



WHITMAN COLLEGE

2018-2030 Zero Waste Plan



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Executive Summary

The Sustainability Committee of the Associated Students of Whitman College (ASWC) has developed the following Zero Waste Plan (ZWP) to prepare for the mitigation of 90% of Whitman College's generated waste by the year 2030. This goal will be approached by developing strategies and procedures that prevent the generation of unnecessary waste; creating incentives to reduce waste output; purchasing products that are sustainable from production to disposal; reusing pre-existing items; recycling the maximum amount of waste; and minimizing the amount of non-recyclable waste.

The plan is broken down into four sections: *Introduction*, *Zero Waste*, *Data on Waste at Whitman College*, and *Mitigation Strategies and Tracking Progress*. The *Introduction* section of this plan highlights Whitman College's sustainability efforts and describes how its current initiatives to mitigate waste are falling short. The *Zero Waste* section articulates the mission behind Zero Waste and what it would mean to be a Zero Waste institution. The *Data on Waste at Whitman College* section demonstrates various statistics related to Whitman College's waste stream and discusses the implications of our current data. The *Mitigation Strategies and Tracking Progress* section lists and describes initiatives and procedures the College needs to pursue upon adopting this plan to ensure the institution becomes Zero Waste by the year 2030.

In the case of a conflict between completing the mitigation strategies listed in a timely manner, prioritization of strategies should follow the Zero Waste hierarchy. In other words, strategies that have "Planning" next to them have the highest priority, "Incentives" have the next highest, "Purchasing" the next, "Reuse" the next, "Recycle" the next, and lastly, "Regulation." This hierarchy will best ensure the College's ability to mitigate future generated waste based on the Zero Waste philosophy.

The ASWC Sustainability Committee, Office of Sustainability, and College Administration is responsible for collaboratively revisiting this plan in the year 2019, and every two years after that. This will allow for all three parties to collectively manage the feasibility of its planned procedures and make adjustments to this document as needed.

Finally, the plans and procedures proposed here should not be seen as a replacement for the proposed mitigation strategies in the Climate Action Plan (CAP). Rather, this plan should be seen as a complementary document to the "Solid Waste and Purchasing" section of the CAP.

Introduction

In 2014, the Associated Students of Whitman College (ASWC) formed a Sustainability Committee in order to represent the concerns and interests of the student body with respect to the campus' impact on the environment. Since then, the ASWC Sustainability Committee has taken pride in its efforts to make Whitman College a more environmentally responsible, sustainable institution. This document is a continuation of those efforts.

In the face of mounting environmental concerns, campuses and communities across the country have taken strong initiatives to reduce anthropogenic impacts on the environment by implementing sustainability programs. Whitman College has taken up this cause by developing and employing several environmentally friendly plans and procedures, as well as adopting a manifesto of core Environmental Principles.

Whitman College's Core Environmental Principles are as follows:¹

- *To reduce the amount of non-recyclable materials, to reuse materials when possible, and utilize recycled materials.*
- *To consider the eco-friendliest science and technology available to decrease our environmental impact.*
- *To continue to build an energy-efficient campus in the 21st century.*
- *To patronize companies that are active in their defense of the environment from further degradation.*
- *To encourage individuals' environmental accountability through programs of environmental education.*
- *To consider environmentally friendly accountability through programs of environmental education.*
- *To further the use of reused materials, recyclable materials, and the Internet for campus communications.*
- *To encourage and request food service to make environmentally friendly decisions in purchasing food and supplies, reducing waste, and reusing materials.*
- *To maintain campus grounds through the employment of bio-friendly substances and services*
- *To strive to improve upon current practices so we may harmonize the trends of the industrial world with the natural environment.*

¹ Whitman College Office of Sustainability:
<https://www.whitman.edu/about/campus-sustainability/mission-and-principles>

Likewise, Whitman has developed and committed to a Climate Action Plan (CAP), which provides a roadmap to carbon neutrality by 2050.² On page 6, the plan states these as its primary reduction goals:

- *Minimize landfill-bound waste from the College by diverting as much as possible through reduction, reuse, recycling, and composting*
- *Integrate climate action and learning together to create positive behavior change that reduces emissions among students, staff, and faculty alike*
- *Become a beacon of sustainability and climate action in the region*

This document serves as a guide toward achieving the objectives of the Climate Action Plan and upholding Whitman College's Core Environmental Principles.

