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Colby College Sustainability Overview 2017-18

Colby College

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2017-18 Sustainability Overview

Campus Sustainability Program Recognition

Colby's sustainability program has continued to earn accolades that affirm and reflect the College's commitment to sustainability in both academics and campus operations.

The Association for the Advancement of Sustainability in Higher Education (AASHE) STARS Rating System is the premier framework for evaluating campus sustainability. Colby currently has a Gold STARS rating and was ranked highly in the 2017 AASHE Sustainable Campus Index, earning second place for Grounds, second place for Air and Climate, and fourth place overall for baccalaureate institutions.

Colby received Marks of Distinction from the Second Nature Climate Leadership Network, an initiative that recognizes a select group of signatories that set high-performance goals, and demonstrate and report measurable progress towards those goals.

The Environmental Protection Agency recognized Colby as a Green Power Partnership 100 percent Green Power user and the NESCAC Conference Champion in the Green Power Partnership College and University Challenge. Colby was also recognized by the EPA Food Recovery Challenge for our significant increase in food waste diversion, which was achieved through improved composting initiatives and infrastructure on campus.

Colby earned a top spot on the Princeton Review Green College Honor Roll as one of only 24 schools nationally to earn the highest possible score of 99 points. Colby was also ranked third among the Princeton Review's Top 50 Green Colleges. The Chronicle of Higher Education ranked Colby forth among all baccalaureate institutions in their top-performing institutions for sustainability.

In addition to these more traditional academic rankings, Colby received recognition from several online publications. Niche.com ranked Colby twentieth for Best Colleges for Environmental Science in America among all colleges and universities in the country, CollegeChoice.net ranked Colby seventeenth for Best Environmental Science degrees among all colleges and universities, and CollegeMagazine.com recognized Colby as first on their list of Top Ten Eco-Friendly Colleges.

Campus Engagement

EcoRep Program

The student EcoRep program is in its fifth year and in fiscal 2018 the team contributed over 1,100 hours to promote sustainability action on campus. Twenty EcoReps were engaged throughout the year performing two major functions: (1) promoting sustainable living habits among their peers; and (2) planning, managing and executing student-focused sustainability projects to generate environmental discussion and action across campus. The following are some highlights from the year.

Sustainability Scavenger Hunt: During JanPlan the EcoReps held an Instagram-based sustainability scavenger hunt to keep the community engaged during this quieter time on campus. Each day of the week-long challenge, participants were tasked with finding and photographing a sustainability-related item on campus including a reusable water bottle, a compost bin, the biomass plant, and three of our 15 LEED-certified spaces.

kNow Your Waste: This student team worked to reduce waste on campus through peer education, conducting a waste audit in one of the residence halls to assess recycling rates, holding tabling events, and developing new signage to teach students about common recyclable and compostable items. In a new initiative, they also distributed compost bins to residents in the Alford Apartments on campus, where students composted 3.5 tons of food waste during the academic year

Earth Day: This year, the EcoReps collaborated with other student organizations including The Bridge, Colby Alliance for Renewable Energy (CARE), EnviroCo, and the Outing Club, to host a week-long Earth Day celebration. This partnership allowed for a diverse range of sustainability-related offerings to engage more of the campus community. Events included tabling about composting and conservation, a tour of the biomass plant, a screening of the film *Racing Extinction*, a freecycle clothing swap, hiking Mount Phillip, fly fishing lessons, a local food dinner, trivia, t-shirt screen printing, and a sustainability fashion show.

State of Sustainability Panel

The Colby Alliance for Renewable Energy (CARE) a student group focused on advocating for a sustainable energy future, hosted a State of Sustainability at Colby panel discussion in early May. Panelists included Mina Amundsen, assistant vice president for facilities and campus planning; Sandy Beauregard, director of sustainability; Douglas Terp, vice president for administration and chief financial officer; and Paul Ureneck, director of commercial real estate. Students in attendance were eager to learn more about past and current sustainability initiatives, Colby's carbon neutrality, the endowment as it relates to sustainability, campus energy use, waste, and sustainability on Main Street.

