainability at Davidson. Additionally, those projects that do lead to GHG emissions abatement should consider any and all cocurricular opportunities to be significant social benefits (page 4 of 2010 CAP)."

Approach to the 2021 Climate Action Plan

That long-held dual emphasis for Davidson's sustainability program remains true today. Measurable GHG reductions are generated primarily through operational and policy changes, while wide-reaching and long-term impact in the world derives from education and broad-based engagement. The Office of Sustainability invests deeply in student outcomes, most notably through three signature programs: the Sustainability Scholars internship program, the Sustainability Cooperative residential community, and a large student employee team. Across campus, a growing number of students major or minor in Environmental Studies; Davidson Outdoors continues to expose students to respectful immersion in the natural world; the campus farm, compost program, and plant-forward dining menus are points of pride; students use campus' eight LEED-certified buildings and arboretum as topics for class projects; and countless students pursue sustainability and environmental justice work through civic engagement and campus-based organizations.

Focused outcomes

While recognizing the importance of broader campus efforts, the authors of this 2021 - 2026 CAP intentionally focused on curbing Davidson's institutional GHG emissions that drive climate change. This approach reflects the indisputable need for urgently curbing climate change, societal momentum, longitudinal institutional data and novel technologies that have emerged since 2010. Accordingly, they flipped the plan development process relative to the 2010 CAP: using campus emissions to data to inform solutions, rather than compiling wide-ranging recommendations with limited understanding of the associated emissions reduction potential. The team studied FY2018 campus GHG data to develop specific, ambitious yet achievable project recommendations predicted to **achieve a 50 percent reduction in campus emissions over the next five years relative to the FY2008 baseline.**

Strategic positioning

The 50% reduction target and specific strategies bring Davidson's operational practices closer in line with both student priorities and peer institutions' performance. Eighty-five percent of Davidson student respondents to a Student Government (SGA)-issued survey cited sustainability as being "very important" or "important" to them in their daily life (see Appendix C). Only four percent of respondents thought that the institution's performance towards sustainability and climate goals was "good," with 77% citing "okay, bad or very bad" institutional performance, and the remaining 19% unsure. In an attempt to capture real-world resource constraints, respondents were then asked to priority rank eight important areas of focus for Davidson as if they were President Quillen. Thirty-four percent of student respondents thought reaching carbon neutrality should be one of three top leadership priorities when compared to other key initiatives including academic achievement, health and safety of students, and diversity of the student body.

Since publication of the 2010 CAP, Davidson has significantly strengthened institutional performance around other strategic priorities. However, as peer institutions have accelerated their focus on climate action, Davidson has failed to keep pace. Exact benchmarking is difficult because each institution sets its own priorities and timelines. However, percentage reduction in GHG to date is one insightful point of comparison. Davidson has achieved a ten percent reduction from baseline fiscal year 2008. A random sampling of five IHEs often looked to as Davidson peers - UMass Amherst, Middlebury, Washington and Lee, Swarthmore, and Bowdoin – revealed that two have already achieved carbon neutrality. Two campuses have reduced emissions by 24% and 42% from baseline years, respectively. One institution shows a more modest 6% reduction, but has recently completed significant infrastructure projects and solar installation with battery storage whose GHG impact will be realized in future years' reports. Those institutions which have achieved carbon neutrality through the use of carbon offsets continue to seek improvements to their own operations that will reduce reliance on purchased, outsourced solutions.

Given the above context, Davidson should rightly celebrate the important progress represented by this plan while also seeking its continuous improvement. Annual progress review by senior leadership will be a helpful tool to that end. The institution should not only support full implementation of the included strategies and tactics, but also seek additional strategies beyond this current plan version, to strengthen institutional action towards curbing climate change and broader sustainability outcomes.

The team

The CAP team ("the team") was convened in Summer 2020 by Director of Sustainability Yancey Fouché, and included VP Finance and Administration and CFO Ann McCorvey, Director of Physical Plant David Holthouser, and Strategic Projects Manager Holly Thomas. The team used the most recent and representative institutional campus GHG dataset, capturing FY2018 operations, as collected in the Sustainability Indicator Management & Analysis Platform (SIMAP; https://unhsimap.org/home) and reported publicly on the Second Nature Reporting Platform (https://reporting.secondnature.org/home/).