Whitman's Progress in Zero Waste Efforts

Whitman has yet to adequately uphold the objectives outlined in the CAP and Core Environmental Principles, and has thus failed to properly handle and reduce its waste output.

Whitman College's commitment to sustainability creates a *prima facie* moral obligation to take action against the crisis of climate change and do its part as a respected and forward-thinking institution to reduce the waste it generates. Regrettably, Whitman College is far from fulfilling this ethical imperative. Whitman currently produces a staggering **201 pounds** of waste per student per year.³ To combat the College's lack of action and responsibility in relation to waste reduction, the ASWC Sustainability Committee has developed this document to outline a strategic plan for Whitman College to become a Zero Waste campus by the year 2030, and fulfill its ethical responsibilities as an institution of higher education.

According to the Zero Waste International Alliance, an institution must divert 90 percent of its waste from landfills and incinerators to be considered a Zero Waste campus.⁴ Whitman College is currently diverting only 47.4 percent of its waste.⁵ While the battle is uphill, this task is not impossible; several academic institutions—such as Evergreen State College, Agnes Scott College, and UC Colorado Springs—have implemented similar plans with remarkable success, both

² Climate Action Plan: <https://www.whitman.edu/about/campus-sustainability/climate-action-plan>

³ See section "Data on Waste at Whitman College" of this document

⁴ Zero Waste International Alliance: <http://zwia.org/standards/zw-business-principles/>

⁵ See section "Data on Waste at Whitman College" of this document

environmentally and financially. It is to these institutions, and many others, that the ASWC Sustainability Committee has looked to in developing the following plan.

This Zero Waste Plan identifies the various areas of college activity that produce waste, the amount produced, and potential mitigation initiatives. These areas include public forums; events hosted at the College; maintenance of grounds, food production and consumption; purchases made by and at the College; and construction projects.

Achieving the Zero Waste goal will require an active and communicative relationship between the ASWC Sustainability Committee, the Office of Sustainability, and the Whitman College Administration. Though there are strong student initiatives at Whitman College such as Cool the Schools, the Bike Share Program, and the ASWC Carbon Tax, the successful implementation of a project and plan of this scope will require the endorsement of the Administration. Several changes that need to happen in order to become a Zero Waste institution must occur at the institutional level. Thus, without cooperation from all parties, the hopes of properly mitigating the College's waste will fail to come to fruition.

In order to ensure successful waste mitigation, decisions will have to be made about both physical changes and changes in human behavior. Physical (i.e. operational) changes include the implementation of renewable energy sources when possible as well as the thoughtful planning, purchasing, advertising, usage, and disposal of products. Human behavior changes include the implementation of environmentally responsible consumer choices, the curbing of over-consumption tendencies, the minimization of food waste, and proper waste disposal habits. In order to make such decisions, reliable and detailed information is required.

The ASWC Sustainability Committee recommends that once the Zero Waste Plan is adopted by the College, progress toward diverting 90 percent of its waste be tracked. The ASWC Sustainability Committee suggests that the Office of Sustainability re-evaluate its current waste diversion annually, with revisions to the Zero Waste Plan set at two year intervals to provide checkpoints for changes to the College's overall plans, the energy market, and technological advancements.

Zero Waste

Waste is the unwanted substance produced from human activities. Consumerism and waste abounds in the United States, which currently produces 30 percent of the world's waste, despite consisting of only 4 percent of the global population.⁶ The effects of this are detrimental to both environmental and economic well-being.

Contemporary waste management efforts include incineration and accumulation of waste in human-made landfills. These methods are becoming increasingly expensive and energy inefficient, as well as major contributors to greenhouse gases in the atmosphere. In terms of environmental damage, rotting waste generates methane (a greenhouse gas 30 times more potent than CO₂) and toxic leachate, among other byproducts. Incinerated waste is typically composed of plastics and heavy metals, which contribute to air pollution and acid rain, affecting vegetation growth as well as human and species health. Moreover, the financial investment required to attempt to rehabilitate ecosystems harmed by current waste management practices is severely higher than the cost of actually disposing of the waste. Thus, current waste disposal procedures are unsustainable and will continue to have a negative impact on future generations.

