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**Introduction:**

We agreed that climate change is an existential threat to modern human life, and that Williams College has a role to play in fighting climate change through reducing its own contribution to global warming and through educating our students regarding the threat it poses to human wellbeing and to the natural environment. To this end, we recommend the College be very aggressive in pursuing policies that reduce emissions, prioritize energy efficiency and promote conservation. Undertaking aggressive steps will require all of us to consider how we live and work on the campus: Do we need to recalibrate our priorities when making decisions about the College infrastructure and operations? Are there behavioral changes that will have a significant impact on emissions, waste and sustainability? How do we educate/inform the college community to facilitate such changes? While we focused (as subcommittees) on emissions reduction, waste reduction and sustainable food, the importance of changing the culture and increasing awareness was included in the course of our discussions.

**Emissions Reductions:**

We discussed how offsets can help in the fight against climate change and people's ethical and practical concerns about offsets. There was a spectrum of opinions within the group regarding whether we should purchase offsets. We considered the level of "quality" to seek in carbon offsets to be purchased for the College's plans to go carbon neutral. We discussed issues of offset verifiability, locality and additionality at great length.

We considered an "internal carbon charge" wherein organizational units would have limits on their emissions, allowing some units to pay more to emit more and others to be compensated to emit less; but we shelved this idea because of concerns about fairness, implementation issues, and possible effects on the mission of the school.

The potential benefits of campus-wide planning or conceptual guidelines in construction and renovation projects were discussed. In so doing, we considered the challenges associated with such plans given that priorities shift and can render any rigid plan obsolete. However, we were convinced that no careful transition from fossil fuels can be made without requiring construction and renovation to fit into a long-term picture of campus environmental sustainability. We also discussed tradeoffs between historical and cultural values of buildings and their energy efficiency.

**We formulated the following recommendations regarding emissions reductions:**

1. We strongly recommend that Williams set a longer term goal to complement shorter term goals. We suggest an 80% reduction below 1990 levels by 2050, the target established by the state of Massachusetts. As we approach the end of our short-term (2020) plan, the College should generate sequential follow-on plans with similar short time horizons, so that we are continually working within both a short-term and long-term plan.
2. We strongly recommend that emissions be priced into all future renovations and construction. One way to do this would be to commit to buying emissions offsets for all emissions we generate in the future.
3. We are concerned about the verifiability and additionality of offsets we purchase or perhaps even those we generate ourselves. Therefore, given that the College will be buying offsets as part of our carbon neutrality plan, we recommend that the College put a high priority on buying offsets that are additional and verifiable, and as such it should require certifications that are considered very good or the best in the industry (i.e., following criteria/standards set by third parties such as the "Living Building Challenge"). We see value in having as many locally produced offsets as is feasible, as long as they meet the criteria needed for certification. But we also recommend that the College in general and CEAC in particular continue to re-review the College's offset purchases in each future year to ensure that they are consistent with our goals.

4. We recommend that the College identify and implement a revised set of planning/decision guidelines with regard to the campus physical infrastructure, particularly the renovation and replacement of buildings. In effect, we suggest weighting the environmental costs as well as the historical and cultural value of a building when considering whether to renovate or replace it. If this recommendation is enacted the College should assemble a panel to study the historical and cultural values of buildings on campus so this can be factored in to the decision.
5. Similarly, we recommend that the College make every effort to maintain or reduce building space (sq. ft.) when undertaking construction/renovation projects (“build one, blast one”), considering that emissions could be reduced if unnecessary square footage is removed or not built redundantly. (One caveat to this notion: the idea was posited that the College could add additional space if it were to serve as “swing space” during a series of renovation/construction projects such that the pace and frequency of projects could be sped up.) It may be helpful for the College to undertake a study to identify underutilized space on campus, and repurpose such space if possible.
6. We recommend that a longer planning horizon be used for physical infrastructure decisions, since buildings on campus may remain for fifty or a hundred years. This plan need not have specific dates, but should allow consideration of tradeoffs that are more holistic and that allow us to make more long term goals. We further recommend that infrastructure decisions be made in the context of a campus plan. For example, in the plan we might set a horizon for a year by which the campus should not be reliant on central steam heating; such a plan must be set at the campus level because it would have an impact on any building-related decision.
7. We suggest that Facilities conduct a study of the prevalence of and energy use associated with space heaters in offices on campus. If they are found to be a significant source of emissions, we suggest that a survey of campus community members be done to find ways to reduce space heater use while respecting users’ needs.
8. We suggest that students be educated on the environmental merit of new, more energy-efficient dorm refrigerators (perhaps after a study of relative efficiencies of different technologies), and be encouraged to use them instead of more energy intensive compressor-based refrigerators. Relatedly, we suggest that large refrigerators with locking compartments (commercially available) be considered for common use, in hopes that fewer students will feel the need to have their own less efficient units.

