Campus Environmental Advisory Committee (CEAC)

2021-2022 Year End Report (May 18, 2022)

Committee Members: Temesgen Araya, Alice Bradley, Rita Coppola-Wallace, Mike Evans, Regina Falk, Sarah Gardner, Matthew Gibson, Sam Holmes, Nicolas Howe, Huijun Huang, John Kleiner (chair), Tanja Srebotnjak, Chris Winters

This past year CEAC pursued two projects:

1) The committee finished up its long-standing project of drafting recommendations on college travel and greenhouse gas emissions.
2) The committee began work on a new project: developing recommendations on landscaping and groundwork at Williams.

Travel and GHG emissions

CEAC began its work on travel and GHG emissions in 2019/2020. In the spring of 2021, the committee voted unanimously in support of a plan to cut for reducing emissions associated with college travel. In the fall of 2021, Dukes Loves asked CEAC to revisit its work. In particular, he asked the committee to give further consideration to two aspects of the plan: the "prebate" offered to faculty and the price per ton set for carbon emissions associated with travel. After two months of further deliberation, CEAC voted on a revised version of its plan. (See attachment A, "Draft: Reducing GHG emissions from college travel.") On November 16th CEAC presented its recommendations to the Presidential Advisory Group. On November 17th the same set of recommendations were presented to the faculty. At the faculty meeting, the proposal met with considerable criticism.

Following those meetings, a subcommittee of CEAC was formed to draft a new version of the Travel Emissions Reduction Plan that might win enough support from faculty and staff to be implemented. (This subcommittee consisted of Mike Evans, Matthew Gibson, John Kleiner and Tanja Srebotnjak.) Faculty and staff were invited to submit written suggestions, which more than 23 did. The subcommittee also met individually or in small groups with a dozen or so faculty and staff to hear their concerns in greater detail and to elicit recommendations for how the plan might be revised. An additional virtual town hall meeting was held on 2/28 and attended by about 25 staff and faculty members. Though individual staff and faculty expressed a wide range of reservations and proposed various suggestions for revisions, concerns about the plan fell into three main categories.

a) Difficulties administering it
b) The fundamental importance of work-related travel
c) Inequity

The subcommittee drafted two new proposals. These were presented to a meeting of college administrators including Maud Mandel, Mike Wagner, Eiko Siniawer, Dukes Love and Safa Zaki on May 16th.

Proposal 1 slows down the implementation process, creates more categories, and allows faculty a degree of autonomy in determining the size of their prebate. (See attachment B)

Proposal 2 more closely adheres to the priorities of the original proposal. (See attachment C)

The meeting concluded with the decision to launch an initial information-only program and to set up an implementation meeting before the end of the fiscal year. The meeting has been set for June 27, 2022 for Dukes Love, Eiko Siniawer, Safa Zaki, Michael Wagner, and Susan Hogan. Dukes Love is also planning to release an email outlining the new program in conjunction with the ECMP, which together aim to reduce the College's two main source of greenhouse gas emissions.

Landscaping plan and Management Practices.

Starting in January, CEAC resolved to devote its attention to the college's landscaping plan and management practices. After a session devoted to sharing various concerns about land use at the college, CEAC arranged a series of meetings with staff members and other interested parties. The meetings included a presentation by Stephanie Boyd on the leakage of plastic pellets from the artificial turf fields; a session in which Tim Roberts and Felicity Purzucky discussed the college's existing landscape management practices. And a session with Scott Henderson about design considerations. The Committee closed with a discussion on the lessons learned from the presentations and subsequent discussions and identifying potential areas of work—continuing and new—for next year's Committee.

ATTACHMENT A

Draft: Reducing GHG emissions from college travel

Campus Environmental Advisory Committee (CEAC): Temesgen Araya, Alice Bradley, Rita Coppola-Wallace, Mike Evans, Regina Falk, Sarah Gardner, Matthew Gibson, Sam Holmes, Nicolas Howe, Huijun Huang, John Kleiner, Tanja Srebotnjak, Chris Winters,

We propose that Williams implement a Climate Damage Charge for air travel, as sketched below. Employees would pay for the climate damage caused by their travel-related greenhouse gas emissions based on an estimate of the Social Cost of Carbon. The Climate Damage Charge would be offset to a certain degree by a prebate, i.e., a rebate for air travel GHG emissions that is awarded at the start of the fiscal year. After the prebate is exhausted by the traveler, subsequent Climate Damage Charges are charged to the faculty member's or administrative unit's accounts.