Campus as a Living Laboratory

During fiscal 2018 the Office of Sustainability continued to identify opportunities to connect academics with operations to create a living laboratory environment on campus. During the spring semester, students in the Joules to Dollars course analyzed the energy performance of the Schair-Swenson-Watson Alumni Center, compared the performance to what was expected when the building was built, and identified opportunities for improvement. In another academic collaboration, two students in the Environmental Studies GIS class analyzed GPS data from the Jitney and Colby Shuttle to help assess local transportation needs of the campus community. They used the GPS data along with ridership numbers to identify high-demand locations, assess overlap between the two services, and developed alternative shuttle routes that would serve downtown as well as other popular destinations in Waterville. This project will continue through the fall to support possible adjustments to the various transportation services provided by the College.

New signs have been installed across campus to educate the community about the College's sustainability initiatives. The signs highlight initiatives in four broad categories of sustainability: Energy, Transportation, Land, and Resources. Featured projects include the biomass plant, the athletic fields at the Outdoor Competition Center, organically managed native plant landscapes, the solar array on the roof of Schair-Swenson-Watson Alumni Center, and the geothermal systems at Davis Science Center and Schair-Swenson-Watson Alumni Center.

Operations

Compost Collection in Events Spaces

In fiscal 2018, Facilities Services expanded the compost collection program by placing compost bins in all of the spaces on campus where events are commonly held. In addition to food waste, all of the disposable serviceware provided by Colby Dining Services is compostable. This initiative led to a significant increase in total composting on campus as 354 tons of compostable material was diverted from the landfill, 137 tons more than was diverted in fiscal 2017.

In conjunction with this effort, the Office of Sustainability held an information session about composting and single stream recycling for custodial and grounds staff. The success of our composting and recycling programs largely depends on these two departments, so it is important that they have the tools and information needed to succeed. We continue to refine the process and solicit feedback to ensure the program is meeting the needs of student, faculty, staff and the campus community as a whole.

Greenhouse Gas Emissions

Fiscal 2018 Greenhouse Gas Emissions Breakdown

Figure 3 depicts the proportion of remaining GHG emissions from the fiscal 2018 inventory. Heating fuels comprise the largest amount of emissions, at approximately 45 percent. College travel comprises 26 percent of the remaining emissions. Air travel is the largest contributor and makes up 96 percent of this category. Commuting forms the third largest share of the College's emissions and comprises 21 percent of the total. As the college population grows, commuting is expected to contribute an increasing portion of our annual greenhouse gas emissions. A commuter survey conducted in the fall of 2014 helped quantify commuting emissions. An updated transportation survey is planned for fiscal 2019, which will refine these emissions calculations and inform commuter greenhouse gas reduction strategies moving forward.

Colby is seeking to further reduce emissions by implementing efficiency measures in new and existing facilities, evaluating renewable energy installations and exploring methods to reduce transportation-related emissions.

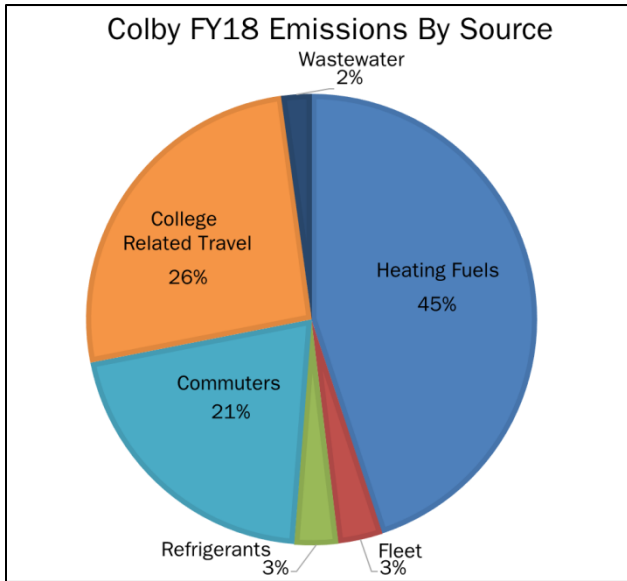


Figure 3: Colby College GHG emissions breakdown for fiscal 2018

Campus Greenhouse Gas Progress

The following chart shows Colby's greenhouse gas (GHG) reduction progress since 2000.