In fighting back against this epidemic, the Zero Waste philosophy was developed. The Zero Waste International Alliance defines Zero Waste as follows:⁷

Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use.

Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them.

Implementing Zero Waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health.

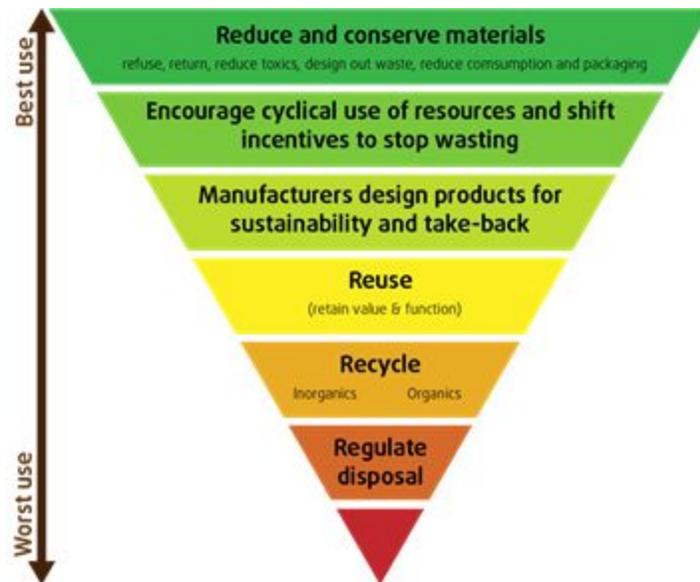
Zero Waste is a behavioral change that aims at pursuing a more sustainable way of living by mitigating the production of waste. By better “designing and managing products and processes,”

⁶ United States Environmental Protection Agency: <http://epa.gov/epaoswer/muncpl/facts.htm>

⁷ Zero Waste International Alliance: <http://zwia.org/standards/zw-definition/>

discarded materials will not only decrease in volume, but also be conserved, recovered, and reused; waste sent to landfills to be burned or buried is avoided whenever possible. Both the environment and human well-being benefit from pursuing the Zero Waste philosophy.

In pursuit of this objective, a Zero Waste hierarchy has been developed to help achieve this goal:



According to the hierarchy, the top four means for becoming a Zero Waste institution are related to the institution's responsibility to properly plan projects, purchase materials and use its own equipment; waste-related means are considered undesirable and should be seen as last resorts as opposed to first steps. The "Mitigation Strategy" section of this document will reflect this hierarchy.

However, in recognizing that at this time the production of discarded material is a necessary occurrence, the Zero Waste International Alliance considers establishments that mitigate 90% of their generated waste to be "Zero Waste."

In understanding that the production of waste is necessary for Whitman College, the next section of this document is focused on the current data related to the waste the College generates and diverts.

Data on Waste at Whitman College

The graphs and data displayed in this section were gathered in coordination with the Office of Sustainability and represent the **full year of waste collected in 2016**. The figures reported here only represent the data collected from the **waste outgoing from the Physical Plant**; waste generated from all eleven interests houses, the Jewett dining hall, and Reid dining hall are **not accounted for** in the information displayed as they are not audited. Once adopted, this section of the plan should be updated every two-years during the revision period of this document.

Data

The 2016 Whitman College waste stream consists of 273.07 tons of waste generated for the full year. As previously stated, the College produces an average of 201 pounds of waste per student per year. Base levels of campus emissions from waste point towards a greenhouse gas production rate of 55.1 mtCO₂, consisting of less than 1% of total greenhouse gas emissions. Whitman College's current waste program diverts 57.66 tons of yard waste from entering the landfill, and diverts 71.67 tons of recyclables. In total the College is currently diverting roughly 47.4% of on campus waste from entering the landfill. However, Whitman is only diverting 33% of building waste.