What is the reasoning behind a Climate Damage Charge?

The social cost of a flight has two components: i) private cost, e.g. airfare; and ii) external cost, e.g. damage done by heat waves in Chicago or increased flooding in Bangladesh. By standing in for external cost, a Climate Damage Charge would help employees consider the full social cost of a potential trip. For trips that employees value highly, benefits will exceed costs, even including the impacts on others represented by the Climate Damage Charge. It would be undesirable to discourage such highly valued trips. The goal is to deter trips for which benefits exceed private cost, but not social cost. Such trips might be worthwhile from an individual's perspective, but they make society worse off overall.

Efficacy

GHG reductions would depend on the responsiveness of faculty and staff travel demand to the amount of the Climate Damage Charge.

Equity

A Climate Damage Charge would treat all air travel-related GHG emissions equally and hence satisfy a fundamental notion of fairness. However, the impact of the policy would not be uniform across all employees. For example, some travel more than others and thus would pay more in Climate Damage Charges. But this form of inequality is desirable for several reasons. If there are diminishing returns to travel, employees or administrative units who traveled the most in the past have the most room to reduce emissions by changing their travel choices (such as switching travel modes, combining trips, eliminating trips, traveling virtually, etc.). Employees and administrative units who traveled the most in the past also have larger travel budgets and, therefore, a greater ability to bear the burden of the charge. A Climate Damage Charge would be respectful of employee agency. In making travel decisions, employees and units would choose the total charges they would end up paying.

How much?

The Climate Damage Charge would initially be equivalent to $52 per metric ton of carbon dioxide equivalent (MTCO2E). This figure is based on the Obama Administration's inter-agency working group on the social cost of carbon study. The college may adjust the Climate Damage Charge in the future taking into account new information on the societal impacts of progressing climate change.

Prebate

The college would also pay faculty and administrative units a prebate. For faculty the prebate would be based on the annual divisional research funding allocation using a conversion of $ per air mile and an average aviation GHG emissions factor of 90 grams of CO2 per Revenue Passenger Kilometer (RPK). Assuming a $3,000 research funding allocation, this would translate to a prebate of $181 per year per faculty, which is equivalent to 24,000 miles. For administrative units, the prebate would be based on the average number of miles flown by the unit between fiscal year 2017 and fiscal year 2019.

A uniform prebate for faculty would promote equity and ensure that vital trips do not become unaffordable, while the prebate formula for administrative units provides for greater flexibility in deciding how future air travel could be reduced. And because the prebate would be unrelated to an individual employee's travel, it would preserve the incentive to reduce emissions. All unused prebate funds will go straight into the faculty member's research funds and unit budgets and are not restricted to travel. After the first year of the policy the prebate would be supported by funds raised by the Climate Damage Charge.

At the end of the year, the college would compare total charges collected to total prebates paid out. Any excess funds would be devoted to greenhouse gas abatement on campus. Research has shown that spending the proceeds of a charge in the same domain as the problem it addresses tends to increase popular support (Ubbels & Verhoef 2006).

Education and Awareness

To advance awareness of the impact of air travel on climate change the program aims to offer opportunities to learn about the greenhouse gas emissions of hypothetical trips by plane, car, train, and foot and options to gauge the cost of a particular flight itinerary versus the prebate allocation. Such a preview would reduce uncertainty for all employees, and the theory of risk aversion predicts this will increase political backing on average (Stern & Stiglitz 2017).

Scope

The Climate Damage Charge would apply to all college-funded travel for which decisions are made by college employees. Affected groups would include staff and faculty from all units. Student travel that is arranged by employees, e.g., athletes, will also be included in the program. The college should avoid exceptions that would undermine both the efficacy and equity of the policy. Students could be offered the opportunity to pay the charge voluntarily when undertaking college-funded travel, potentially adding a pedagogical element to the policy.

Future adjustments

The college will periodically review the amounts of the Climate Damage Charge and the prebate and adjust them as necessary to achieve emissions goals.

Implementation details

The college will develop processes that enable employees to get an understanding of both the greenhouse gas emissions and Climate Damage Costs of a planned trip. For the program to be optimally effective, it is desirable that an employee see an estimate of the charge prior to making a travel decision, or the charge could not influence the choice. Depending on the platform used to search for flights, carbon emissions may or may not be directly available (they are available when searching for flights on Egencia and Google Flights). Various third party

online flight greenhouse gas emissions calculators exist and the college can recommend several that yielded reasonably consistent results. Employees who don't use Egencia will also fill out a short form to capture the trip's details, including origin, destination, all stop-overs, and class of service. The college will set up mechanisms for allocating the prebate to faculty research budgets and staff units. It will also calculate the Climate Damage Charge for each flight after it was completed and depending on what mechanism was used to book it. The employee then pays the charge out of divisional or other research funds, just as she would pay the cost of an airline ticket. It is important to note that all college-sponsored air travel will need to be documented with respect to origin, destination, any stop-overs, and class of service. Without full reporting, Climate Damage Costs cannot be accurately levied and this could serve as an incentive to circumvent air travel reporting.