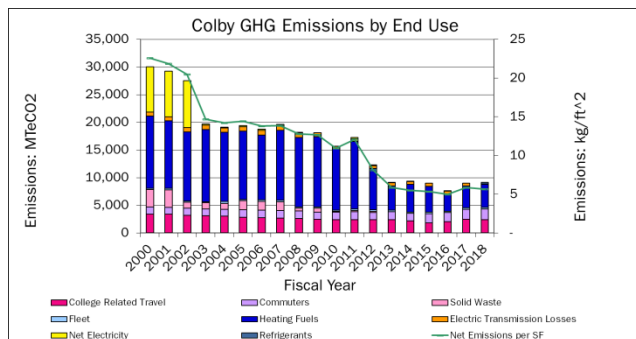


Figure 1: Colby College GHG Emissions progress since 2000

Major reductions have resulted from the purchase of renewable electricity in 2002, the opening of the biomass plant in 2011, the purchase of carbon offsets beginning in 2013, and regular investment in energy conservation projects. More information on these is included in the next section.

Fiscal 2018 emissions were 8,880 MTCDE, a decrease of 4 percent compared to fiscal 2017. This reduction is primarily a result of the New England regional electric grid becoming greener. This affects our emissions related to electricity transmission and distribution, which are not covered by our green power

purchases. These emissions were offset through the purchase of carbon-offset credits (Figure 2).

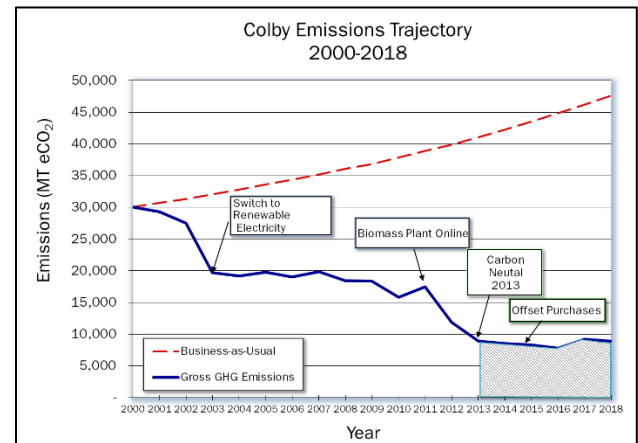


Figure 2: GHG emissions trajectory

Carbon Offset Details

The College evaluated proposals from 14 national and international offset projects that attained third party certification, met the College's environmental and social goals, and were priced competitively. In fiscal 2018, an effort was made to align the carbon offset project benefits with the United Nations Sustainable Development Goals. Projects were evaluated based on their impact on biodiversity, climate adaptation, the local economy, education, job creation, water resources, financial security, food security, health, infrastructure, and empowerment of women. Colby purchased carbon offsets from five locations.

The first, a household and agricultural biogas program in Vietnam, prevents the release of methane into the atmosphere and provides organic fertilizer for agricultural use. Methane has a global warming potential 21 times greater than that of carbon dioxide. Additionally, the project benefits span 10 of the 12 sustainable impact categories.

The second, a project in Malawi, combines forest protection and the distribution of clean cookstoves that improve indoor air quality and increase fuel efficiency. The remaining three projects aim to conserve more than 2.1 million acres of important forest ecosystems in the Amazon, Madagascar, and the Lower Mississippi Alluvial Valley in the United States.

While the College will invest in carbon offsets to maintain its carbon neutral distinction, Colby will also continue to implement energy conservation projects, enhance recycling and composting efforts, and explore other greenhouse gas reduction projects on campus.

Fiscal 2018 Key Sustainability Indicators

Energy

Since 2000, Colby has realized a substantial reduction in its energy consumption—18 percent in weather-normalized energy consumption per square foot. Figure 4 shows the weather normalized energy use per square foot from 2000 through 2018. The energy data have been corrected for heating degree days to allow comparison from one year to the next. In reviewing the data, there is a small anomaly from 2004–2006, when the Colby Green was created, adding significant exterior lighting without any corresponding increase in campus square footage. Since then, consumption has decreased with the construction of more efficient buildings, renovations, and upgrades to individual building systems.