Graphs & Tables

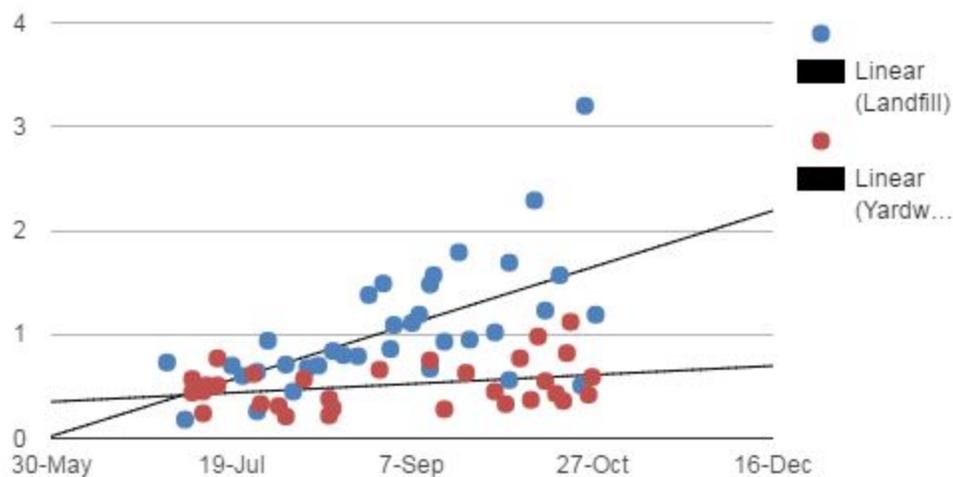


Figure 1: The graph above represents the Diversion Trend at Whitman over an eight month period

Whitman College, on average, sends roughly 1.5 tons of non-mitigated waste to the landfill nine times a month. This trend is steadily and rapidly increasing, on average, to 2 tons per trip. The least amount of non-mitigated waste sent directly to a landfill was roughly 0.4 tons; the highest was over 3 tons. The College is, on average, roughly recycling around 0.5 tons of its generated waste seven times a month with the progress of this trend increasing slightly month to month; however this increase is hardly significant. The least amount of waste recycled was roughly 0.4 tons; the highest was a little over one ton.

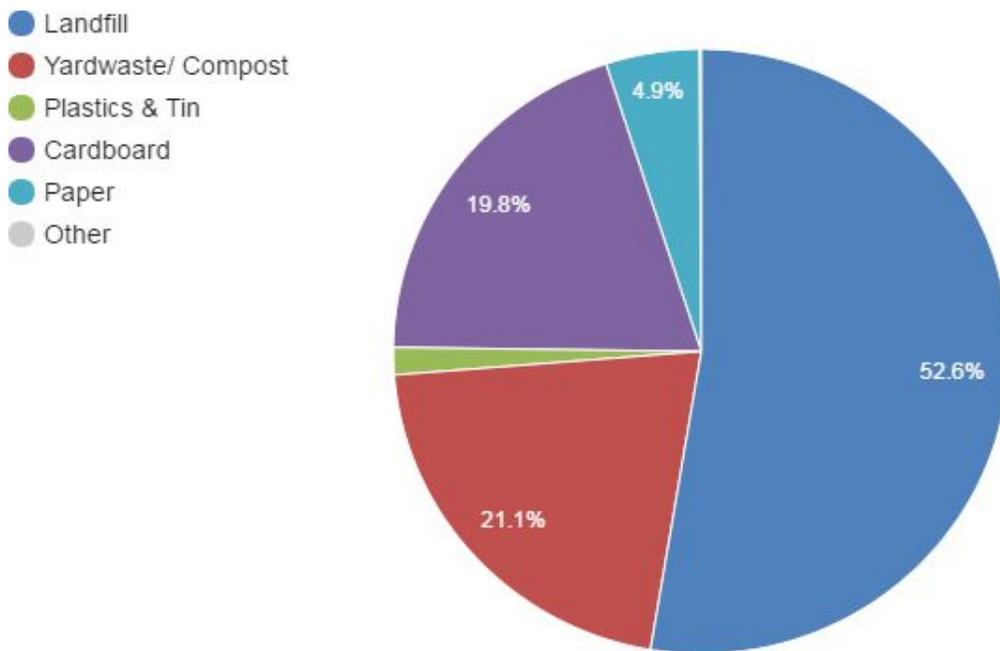


Figure 2: The graph above represents the Preliminary Waste Streams at Whitman College

In Figure 2, the totality of the waste generated by Whitman College, 273.07 tons, is broken down into percentages based on the type of waste and where the waste ends up: 52.6% of the waste generated, 143.74 tons, is sent directly to landfills; 21.1% of the waste generated, 57.66 tons, is yard waste; 19.8% of the waste generated, 53.98 tons, is cardboard; 4.9% of the waste generated, 13.39 tons, is paper; and for a combined, 1.6% of the waste generated, 4.3 tons, being plastic & tin, and other (primarily aluminium).