Stakeholder engagement

Campus and community stakeholders were engaged at several stages of plan development. Because managing through the COVID pandemic was top priority during the period of CAP development, and because GHG analysis quickly revealed that the most impactful actions would be operations overseen by those represented in the planning team, most stakeholder touchpoints took the form of updates and dialogue as opposed to seeking specific input on recommendations. Importantly, messaging highlighted areas of campus operations that will NOT be near-term priorities because of their relatively low contribution to total campus GHG. Because several of these low-impact areas (i.e. paper use, solid waste, ground transportation) are more visible in the day-to-day experience of the campus community than high-impact areas like purchased electricity, ongoing messaging to the campus community about progress towards the CAP will be essential.

Table 1. Stakeholders engaged throughout CAP development

Party	**Approach**
Town of Davidson	During FY2021, Yancey Fouché met biweekly with the Town's Natural Assets and Sustainability Coordinator Charlene Minor, Planning Board member Nora Barger, and Sustainability Committee member Raul Galvan '21. The group discussed Hitchcock & Willard's *Step-by-Step Guide to Sustainability Planning* (2008); reviewed relevant national, state, local, and organizational climate plans; brainstormed strategies and reviewed specific opportunities relevant to both the College's CAP and the Town's Sustainability Framework (approved by the Board of Commissioners in Spring 2021). A presentation on the CAP and its lessons learned for Town sustainability efforts was provided by Yancey Fouché to the Livability Board in Spring 2021.
Students	As referenced above, Raul Galvan '21 provided ongoing, insightful council throughout plan development. In Winter 2021, Brooke Whitcomb '22 administered a survey to explore students' support for climate action relative to other college priorities (Appendix C). Representatives of SGA and student employees of the Sustainability Office provided feedback on student perception and effective communications around climate action to the CAP team in both Fall 2020 and Spring 2021. The *@davidsonsustainability* Instagram account shared an education campaign about the CAP with its 700+, mostly student, followers in Spring 2021.
Faculty	A summary of the CAP development process and high-level recommendations was shared with Environmental Studies faculty over e-mail and with the Biology department as part of a virtual meeting.
Staff	Director of Education Abroad Naomi Otterness provided important insights to the work of her office and overlapping goals and opportunities to integrate climate action. Athletic Director Chris Clunie advised on reasonable timing and opportunities to adjust the climate impact of athletics air travel.

Party	Approach
Staff Cont.	Physical Plant Accounting Manager Diane Dreffer and Chief Communications and Marketing Officer Mark Johnson participated in a presentation by consultant Customer First Renewables (CFR) to learn about and lend their perspectives to CFR's recommendations for large scale renewable energy procurement. The cross-institutional Operations Committee reviewed a plan update and provided specific insights to institutional air travel policy and practices in Spring 2021.
Alumni	Numerous alumni have expressed interest, support, and curiosity regarding Davidson's goals for climate action over time. While individual alumni were not consulted as part of plan development, clear communication that the institution has a specific short-term strategy towards ambitious, impactful, and science-aligned emissions reductions will be a key opportunity of alignment with institutional values and messaging.

Guiding principles

Early in the planning process, the team used several exercises adapted from and/or inspired by the *Step-by-Step Guide to Sustainability Planning* (Hitchcock and Willard 2008) to gain strategic alignment to inform consideration of specific opportunities. A particularly useful activity integrated feedback from students as well as team members to arrive at the following relative prioritization of projects representing a specific conceptual approach on a continuum. Bolded and underlined characteristics were preferred by the group; continua without such formatting were determined to desire a balanced approach:

- **Highest impact** vs. highest visibility
- **Climate mitigation** (reducing emissions) vs. climate resilience (adapting to known climate impacts)
- Continuation of existing vs. new
- **Technical** solutions vs. behavioral / programmatic solutions
- **Institutionally achievable projects** vs. those tied to community partnership
- **Fewer deep recommendations** vs. numerous recommendations with distributed responsibility
- Scope 3 (indirect emissions) included vs. not included

Drawing on the above shared priorities and other discussions, the team further agreed:

- to seek to make the biggest difference by favoring focused recommendations that the institution, and even the representative roles around the planning table, are positioned to resource and deliver in the short term;
- to develop a five-ten year climate action plan (NOT a plan for climate resilience, broader sustainability outcomes, or adjustments to the 2050 target date for carbon neutrality);
- to emphasize project-level recommendations as a measurable and institutionally-aligned approach to achieving emissions reductions.

