# SUSTAINABILITY REPORT

**BUILDINGS AND GROUNDS COMMITTEE**

Brandon Bishop
Campus Sustainability Coordinator

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The following is an overview of some of the activities currently being conducted by the Office of Sustainability. If you would like additional information please feel free to contact Brandon Bishop at bishopbj@whitman.edu, or at (509) 522-4439.

**Campus Greenhouse Gas Emissions**

The last major greenhouse gas emissions inventory was conducted by the Office of Sustainability for FY2013. As part of the Climate Action Plan, the Office of Sustainability has adopted a process of conducting an annual audit of all utilities and greenhouse gas emissions. This allows the institution to develop immediate strategies for emissions mitigation while providing regular insight into building operations and ongoing campus retrofits.

As part of our preliminary 2016 Greenhouse Gas Inventory we have observed a 4.14% increase in our campus emissions from the original inventory conducted in FY2013. While we have not seen a decrease in our institutional emissions we have attained increased offsets through the purchase of renewable energy credits. In FY15 we were offsetting roughly 907.1 mtCO2e. In FY17 this will increase to 6,588.8 mtCO2e. Our emissions for FY16 were approximately 13,874 mtCO2e. After calculating our Renewable Energy Credits for the year our emissions stand at 12,967.3 mtCO2e. Due to campus renewable energy generation and the purchase of renewable energy credits we currently offset all of our campus electricity use.

The office is projecting a 2.5% increase in our institutional emissions for FY17. This is primarily attributable to the addition of the technology service building. We should observe some savings from the Olin Hall retrofit; but not enough to mitigate increases in our overall campus square footage. The addition of the technology service building will result in a minimum increase of 300mtCO2e (annually). Our current renewable energy credits for this year should allow the institution to offset around 42% of our campus greenhouse gas emissions for FY17. In order to reach the 50% reduction by 2020 we will have to increase our REC purchase rate. Originally, the campus was on-track to reach a 50% reduction in our greenhouse gas emissions for FY17; however, due to budget challenges the purchase of additional renewable energy credits has been delayed. It is a top priority of the College to offset all natural gas usage by the end of the next fiscal year.

Additional projections are showing another increase in our campus greenhouse gas emission for FY18. These increases are based on the energy modeling for the new dinning facility and the residence hall. In total we will observe a 970mtCO2 increase. A significant amount of this increase will be mitigated through the closure of North Hall. Additional reductions may be observed through changes to Lyman, Jewett, Prentiss, and Reid Campus Center. It should be noted that the inclusion of photovoltaic on the new residence hall and dining facility will mitigate a more significant increase in campus emissions.

**Campus Renewable Energy Generation**

As part of the Living at Whitman Initiative, the campus will be constructing 116kW of photovoltaic on campus. This will result in an increase in our green energy production of around 147,826 kWh annually. On average, the Bratton Tennis Center produces 26,449 kWh of green energy. These three facilities combined will produce around 174,275 kWh of electricity annually. In total these solar panels will offset roughly 1.1% of our campus electricity use. Additionally, they will prevent 122mtCO2e from entering the atmosphere annually.

In order to meet the goals of the Climate Action Plan we are currently exploring various options to accelerate campus adoption of renewable energy. Unfortunately, many of the state and federal policy incentives for construction of new renewable energy are ending within the next several years. That being said there are a wide variety of funding models and partnership opportunities for the increased use of renewable energy. We are exploring these options and will report additional information as it becomes available.

**Campus Sub-metering**

During this last summer sub-metering of Jewett Hall and Olin Hall was completed. This new metering is providing us with a better understanding of the energy and water use from Olin and Jewett Halls. With a baseline from these buildings we are able to calculate the cost avoidance of future retrofits projects. The metering within these buildings will help to justify and analyze potential projects funded from the Sustainable Revolving Loan Fund.

Over this summer, we are planning on the installation of sub-metering within another residence hall. In addition to providing us with much needed building data, this metering will allow us to develop conservation competitions amongst our residence life students. With two residence halls metered we are better able to facilitate competition programming and education. Currently, the residence hall being explored for our next sub-meter installation is Lyman Hall. The proximity of Jewett Hall and Lyman will provide a natural source of competition.

Additional sub-metering will be included within the new dining facility and residence hall. This inclusion will provide the campus with a significant amount of data on the performance of these new buildings. Additionally, this will enhance educational opportunities relating to energy and water use.