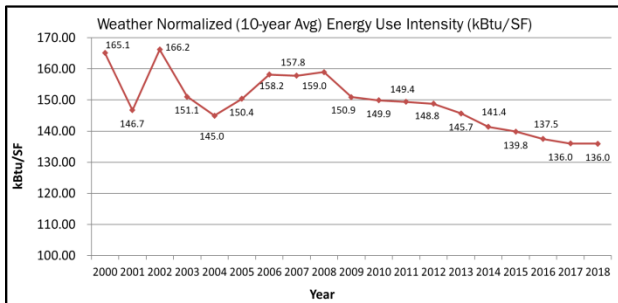


Figure 4: Weather-normalized campus energy consumption per square foot since 2000

Further efficiency gains stem from the beginning of Colby’s Energy Management program, which aims to reduce energy consumption by 20 percent per square foot over the next six years, using fiscal 2014 as a baseline. In terms of total energy consumption, without weather normalization, the goal is to maintain campus energy consumption, inclusive of campus growth over the same time period. The current levels of physical and population growth were not anticipated at the time this goal was established.

Figure 5 displays the total energy consumption by utility type. In fiscal 2018 energy consumption increased by 3 percent compared to fiscal 2017.

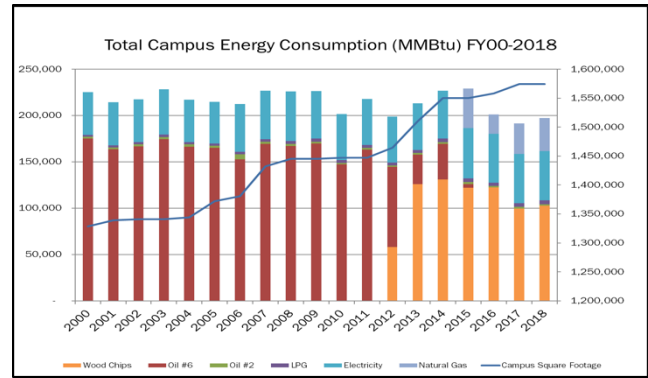


Figure 5: Total campus energy consumption by utility type since 2000

Water Consumption

Figure 6 displays total potable water consumption since 2005. Water consumption increased in fiscal 2017 as a result of construction on campus and increased watering for newly installed fields and plantings. While total water consumption remained higher than previous years in fiscal 2018, water consumption per person decreased.

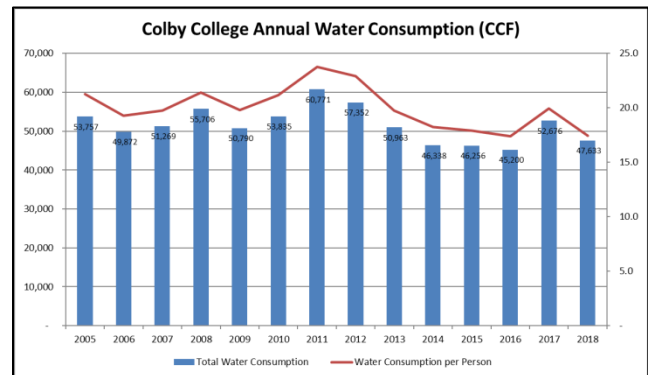


Figure 6: Campus water consumption since 2005

Looking Forward

As transportation becomes an increasing portion of the College’s greenhouse gas emissions, the Office of Sustainability will focus on a number of initiatives that address this issue. A transportation survey will be conducted to better quantify commuter emissions and help identify transportation needs on campus. This information will be used to develop and adapt low-carbon transportation strategies that meet the needs of the campus community. This includes the Colby Shuttle, which connects downtown Waterville with the Mayflower Hill campus. The Office of Sustainability will also support the launch of the GoMaine commuter carpool program on campus and improve electric vehicle charging infrastructure. For the latest green news at Colby, visit www.colby.edu/green.