Yardwaste/Compost, Cardboard, Paper, Plastic & Tin, and Other constitute our diverted waste for a grand total of 129.33 tons of diverted waste, for a diversion rate of 47.4%.

Campus	Waste Diversion Rate
Agnes Scott College	72.6%
Pomona College	59.2%
University of Puget Sound	58.8%
Carleton College	52.8%
Macalester College	52.8%
Colorado College	51.1%
Whitman College	47.4%
Colby College	41.7%
Dickinson College	39.8%
Knox College	31.9%

Figure 3: Whitman College’s Diversion Rate compared to similar-sized institutions

Among the institutions represented in Figure 3, Whitman College ranks seventh out of the ten similar-sized institutions presented here, with its diversion rate of 47.4%.

Financial Outlook

Whitman College is currently spending \$78,136.25 to dispose of its generated waste. The breakdown is as follows: management and labor accounts for \$63,000; general waste accounts for \$11,784.01; composted waste accounts for \$3,218.64; and recycled waste accounts for \$133.60. Whitman, however, does gain a return on its recycled goods with recycle waste bringing in \$2,305.50. Thus, Whitman College’s current waste practices produce a net loss of \$75,830.75.

Upshot

Although Whitman College’s waste production does not constitute a significant portion of the College’s overall greenhouse gas emissions, the necessity to combat this issue is still paramount. To

handle any waste, recycled or not, contributes to anthropogenic changes to natural landscapes, permanent deterioration of ecological communities, and the usage of environmentally inefficient means to ship and transport disposed waste. Because Whitman is producing over 200 pounds of waste per student, we are contributing to these effects.

The ideals for a Zero Waste institution are the exact opposite of our current Diversion Trend (Figure 1). In striving to be a Zero Waste campus, our diversion trend should have more of our generated waste recycled than our waste sent to landfills; the quantity of the recycled waste should steadily increase over time while the amount of waste sent to landfills steadily decreases over time.

According to the Preliminary Waste Stream graph (Figure 2), 47.4% of Whitman College's waste generated is being diverted, while 52.6% of the waste generated is sent directly to landfills. However, according to the Office of Sustainability, at the time of completing this document, **50% of the waste sent to landfills can and should be recycled**. Likewise, the College has failed to implement a composting program, resulting in all food waste being sent directly to landfills. The 21.1% of the waste classified under the "yardwaste/compost" category is only yard waste. Moreover, according to the Office of Sustainability, Whitman College could be recycling over five times the present amount of plastics and tin.

Likewise, Whitman College's current waste practices are not financially prudent. The College possesses the ability to decrease its net loss margins by successfully implementing this plan. With more discarded material not produced and the waste that is produced recycled, the institution can not only neutralize net loss margins, but create a profitable waste diversion program.

The ASWC Sustainability Committee does not find the College's current diversion rate satisfactory compared to other institutions. The institutions in our sample size ranked above us have recognized and implemented zero waste plans similar to this one and have taken major steps towards mitigating their waste. Since Whitman is just beginning to combat this problem, the College's position amongst other institutions represents its opportunity for growth. With successful implementation of this plan, Whitman finds itself in a valuable position to not only compete with the institutions on this list, but to ultimately become a national leader in waste mitigation. The proceeding section lays out strategies and plans for Whitman College to become a Zero Waste Institution by 2030.