**Campus Set Point Policy**

In accordance with the Climate Action Plan we have completed implementation of the Campus Set Point policy. As part of this policy we have exempted the Library, the Hall of Science and the Health Center. These exemptions were made due to the sensitivity of materials such as books, archives, laboratory materials, and medical needs in relation to thermal stability. Additionally, a number of offices in Memorial Hall have requested an exemption from the set point policy. The second floor of Baker Center has received an exemption due to heat loss through the building's envelope. The Hall of Music has not been set to the campus set point policy due to technical limitations of its building systems. We have exempted Boyer House due to thermal comfort complaints. The technology service building has advised they may request an exemption from the policy. We are continuing to record requests for an exemption from the Set Point policy and will act appropriately.

Currently, around 79% of the campus has adopted the set point policy. The current level of adoption will result in a small reduction in our campus greenhouse gas emissions. Historically, for FY14, FY15, and FY16 we have observed a 90.2% relationship between our natural gas utilization and heating. This is due to the primary source of heat being dependent upon natural gas fired sources. We have historically seen an 18% relationship between cooling and electricity use. With the adjustment of our building set points from a standard of 72F for heating and 74F for cooling to a new policy of 70F for heating and 76F for cooling we should see a 1-2% reduction in our energy use. In addition to the positive environmental impact, this policy will result in a cost savings of $7,900-$15,000 annually.

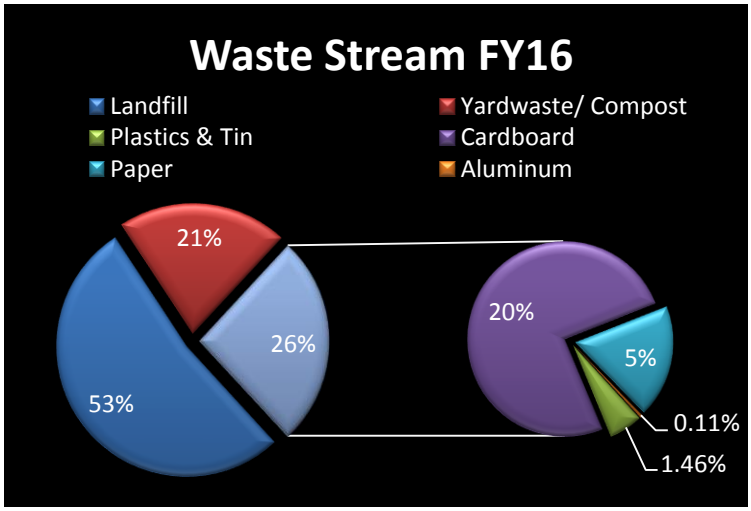
**Campus Waste Report**

Solid waste represents around 0.4% of campus emissions. The transportation and processing of waste is attributable to more emissions than the carbon emissions reduced by the diversion of landfill waste. There are major environmental benefits to the program; however, the program cannot be classified as sustainable. Various options have been reviewed in an effort to increase the effectiveness of the program. However, due to the nature of the commodities market, limited storage, and our rural setting we are unable to meet a higher environmental standard.

- Landfill Waste: The current cost of municipal landfill disposal is $82.80 per ton. The city has increased the landfill tipping fee this year to $85.30 per ton. Under the current landfill rate our annual waste disposal costs are roughly $11,784. Currently, the institution spends $57.90 per ton to compost yard waste. This is at

a total cost of $3,218 annually. This year the landscape team has mitigated some of the disposal costs associated with this year's yard waste by providing yard waste to farms.

- Recycling Waste: Currently, the recycling program earns roughly $2,305 annually from the sale of paper, cardboard, and aluminum. We currently divert about 27% of campus waste from entering the landfill. The program costs the institution roughly $27,500 annually to operate with a cost avoidance of $5,934. The net savings attributable to this program are $8,239. Due to falling commodity prices and the impact of single stream recycling on the waste sector it is likely the revenue generated from the program will continue to remain low. Additionally, due to aging equipment and the new Washington wage laws, it is likely the cost of this program's operation will balloon within the next several years. Currently, an alternative is being examined whether the program should outsource recycling to Basin Disposal. This would result in program costs being reduced to $15,000 annually and a significant decrease in down time due to mechanical failure. As a result of this move our campus would observe a slight decrease in our carbon emissions from decreased transportation of waste. The Office of Sustainability is working with the city to reestablish glass recycling and advocating for an increase in composting services offered.