ATTACHMENT B – Proposal 1

Reducing Greenhouse Gas Emissions from College-sponsored Air Travel Proposal

Policy elements

A Climate Damage Charge

A Climate Damage Charge is a tax or fee paid for each ton of GHGs emitted. The Charge is based on the Social Cost of Carbon (SCC) concept, which is an estimate of the economic costs, or damages, of emitting one additional ton of carbon dioxide into the atmosphere.

Climate Action Dividends

The college would pay Climate Action Dividends at the beginning of each fiscal year. Because the Dividend would be unrelated to an individual employee's or department's travel, it would preserve the incentive to reduce emissions.

Scope

The Climate Damage Charge would apply to all college-funded travel about which college employees make decisions. This includes staff and faculty from all units, as well as students whose travel arrangements are made by employees, e.g., athletes. Initially, only air travel is included.

Proposal

CEAC's initial proposal was critiqued by members of the faculty who saw it as inequitable and unjustly penalizing faculty who need to travel far and/or frequently due to their research, tenure track status, and institutional expectations. Taking these concerns into account, we propose the following approach to incentivize reductions in carbon emissions from air travel by:

- Beginning with a 2-year information-only program, we will provide all college-employed travelers and their departments with data on the carbon emissions associated with their college-sponsored air travel. The information will be further supplemented with associated climate damage figures using existing SCC estimates. During this phase, we will also provide assistance to travelers in the form of flight carbon calculators, tips on more sustainable alternatives to air travel and how to find climate-optimized travel itineraries using platforms such as Google Flights.
- Following the 2-year period and another consultation period, we will begin levying the Climate Damage Charge based on the SCC. The Charge would start at $56/MTCDE in FY25, a conservative estimate, and increase annually at the schedule calculated by the federal Interagency Working Group on the Social Cost of Carbon. The Climate Damage Charge would be accompanied by the Climate Action Dividend. For administrative and operational departments, the Dividend will be based on the respective department's average annual carbon emissions for FY17-FY19. Faculty will be able to opt into one of three Dividend levels of $120, $200 and $280 per year, respectively, based on their preferences and estimated air travel miles (the Dividends would be equivalent to flying approximately 15,000 miles annually, 25,000 miles annually, and 35,000 miles annually, respectively at the $56/MTCDE Charge level). Unused Dividend funds remain at the disposal of the department and faculty.

- The Climate Damage Charge and the Climate Action Dividend values would be reviewed every two years to take into account, *inter alia*, developments in the social cost of carbon estimation and in the effects of the program on air travel greenhouse gas emissions.

Strengths

- The proposal addresses faculty concerns about inequity by offering faculty to choose one of three generous Dividend levels.
- The initial 2-year information only phase of the program allows faculty and staff to become familiar with the carbon emissions associated with air travel and in identifying and availing themselves of options to reduce them (e.g., flying more efficient itineraries and aircraft, switching to trains where practical, and using virtual travel) before the actual Climate Damage Charge is implemented.
- The two-phase approach also allows for another consultation period and for adjusting the Climate Damage Charge and Climate Action Dividend portions of the program.

Limitations

- The three Dividend levels are very generous in that they exceed the actual Climate Damage Charges of the vast majority of travelers, which might limit the effectiveness of the program to reduce air travel related emissions.
- The currently proposed $56/MTCDE is on the low end of the social cost of carbon spectrum and, therefore, does not fully capture the full magnitude of climate damages incurred.

ATTACHMENT C -- Proposal 2

A college travel GHG policy commensurate with the climate crisis

As a benchmark for future efforts, this document sketches a policy commensurate with the severity of the climate crisis. Non-catastrophic paths in forecasts by the Intergovernmental Panel on Climate Change (IPCC) require worldwide net-zero emissions by 2050 and negative emissions (direct air capture) 2051-2100. Because poor countries cannot rapidly decarbonize, rich countries and institutions must take more ambitious action. A policy aimed at net-zero emissions by 2040 requires much larger emissions reductions than those envisioned under the initial CEAC proposal.