### **Waste Reductions:**

The College is tackling waste reduction on many fronts, and many of us new to the committee were impressed with the broad scope of activities undertaken by Facilities, Dining Services and the Zilkha Center. Some of these recommended actions are in planning stages or already in progress but we wish to see them supported and expanded.

### **We formulated the following recommendations regarding waste reductions:**

1. Existing efforts by Dining Services to reduce pre-consumer waste (via “LeanPath”) and donation of surpluses to a local food pantry are to be applauded. We encourage Dining Services to continue and expand such efforts, and consider “testing” more aggressive efforts: for example, decreasing the varieties of some offerings (e.g., cereal types), limiting purchases of produce that are not in-season, and centralizing some meal offerings to one dining hall to reduce waste. To note, a post-consumer waste analysis is planned to identify the most wasted items.
2. We recommend the installation of “compostable materials” receptacles in every restroom/bathroom in academic buildings and residences for paper towels, tissues, etc., since these items account for the majority of waste generated in these locations. There may be other locations (e.g., kitchens?) where collection of compostable materials, including compostable coffee cups, would yield benefits. Ideally, these compost bins could be co-located with other waste receptacles.

3. We recommend instituting clear, explanatory and consistent signage on different types of receptacles across campus in order to maximize appropriate waste/recyclable/compostable disposal. While improving signage is underway, it may be helpful to view other colleges' executions of similar signage programs. Compliance with correct disposal of materials could be further improved by having students such as the Zilkha Center Eco Advisors in the dining halls for the first few weeks of each academic year to assist students in forming habits of correctly disposing of materials.
4. We recommend removing bottled water from campus outlets to encourage everyone to "drink local," simultaneously reducing plastic waste and fuel used in transportation. We also recommend discouraging use of K-cup coffee makers and encourage use of pour-over metal or paper filter units (Melitta) for single servings (or using re-usable "pods" for existing K-cup coffee makers).
5. Several modest efforts to improve recycling and reduce waste are recommended. Making available extra recycling (and waste) receptacles during student parties would increase recycling of bottles and cans while decreasing clean-up efforts. With the increase in online ordering, we recommend efforts to further promote greater cardboard and plastic recycling. Presumably, this would entail efforts to increase awareness of locations and procedures for recycling of cardboard and plastic and make it as convenient as possible. While e-waste is not typically generated in amounts requiring many waste bins, procedures and locations for e-waste disposal should be publicized.
6. We also support expanding the end-of-year "Give It Up" program (primarily targeting donations) to place receptacles for e-waste, recyclable and compostable materials outside dorms adjacent to storage "pods" so that as students are cleaning out rooms and packing/storing belongings they can easily and appropriately dispose of all types of waste items. We also suggest extending collection of various "difficult-to-dispose-of" materials (we mentioned e-waste, construction materials, carpet) to the larger community (town residents), but acknowledge potential logistical hurdles in implementing such a program.
7. If practicable, we recommend that efforts to assess the efficacies of waste reduction activities should be undertaken. For example, food waste audits (conducted during the academic year) carried out before and after implementing efforts to reduce food waste (recommended above) would allow us to quantify the impact of the changes. Similarly, dish return compliance and compostable material volume can be quantified using audits. In saying this, we recognize that the benefits of allocating resources toward reducing waste should be weighed against the sustainability benefits that might be obtained by allocating these resources in other ways. As mentioned above, a waste audit in the near future is planned.