**Campus Utilities**

The Office of Sustainability is currently tracking main campus utilities as well as student trust property utility usage. In order to provide students, faculty, and staff access to main campus utility usage we are exploring a variety of energy management software. We are aiming for the implementation of this software in FY18. This will provide the office with the ability to provide a high level of analysis and accuracy

related to our campus utility usage. In the meantime, the office has been developing a database of campus utilities for internal use. It is the intention of the office to utilize this information to foster energy efficiency projects and collaborate with classes and student interns. Additionally, this data collection will allow the office to generate an annual comprehensive utility report.

**EPA Recognizes Whitman College as Green Power Partner**

Whitman College has been recognized by the Environmental Protection Agency (EPA) as a Green Power Partner for 2016. In addition to this general recognition, the College has been admitted to the EPA's Green Power Leadership Club (GPLC), a select list of businesses and higher education institutions that have achieved a 100 percent offset of electricity use through green alternatives. Whitman currently generates 26,547 kWh of on-site solar power and purchases 17,073,000 kWh of American Wind Renewable Energy Credits. These combined sources offset 100 percent of electricity use. Whitman is also in the running for additional awards from the EPA.

**Campus Transportation**

- Bike Share: In order to mitigate emissions from transportation the Office of Sustainability currently operates the Whitman College Bike Share. This free bike share is made up of 8 bikes that are rented to students through the library. In total, this last semester the bike share has had over 800 bike rentals. We are currently analyzing the usage of the bike share and are seeking funding sources for the continued operation of the program. In order to meet daily demand levels the bike share would need to have around 1 bike per 100 students. This would grow the bike share program from its current fleet of 8 bikes to 15 bikes. This program is currently used by a number of students, especially out of state and international students, for grocery shopping and for various commuting needs.

- Campus Transportation Survey: The Office of Sustainability, in conjunction with Institutional Research, has developed a transportation survey that will be released within the spring semester. This survey will look at transportation methods of faculty, staff, and students. This data will be utilized to assess transportation goals, and will be used to look at the long-term trends in campus transportation and campus emissions.

- Bike Friendly Campus: We are currently coordinating with the City of Walla Walla and the bicycle community to achieve a bike friendly campus status. The City of Walla Walla received bicycle friendly community designation from the League of American Bicyclist. Our attempt to receive a designation will assist us in analyzing the transportation trends of our campus and will assist us in other Sustainability rankings.

**Fostering Regional Partnerships**

The Office of Sustainability coordinates with a number of peer institutions and sustainability organizations. The organizations include the Washington Higher Education Sustainability Coalition, the Sustainability Partnership of the Northern Rockies, the Association for the Advancement of Sustainability in Higher Education, and the US Green Building Council. Through these partnerships we are kept aware of trends within the sustainability field and work with other institutions to advance our internal sustainability goals. We additionally attend meetings of the City of Walla Walla Sustainability Committee and provide insight and input relating to the overall sustainability goals of the region.

**National Rankings**

The Office of Sustainability is currently preparing our institutional report to the Association for the Advancement of Sustainability in Higher Education- Sustainability Tracking and Ratings System. This system is used by a number of national organizations (including the Princeton Review, the Sierra Club and various other AASHE partners) to provide the institution with a sustainability ranking. The finalized report is due to AASHE in March.

**President's Sustainability Advisory Committee**

We have begun to hold meetings of the President's Sustainability Advisory Committee and have been working on a number of issues related to the Climate Action Plan. The committee has been holding meetings each month.

**Student Clubs and Organizations**

In order to foster a strong working relationship with student organizations we have been holding regular meetings with student sustainability organizations. It is the goal of the Office of Sustainability to meet with each student Sustainability organization at least once a semester.

In addition to these activities the Office of Sustainability will be taking a number of students to the Washington Higher Education Sustainability Coalition Conference hosted at Gonzaga University this February. Whitman College is a current sponsor of this conference.

**Capital Improvements and Retrofits**

It is the intention of the office to increase participation within the capital improvement and retrofit process in order to foster continued consideration of sustainable features and processes. In conjunction with these goals the Office is currently developing proposals to utilize funds from the Sustainable Revolving Loan Fund to accelerate the adoption of LED lighting throughout the campus.