Climate Action Plan Task Force Policy Announcement:

Dear colleagues,

The Sustainability Working Group is finalizing Whitman's Climate Action Plan (CAP) for consideration by the Board of Trustees. The CAP is a roadmap to reduce and offset greenhouse gas emissions over the next several decades. Climate neutrality will be achieved through a mix of energy efficiency, renewable energy generation, and behavior change. As part of this effort, the CAP seeks to establish universal thermostat set points for the campus. The goal is to balance comfort, energy conservation, and emissions reduction.

The Working Group proposes initiating central set points Friday, April 22, 2016 (Earth Day). The current 70F heating set point will go unchanged. The cooling set point will rise two degrees to 76F. Specialty spaces for artistic, athletic, laboratory or archival uses will remain at current settings. Our goal is to provide temperatures within a two-degree window on either side of those set points. The Physical Plant will work to ensure that no space should fall under 68F or exceed 78F while occupied. This window exists because of characteristics that impact accurate climate control in certain spaces. These best practices were drawn from the Department of Energy and other institutions.

Changing our thermostat set points can make a measurable contribution to Whitman's sustainability efforts. These changes will reduce energy consumption and pollution. Each one-degree move saves an estimated 1% of the heating or cooling energy.

We recognize the potential conflict between conservation and comfort. Keep in mind at current settings many of us are not comfortable one way or another. **If you do NOT want your set points altered from current levels, contact Tristan Sewell, Sustainability Coordinator at x4439 or sewelltt@whitman.edu, or anonymously via your Division Chair or supervisor.** Please opt out rather than create your own heating or cooling solution for your space.

The Working Group will track the effects of this effort to determine its outcome. We are hopeful that there are no major objections to this effort and want the entire campus to take part.

Additionally, soon we will request information on building occupation schedules. Reducing hours of operation has a greater impact than thermostat settings. Our goal is to reduce emissions without compromising scholarship at Whitman. We recognize the possible conflicts of balancing access for academic pursuits with conservation efforts. Again, specialty buildings with distinct needs will likely remain untouched. We want to investigate opportunities for delayed building morning startups and earlier evening shutdowns.

For more information on the CAP, please see our website or contact one of your representatives. Faculty representatives: Kurt Hoffman, Tom Knight, and Amy Molitor. Staff representatives: Tristan Sewell and Victoria Wolff.

Thank you in advance for your attention, understanding, and participation.

Tristan Sewell and Tom Knight

Analysis of Potential Thermostat Policy:

Utilizing a setpoint of 65F at Whitman College from 1997 to 2016 there have been on average 4,960 heating degree days (HDD), and 1,017 cooling degree days (CDD). Within the last decade there has been a gradual trend with a decrease in HDD, and an increase within CDD. This is shift is especially evident within the months of September, May, and June. Given the significance of this shift and the instability in forecasting it is difficult to successfully optimize the energy efficiency of our HVAC systems within these months. While this is the case it should be noted that these months provide the greatest potential for energy savings if we aggressively provide a strong delta in all building setpoints. (i.e. those recommended by AASHRAE of 68F for heating, and 77F for cooling)

Historically for FY14, FY15, and FY16 we have observed a 90.2% relationship between our natural gas utilization and HDD. This is due to the primary source of building heat being dependent upon natural gas fired sources. (i.e. traditional HVAC systems, and the steam plant) On the other hand we have seen a minimal relationship between cooling degrees days and electrical usage. This relationship shows an 18% relationship between CDD and total electrical usage. Given this observation it is evident that our greatest potential for energy savings and cost avoidance is currently in the heating of our buildings.

While there is potential for cost avoidance given the current market this savings would be minimal. Within the last two years natural gas prices have been at there lowest in recent history. Projections released in the 2016 International Energy Outlook, and those presented by the US Energy Information Association show increases projected for the price of natural gas. If markets and weather models withstand there will be a slight increase in natural gas costs for FY17 and FY18. If implemented a campus wide institutional setpoint would result in a minimum $10,000-$30,000 in cost avoidance for FY17 and FY18. (This is on-par with those presented by University Mechanical)

While minimal cost savings are evident the policy would have implications on life cycle costs of our building systems, and would result in a decrease in our campus emissions. The blow back from this policy would likely result in increased plug loads due to personal space heaters. The General Service Administration has adopted setpoint policies within federal owned properties. As evidenced within their research they have seen decreases in heating costs due to these changes. It should be noted within occupant comfort studies that these changes have resulted in 60% respondent approval , and 22% respondents reporting that they were neutral to the policy. (GSA, Energy Savings and Performance Gains in GSA Workplaces, 2015)

It is recommended the institution adopt a set policy for all campus buildings with limited exceptions for laboratory spaces, and residential spaces. Within this space it is recommend that the user have limited temperature control unless specifically required for experimental purposes.

Respectfully,

Brandon Bishop

Campus Sustainability Coordinator

Whitman College