Emissions summary

Over the course of the decade of annual GHG reporting considered for this plan (FY08-FY18), Davidson reduced its total net emissions by 9.7% (Table 2). This progress is notable in the context of sizeable expansion of building space and slight growth in student body population over the same period. Normalized to account for those changes, the institution reduced its emissions *per-square foot* by 27.2% and *per student* by 16.7%. These figures reflect ongoing and impressive work that has been done to ensure that campus systems and buildings responsibly manage energy use. Duke Energy's gradual reduction in the use of fossil fuels to generate electricity has also benefitted the campus emissions profile. Importantly, the difference in total emissions and emissions per square foot over the past decade reminds us that limiting growth, or even reducing, the total square footage of campus buildings is an important consideration to total emissions. Although beyond the scope of this plan, effective space utilization of existing buildings should be a central part of long-term campus planning.

Table 2. Campus emissions changes over reporting period FY08-FY18. Scope 1 emissions derive from fossil fuels burned on campus, Scope 2 from purchased electricity, and Scope 3 from indirect sources. Red percentages indicate total emissions interim targets defined in the 2010 CAP (https://reporting.secondnature.org/home/)

Percent Change in Greenhouse Gas Emissions 2018 vs. Baseline 2008 and Emission Reduction Target Goals

	TOTAL SCOPE 1	TOTAL SCOPE 2	TOTAL SCOPE 3	TOTAL SCOPE 1 & 2	TOTAL SCOPE 1, 2, & 3	TOTAL NET
CHANGE IN EMISSIONS	↑ 6.94%	↓ 25.68%	↑ 17.99%	↓ 14.90%	**↓ 9.64%**	**↓ 9.66%**
PER 1,000 SQ. FT.	↓ 13.83%	↓ 40.12%	↓ 4.93%	↓ 31.43%	**↓ 27.19%**	**↓ 27.20%**
PER FULLTIME ENROLLMENT	↓ 1.45%	↓ 31.51%	↑ 8.73%	↓ 21.58%	**↓ 16.73%**	**↓ 16.74%**
EMISSION REDUCTION TARGETS					10% by 2020 15% by 2030	

While change over time is useful for gauging process, the team used a more detailed point-in-time analysis from a representative year to inform project priorities. Evaluating the relative emissions impact of all reported operational activities in FY18 revealed that the overwhelming majority (94%) of campus emissions derive from four activities (Figure 1). The team accordingly studied and developed strategies to reduce emissions associated with these activities.