Policy elements

A Climate Damage Charge

A Climate Damage Charge is a tax or fee paid for each ton of GHGs emitted. Intuitively, during the travel planning process the Charge stands in for those affected by climate change.

Climate Action Dividends

The college would pay Climate Action Dividends at the beginning of each fiscal year. Because the Dividend would be unrelated to an individual employee's travel, it would preserve the incentive to reduce emissions.

Scope

The Climate Damage Charge would apply to all college-funded travel for which decisions are made by college employees. Affected groups would include staff and faculty from all units. Students whose travel arrangements are made by employees, e.g. athletes, might also be affected. All modes of travel would be included: road, rail, air and water.

Concerns

Efficacy

GHG reductions would depend on the responsiveness of faculty travel to the amount of the Climate Damage Charge and the Climate Action Dividend. This is unknown in advance, though it could be estimated from experiences in other institutions and jurisdictions.

Equity

The equity consequences of any climate policy are complex and likely to arouse strong feelings. A Climate Damage Charge has some desirable properties where equity is concerned. A Charge treats all travel-related GHG emissions identically because all do the same harm. Employees who travel more would face higher tax bills for “business as usual” travel, but would also be able to save the most by making changes. For example, changing from an old to a new airplane on a flight to Tokyo saves far more GHG emissions than making the same change on a flight to Florida. Remaining equity concerns can be addressed by providing additional funds (see Climate Action Dividends below).

How should we choose the Charge and the Dividend?

$200 is a reasonable initial Climate Damage Charge

Recent work suggests that the external social cost of a ton of emissions, often called the social cost of carbon (SCC), was roughly $125-$250 in the year 2020. Uncertainty should push us toward a higher price, because emissions cannot be cheaply reversed if climate damage proves worse than expected. An initial Climate Damage Charge of $200 would be both consistent with the best new research and adequate to the severity of the climate crisis. The Charge should increase by 3% per year in real terms (3% plus the rate of inflation) until it equals the cost of direct air capture.

Why the charge should equal the social cost of carbon

Suppose we were to adopt a price below the SCC. For example, let us imagine a $10 Charge and a college affiliate contemplating a $100 ticket that will result in 1 ton of CO2 emissions. She asks, “The cost of this trip is the $100 ticket plus $10. Is that worth it to me?” If the private benefits (to the affiliate) are greater than $110, then she will take the trip. Here is the problem. If the SCC is $200, then the social cost of the trip is $300. But the affiliate will take the trip if she values it in the range from $111 to $299, in which case her trip makes the world worse off. For concreteness, suppose the affiliate values the trip at $125. She is willing to pay the $110 cost and takes the trip. The benefits all accrue to the affiliate: $125. The total social costs are the ticket price plus the SCC: $100+$200. The world is worse off because social benefits minus costs are negative. While this amount is denominated in dollars, it includes human mortality.

Why the SCC is a floor on a defensible charge

- Estimates are built from the bottom up: economists try to measure as many bad climate effects as they can and add the costs. Some bad effects, e.g. biodiversity loss, are extraordinarily hard to measure. Others are simply unknown to us.
- Most estimates reflect exponential discounting, which substantially down-weights harm to future generations. For example, under a 3% discount rate a $100 loss occurring 75 years from now would add only to the SCC. Most estimates rely on higher discount rates than theories of justice (e.g. Rawls' veil of ignorance) would imply.
- SCC estimates value the lives of the poor less than the lives of the rich.
- A Charge equal to the SCC delivers efficiency. Efficiency merely puts a cap on the transfer from poor to rich, requiring that the benefits to the college be at least as great as damage to others. It gives no answer to the question, “Why are we allowed to transfer well-being from the poor to college affiliates at all?” Taking theories of justice seriously would result in a price substantially greater than the SCC.

Climate Action Dividends

The particular Dividend is much less important than the Charge chosen. All else equal, the college should opt for a lower Dividend, as a high one risks increasing GHG emissions. Dividends should not increase over time. Unforeseen or undesired impacts of the Charge could be addressed by providing additional Dividends from a discretionary fund. Administrative units should receive a Dividend equal to the climate damage charge multiplied by 95% of average emissions in the last three pre-pandemic travel years. Faculty Dividends aroused controversy and there are many reasonable approaches. Here are two. 1) Each research affiliate could receive an equal share of expected revenue from the Charge. 2) The college could adopt a multi-tiered scheme in which faculty with distant research foci self-certify via an online form and receive a higher Dividend.