Mitigation Strategies & Tracking Progress

Mitigation strategies are the specific methods for achieving the established goal of becoming a Zero Waste institution. They are organized by timeframe, percent mitigated by said timeframe, and action. Alongside each proposed action, the term "Planning," "Incentive," "Purchasing," "Reuse," "Recycle," or "Regulation" will appear to the right to indicate to which part of the Zero Waste hierarchy the strategy adheres. Following the Zero Waste hierarchy, strategies that are related to "Planning" take highest priority, "Incentive" the next highest, "Purchasing" the next, "Reuse" the next, "Recycling" the next, and finally, "Regulation" takes the least priority. However, strategies can be given precedence depending on factors such as whether strategies are immediately possible, the presumed or estimated cost effectiveness, and whether it is compatible with the mission and future plans of the College. The strategies are split into four categories to provide a structured timeline. This list is subject to change and any new ideas should be added at every revision of the document.

2018 (50% mitigation)

Mandatory Recycling of Discarded Materials at College Recognized Events (Regulation)

In July 2007, the State of Washington passed law **RCW 70.93.093** requiring a recycling program to be at every official gathering and sports facility in communities where recycling services are available to businesses. Whitman College has failed to uphold this requirement as recycling services are not present at events hosted by the College, ASWC, or during sports competitions. Thus, not only is all of the recyclable waste accrued during these events going straight to landfills, but Whitman College is also illegal operating events hosted on campus.

Unify Waste Bins (Regulation)

While Whitman's campus features recycling bins for paper, plastic, and aluminum, not all bins are uniform in their appearance. Identifying a standard recycle bin for each discarded material would help the Whitman community reduce its waste and maximize its mitigation potential.

Create and Distribute a Purchasing Guide for Students, Staff, and Faculty (Purchasing)

Our community holds a lot of power with its purchasing habits. A purchasing guide would help community members recognize and purchase products that minimize waste and maximize efficiency from companies that prioritize environmental sustainability and social justice.

Create an Annual Rummage "Trade and Sale" on Move Out Day (Reuse)

Every year students move in and out of houses and dorms, carrying with them what they want and leaving behind possessions they no longer need; the leftover possessions turn into a major source of waste at the year's end. Organizing a community rummage sale, where Whitman and Walla Walla residents can exchange old possessions to be reused, would greatly reduce Whitman's end-of-the-year waste.

Implement Vermicomposting Program (Recycling)

Every year, Whitman generates 50 to 60 tons of yard and food waste that could be diverted if the campus had a composting program. While in a year's time the development of an extensive composting program is not feasible, a simpler and cheaper temporary solution in the meantime is the reestablishment of a vermicomposter. A vermicomposter possesses the ability to mitigate a portion of the generated compostable waste by utilizing worms to produce compost that may be used in horticultural or agricultural projects.

Ensure EPEAT Gold Standard Level on Electronic Purchases (Purchasing)

Future purchases of PCs, Monitors, Image Displays, Televisions, and or Mobile Phones must reach the EPEAT Gold Standard for sustainable purchasing. The EPEAT Gold standard ensures that electronic products purchased have been manufactured, operated, and can be disposed of in a way that guarantees minimal environmental impact.

Ensure ENERGY STAR Equivalent Purchases on all Newly Purchased Appliances (Purchasing)

Future purchased appliances must have met and be endorsed by ENERGY STAR, or an equivalent environmental organization. ENERGY STAR, being a subsidiary organization of the EPA, labels and identifies energy-efficient products that reduce greenhouse gas emissions as well as mitigates waste during the development, usage, and disposal of the product.

2020(70% Mitigation)

Centralize Office of Sustainability (Planning)

Whitman College's current Office of Sustainability is located in a single room within the Physical Plant, while most peer institutions of similar size and reputation have a full fledged Office of

Sustainability. If Whitman wants to maintain a reputation of environmental sustainability, the College needs a centralized Office of Sustainability to organize and implement the environmental efforts put forth by the students, staff, and faculty.

Hire Zero Waste Assistant (Planning)

Currently our Office of Sustainability is a one person operation with the Sustainability Director overseeing all of Whitman College's environmental initiatives. Once this plan is adopted and begins implementation, the requirements to successfully manage and effectively execute this plan will step beyond the ability of a single person. Thus, in order to optimize the execution of this plan, a staff-level Zero Waste Assistant position must be created and filled.

Construction Material Recycling (Planning)

In the planning and constructing of new facilities, buildings, and forums on campus, the college should strive to recycle 70% the waste generated from the project. This will require that the purchasing of the materials be well thought out and researched in order to mitigate our environmental impact during our future developmental endeavours.