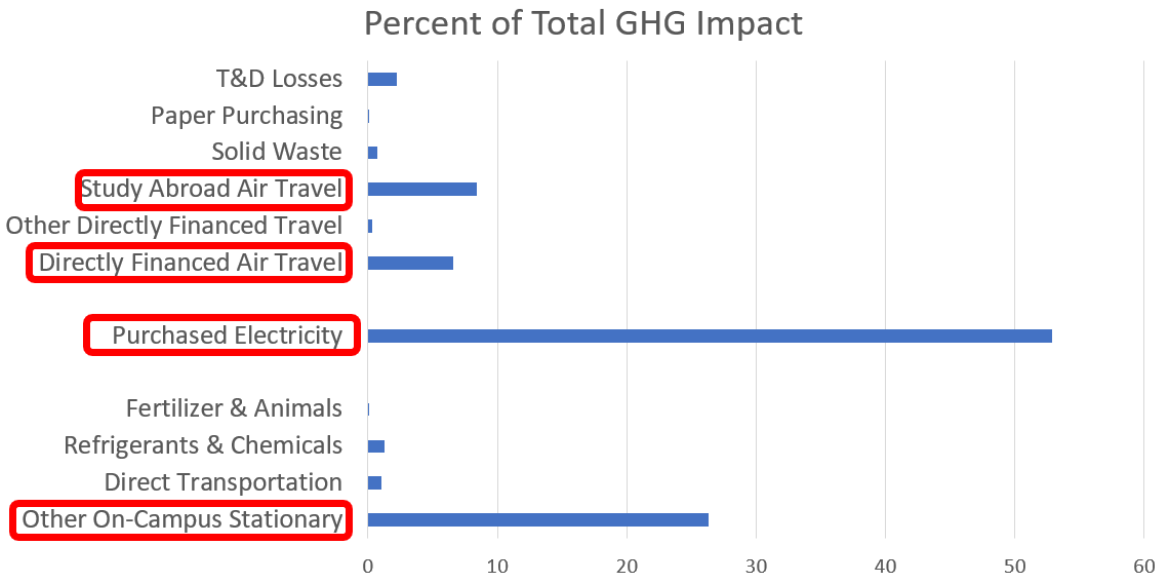


Figure 1. Percentage of total campus emissions derived from each reported operational activity in FY18. Taken together, the four boxed activities were responsible for 94% of total emissions and have been prioritized in the plan

Second Nature consulting

In March 2021, Davidson was one of four U.S. institutions of higher education to be awarded pro bono consulting for shifting to renewable power. The grant was issued by climate action in higher education non-profit Second Nature, with sponsorship and services provided by CustomerFirst Renewables (CFR). The team subsequently collaborated with CFR for an eight-week period to conduct an electricity needs analysis and study opportunities to shift to large-scale renewable power. The team studied two potential models, virtual power purchase agreements and the North Carolina Green Source Advantage program, as well as specific partner and project opportunities. The collaboration with CFR was key to the team's confidence in pursuing a large-scale renewable energy strategy and has launched us well on our way to the goal to negotiate a contract in FY22.

Strategies

Specific strategies and tactics to address emissions were straightforward to define once identifying the four high-impact operational activities. The team drew on their own experience and/or knowledge of evolving approaches in the field of climate action. Collaboration with campus stakeholders as described in Table 1 and the consulting work by CFR further developed, validated, and made clear appropriate timing for specific steps.

Balanced approach

Strategies are to expand electricity from renewable sources; continuously improve energy management; manage emissions from the campus boiler plant; acknowledge and address education abroad emissions; and develop a program for responsible institutional air travel. This plan seeks to balance institutional responsibility for efficient campus buildings and systems with opportunities to show leadership in markets and the greater public sphere. The team recognizes that certain fossil fuel-based activities, including flights for education abroad and athletics competition, are critical to the college mission. Accordingly, the plan advises policy and practice changes to prioritize emissions reductions in associated flights to the greatest practical extent, and also investing in mission-aligned carbon offsets to account for the emissions impacts that will inevitably remain.

Another dichotomy that emerges from plan strategies is reduction strategies that are seen and unseen by the campus community. The strongest example of this concept is that the majority of emissions reductions will be achieved through an off-site power purchase agreement for campus electricity. Ensuring that the campus community and visitors experience tangible reminders of the institution's broader climate action was one of the drivers to including additional and highly visible on-site solar as a tactic. Messaging around that renewable energy installation, as well as tied to other more community-facing activities like air travel, should consistently remind stakeholders of the less visible impact Davidson is achieving through its CAP commitments.

Strategy details including more specific tactics and timeline are outlined in Appendix D.

Accountability for Plan

The decision to develop an aggressive, focused, short-term (5-year) plan was made in part to drive accountability for its execution. Many long-term plans, particularly climate action plans with multi-decadal implementation horizons to carbon neutrality, suffer from turnover of the individuals who were its original authors and champions. Appendix D outlines the position responsible for each tactic. Even more helpful, it is quite possible that most or even all of the individuals currently in those roles will remain so through its five-year timeline, and will bring their institutional knowledge to bear on its successful rollout.

While individual positions bear responsibility for specific tactics and many actions fall within the oversight of the Vice President for Finance and Administration, the CAP is and should be represented as a collective priority and point of pride. Support from across divisions of the college will be key to its successful execution and to demonstrating to prospective and current students, faculty and staff, alumni, and other stakeholders that Davidson is doing its part to curb global climate change.