### **Sustainable Food:**

The CEAC Sustainable Food Subcommittee decided to fold into the Food & Agriculture Planning Committee to avoid redundant efforts. This larger group considered what possible changes could be made to increase either the amount of sustainable food served on campus or the education that we provide to our students through the food we serve them. One of their primary recommendations includes focusing sustainable food purchasing in one dining hall in order to serve more meals that have all sustainable food while providing a stronger educational message. It is worth noting that Dining Services is pushing forward on several fronts relating to sustainability, waste reduction (see above) and opportunities for reducing emissions in the kitchens.

### **Changing College Culture and Raising Awareness:**

Ultimately, we want our students to leave Williams carrying with them an intellectual understanding of the threat imposed by climate change and the challenges in fighting it, but we also want our students to leave with a sense of personal responsibility to do "the small things" in their daily activities that will improve the environment. We can consider the pedagogical experience of the students and the behavior/culture on campus as two complementary facets of their educations.

Regarding behavior/culture on campus, we noted the difficulty of influencing emissions through behavioral change because 1) campus emissions are primarily determined by infrastructure and institutional choices rather than individual choices, and 2) members of the campus community do not feel that the institution has given high

priority to emissions reductions and therefore they don't feel obliged to make efforts themselves. While we view the apparent lack of urgency by the College as an impediment to individuals taking personal responsibility in reducing emissions, we see the same perception issue when considering waste reduction efforts as well.

Changes in culture and behavior will involve changes in our priorities and *vice versa*. Raising awareness of "environmentally positive" steps by the College and encouraging "buy-in" by the community are important in inculcating these cultural changes. We noted that there are many environmental initiatives happening on campus but they are often behind the scenes and not visible to community members. One point of consensus that frequently percolated through discussions was the desirability of having more visible communication of the various projects undertaken by Facilities to reduce emissions and improve energy efficiency and the many efforts by the Zilkha Center, Dining Services and Information Technology to reduce waste and improve sustainability.

**We formulated the following recommendations regarding college culture and raising awareness:**

1. There was widespread consensus that the College must maintain a concerted and continual effort to publicize its environmental initiatives to members of the community in order to effectively support beneficial environmental norms. Therefore, we recommend that the College devote additional resources (FTE) for publicizing relevant activities by Facilities and the Zilkha Center. The College should also consider providing a "permanent" square on the College home page highlighting environment activities (and linked to the Zilkha Center page) and having more public visual displays highlighting environmental activities and suggesting greener behavior that students and other members of the College community can adopt.
2. Considering next year's College-wide focus on climate change, CEAC should work with Communications to make green initiatives routinely known and felt throughout the campus. Therefore, we recommend that an individual from Communications be regularly involved with CEAC next year, and perhaps eventually be added to the statutory makeup of the committee.
3. We acknowledge the environmental value of the school's indirect effects on climate change through scholarship and pedagogy that we hope will have long-term, wide-reaching effects, but we suggest that more could be done. While outside the purview of CEAC we think it might be constructive for the appropriate College committees to consider some curricular mechanism for increasing environmental awareness by all students. For example, first-year students could be required to participate in a winter study course (or a "second course" during winter study) that would consist of seminars/lectures and other activities to highlight emission reductions and sustainability on campus, and to think how to be "greener" day to day. We recommend that appropriate College committees be consulted on this curricular matter. (Note that the committee was not unanimous in its support of this recommendation.)
4. This past year the emissions reduction subcommittee conducted a set of events intended to engage the campus community in the project of fighting climate change including the #SustainabilitySaturday Instagram feed, Sustainability Data Hacks, and a panel discussion about the College's climate policy. We wish to encourage more of these activities going forward as a way to reach more students and other members of the College community.