Implement Recycling Incentive Program (Incentive)

Through the collaboration of the Student Store, the Environmental Interest House, and the student body, the ASWC Sustainability Committee would like to develop a recycling incentive program. Students would take their personal recycled waste to the "Outhouse" (Environmental Interest House), where it will be recycled and weighed, and depending on how much waste is delivered, the students will earn points, in ratio with the weight of the waste brought in, toward their Student Store accounts to be used on future purchases.

Certify E-Waste Recycling (Recycling)

Walla Walla County currently does not have a certified electronic waste recycling program. In order to properly dispose of electronic waste, Whitman College will send its generated e-waste to a certified electronic waste recycling program to mitigate hazardous materials from entering the environment.

Implement Composting Program (Recycling)

Every year, Whitman generates 50 to 60 tons of yard and food waste that could be diverted if the campus had a full-fledged composting program. The vermicomposting program implemented in 2018, while a step forward in composting the amount of generated food and yard waste, is inefficient for processing the quantity that Whitman produces annually. Thus, a complete composting program must be set in place with an industrial composter and student interns.

Centralize Purchasing (Purchasing)

Each department at Whitman College is allocated their own budget and purchasing power. While each department is entitled to their budgets, it is prudentially, financially, and environmentally ineffective for each department to have the jurisdiction to purchase their own supplies, materials, and equipment. Creating a centralized purchasing body that all departments abide to will allow for uniformity, regulation, and environmental consciousness to be explicit in future purchases done by the College.

Ensure I2SL Green Laboratory Standards (Planning)

The operation of Whitman College's laboratories currently do not adhere to any green lab initiatives that aim at reducing laboratories' energy, water, and material usage. Adding additional environmental standards set forth by the International Institute for Sustainable Laboratories will ensure that the purchasing of materials, generated waste, and usage of energy will be handled in an environmentally conscious way to minimize Whitman's environmental footprint.

2025(75% Mitigation)

Implement Glass Recycling Program (Recycling)

The city of Walla Walla currently lacks a glass recycling program. Students and community members every year are shipping many tons of glass to landfills that can and ought to be recycled. Thus, since the city of Walla Walla is lacking initiative, Whitman College will develop a sustainable glass recycling program to process the generated glass waste produced by the College.

Display Mitigation and Diversion Rates amongst Residence Halls (Incentive)

An important part of sustainability is transparency, and students at Whitman should know and understand their institution's current mitigation and diversion waste rates. An easy way to

distribute information would be to display these rates in residence halls, allowing for easy access to information about Whitman's quest for sustainability.

2030(90% Mitigation)

Implement Vegetable Oil Recovery/Recycling Program (Recycling)

In 2016, Keene State College became the first college in the country to use recycled vegetable oil to heat a third of its facilities. The use of vegetable oil as biofuel not only mitigates waste, but also utilizes a carbon neutral fuel source that is financially prudent. Being a similarly sized academic institution, it is well within Whitman College's ability to develop a similar program.

Implement Greywater Recycling Program (Recycling)

Whitman College currently lacks a system that can capture gently used water from bathroom sinks, showers, tubs, and washing machines. The water that is not captured is a safe and beneficial source of water that can be used to hydrate lawns, plants, and gardens on campus if captured and recycled. Implementing a program that collects this water will allow the College to mitigate unnecessary water waste.

Tracking Progress

The Office of Sustainability will be in charge of recording and tracking Whitman's progress in becoming a Zero Waste institution by monitoring the production of generated waste; the final destination of the College's waste; the percent of waste mitigated; and purchases made by the institution. Subsequently, when a Zero Waste Assistant is hired, the assistant's main responsibilities, in conjunction with the ASWC Sustainability Committee and the Administration, will be overseeing the tracking, execution, and revising of the Zero Waste Plan.

The purpose of tracking and monitoring the institution's waste is to make more informed decisions about the effectiveness of the given mitigation strategies; allow for knowledgeable revisions of the goals and mitigations strategies set forth in this plan based on the progress of the institution's mitigation rate; and demonstrate the College's ability in upholding the proposed objective of mitigating 90 percent of Whitman's waste.