To support implementation and collective engagement, the President and Senior Leadership Team will receive an annual update on plan progress and any modifications. The Board of Trustees will be made aware of the CAP and receive additional reports at their request.

Acknowledgements

The CAP team would like to thank President Quillen and SGA for their interest in and support of this effort. The input of Naomi Otterness, Philip Jefferson, Chris Clunie and Mark Johnson was critical to developing a plan and messaging that represents their areas, and we look forward to collaborating with each of them in coming years. Second Nature and CustomerFirst Renewables provided invaluable technical assistance. Charlene Minor, Nora Barger, and Raul Galvan '21 were steady, fun and insightful fellow travelers in taking on such dauting work in the throes of a global pandemic. Student and alumni voices have been key to articulating the relationship between Davidson's values and the call for climate action; we hope that this plan and its successful execution will make you proud.

Acronyms

Acronym	Definition
ACUPCC	American Colleges and Universities Presidents' Climate Commitment
CAP	Climate Action Plan
CFR	Customer First Renewables
GHG / GHGs	Greenhouse Gas / Greenhouse Gas Emissions
IHEs	Institutions of Higher Education
SGA	Student Government Association
SIMAP	Sustainability Indicator Management & Analysis Platform

Appendices

Appendix D. Climate Action Plan Strategies

Goal: Davidson College is doing its part to curb global climate change.

Objective: Reduce institutional greenhouse gas emissions 50 percent from 2008 levels by 2026.

Strategy 1: Expand Electricity from Renewable Sources
GHG Impact Area: Purchased Electricity
Tactic, Responsible Parties and Timeline:

- Signal to Duke Energy and other stakeholders institutional interest in the utility's transition to renewable sources, Dir. Fac Mgmt / Dir. Susty / VPFA, FY21-25
- Add visible, on-campus solar panel installation with signage about off-site renewables, Dir. Fac Mgmt / VPFA, FY23
- Study and negotiate renewable energy procurement, Dir. Fac Mgmt / Dir. Susty / VPFA, FY21-22
- Activate contract to procure 100% of campus electricity from renewable sources, Dir. Fac Mgmt / VPFA, FY25

Strategy 2: Continuously Improve Energy Management
GHG Impact Area: Purchased Electricity, On-Campus Stationary
Tactic, Responsible Parties and Timeline:

- Continue annual Sightline analysis, Dir. Fac Mgmt / VPFA, FY21-25
- Continue LEED certification for all new construction and major renovation, Dir. Fac Mgmt / VPFA, FY21-25
- Evaluate energy performance options using internal or external resources, Dir. Fac Mgmt / Dir. Susty / VPFA, FY23
- Evaluate and enforce energy behavior management policies, Dir. Fac Mgmt / Dir. Susty, FY24-25

Strategy 3: Manage Emissions from Campus Boiler Plant
GHG Impact Area: On-Campus Stationary
Tactic, Responsible Parties and Timeline:

- Maintain continuous service improvements to maximize system efficiency, Dir. Fac Mgmt / VPFA, FY21-25

Strategy 4: Acknowledge and Address Education Abroad Emissions
GHG Impact Area: Study Abroad Air Travel
Tactic, Responsible Parties and Timeline:

- Integrate climate impact outreach into education abroad messaging, Dir. Ed Abroad / VPAA, FY21-23
- Purchase carbon offsets for faculty-led experiences through program budgets, Dir. Ed Abroad / VPAA, FY23
- Identify a funding source to support mission-aligned carbon offsets purchase for all ed abroad travelers, Dir. Ed Abroad / VPAA, FY24-25

Strategy 5: Develop a Program for Responsible Institutional Air Travel
GHG Impact Area: Directly Financed Air Travel
Tactic, Responsible Parties and Timeline:

- Reduce and offset emissions associated with athletic team air travel, Athletic Director, FY23-24
- Adjust institutional practices to gain better data on college-funded air travel, Dir. Susty / SLT, FY22
- Develop a stakeholder-driven strategy that considers climate damage in institutional decision making about air travel, Dir. Susty / SLT, FY22-23