Self-Guided Campus Sustainability Tour

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I. Executive Summary

Problem statement

Access to information regarding sustainability efforts at Western Washington University should be easily accessible and informative to anyone interested in researching it. Providing awareness of the actions taken towards this goal can help individuals make informed decisions to promote and protect a healthy planet. This further strengthens our quality of life for the present and future generations. Currently, there are few ways for people to learn about and explore all the sustainable efforts specifically located on Western's campus. One way to learn an overview of sustainability efforts on campus is through scheduled sustainability tours, however, they are sparse and can be inaccessible to potential goers. Other resources are available online, however, these resources can be dense and hard to navigate. Finding a brief overview of how sustainability is manifested physically on campus is also difficult. Our project addresses these issues and provides an accessible and engaging solution to increase sustainable education in Western's community.

Project description

This quarter we developed a PDF for online viewing and a printable brochure version that showcases WWU's sustainability efforts in a visually appealing and easy-to-understand manner. This resource will act as a separate entity from the in-person tour since the sites included differ. The tour contains 12 unique sites across campus, each with an informative description and links to learn more if desired. The tour also includes high-quality photos of sites and a custom-designed map for site location reference. Viewers will be able to utilize this resource in two ways, either while walking through campus with the brochure or using the online PDF remotely.

Recommendation Summary

Early in the planning stage, we realized there was more information than what could fit into our project timeline. Despite this, we are providing a great foundation for future teams to build on. The next step is to implement this content into an interactive story map. Other universities, such as the University of Washington, have successfully created such an experience. An interactive map allows more information and photos since it is not restricted to dimensions like a PDF or brochure. Our site compilation included many other sites that could not fit inside the PDF. However, for an interactive version more sites are suitable. The interactive map is an ideal equivalent of this tour. This addition could be accomplished by enlisting the help of GIS students looking to apply their skills to make a difference. Both of these formats will provide different learning experiences. A PDF may be easier to navigate and a quicker read, but an interactive map can be more comprehensive of sustainability on campus.

II. Introduction

The overarching goal of this project is to make sustainability at Western more accessible. Currently, the only way to learn an overview of Western's sustainability efforts specific to locations on campus is to attend on-campus sustainability tours. Unfortunately, these tours are only held in person and occur infrequently so they are often inaccessible to most people. Anyone should be able to learn about Western's campus sustainability, regardless of physical location or ability. Students have also expressed more curiosity surrounding sustainability at Western. It was recognized that there are few options to learn about sustainability without directly engaging with sustainable events or projects on campus. There is information online about Western's sustainable efforts through the Sustainability Engagement Institute's website, Instagram page and the Sustainability Action Plan. These resources succeed in being informative, however, seem to be distanced from what is going on physically on campus. As well as these resources are not intended to be very engaging or fun to look at. An online guided tour has greater appeal by providing concise information, in one central location, and in an engaging manner.

A colorful and visual map with applicable and important sustainability features is much more enjoyable and engaging for viewers[1]. Clean visual design can relay information more easily to the viewer. Vibrant colors and visuals will draw the viewer's eye to the important elements of the document. Consistent aesthetics also contribute to the content by giving the right visual cues, such as reliability.[2] For example, using the typefaces and colors associated with the university provides the viewer with a sense of reliability to the source. A simple hierarchy, such as varying font size and color, will guide the reader through the document by creating a more digestible form of information.[3] It is also a much easier way to digest the large amount of sustainability information available as it becomes synthesized through this format. This tour is a great way to highlight interesting sustainability elements that do not get enough attention. Students, staff, faculty, community members, prospective students, and other interested individuals, should have more ways to learn about sustainability without getting actively involved with groups on campus.

The Sustainable Development Goals (SDGs) are a list of 17 goals as a global call to action for all developed and developing countries. They represent pressing global issues including climate action, clean energy, education, and poverty as interconnected sustainability issues that go hand in hand when developing techniques to combat these pressing issues. These goals are the result of decades of work by countries and the United Nations.[4] Our project demonstrates SDG 4: Quality Education and SDG 11: Sustainable Cities and Communities. We are helping to support quality education by providing more accessible information about sustainability on campus and allowing anyone interested to learn about these topics remotely. Many people may be interested

[1] Lucidspark, Information Design and Why it Matters
[2] Interaction Design Foundation, What is Visual Design?
[3] Interaction Design Foundation, What is Visual Design?

[4] United Nations, The 17 Goals

in how sustainability is implemented at Western but do not know where to start learning about it. Our tour will help to lay out a concise framework of campus sustainability while also providing resources for more information as needed. Accessibility is a component that is often not highlighted as much as other elements of sustainability such as the environmental impact. This was found to be the case while categorizing all the sustainable site information we were provided and through personal exploration of Western. We also found that the information that contributes to the in-person tour, as well as more recent sustainable features, is not concisely organized or available to the general public as data is spread out among web pages lacking cohesion. This project aims to improve the organization of sustainability on campus by providing this information in an understandable way. By allowing sustainable information to be more accessible to interested individuals, Western's sustainable community and their level of understanding are bound to improve. Our efforts demonstrate SDG 11, as it promotes sustainable information and allows the community to get more involved with sustainability, even if it is somewhat passive. This tour could be the starting point for many people, especially new and incoming students, to play a bigger role in increasing sustainability on Western's campus.

Luckily, many other universities have already implemented similar self-guided tours so we didn't have to start from scratch to create Western's sustainable tour. These examples assist in measuring and narrowing down which features are most effective in a self-guided tour. Western also currently has a self-guided campus tour, which is a good reference and starting point relevant to this specific location. One critical downside to this campus tour is the lack of color. Color can significantly improve a visual design by setting the tone, drawing the viewer's attention, and benefiting the overall usability of the tour; a small color palette can reinforce visual hierarchy, which gives users a clear path of viewing without even trying.[5] This project seeks to create a tour that is more visually appealing and engaging with a clear color palette, curated sites, and concise descriptions. We found inspiration from the tours that had clean designs, sufficient descriptions, high-quality images, and a simple map.

University of Washington Seattle has a great self-guided sustainability tour. Their website includes an interactive map, pdf, and information typed into the webpage. The variety of formats allows the reader to use whichever one works best for their experience. Looking at the PDF version specifically, we found inspiration in the conciseness of the site descriptions, connectivity between the map and descriptions, the organization of the descriptions, and supplementary photos. (see Appendix A)

We also gathered inspiration from Portland State University's virtual sustainability tour. This tour was more concise than UW, with fewer photos. However, the descriptions were more informational. We liked the structure of this tour specifically for Western's smaller campus, rather than organization by area of campus as seen in UW's version. While larger campuses such as UW benefit from site organization by location, it seems unnecessary in a fairly small and

[5] Nielsen Norman Group, Using Color to Enhance Your Design

walkable campus like Western's. The use of white space between sites and labels allows their wordy site descriptions to look less daunting to viewers and allows the material to be more digestible. Visual hierarchy principles such as large circles numbering each site and clear distinction of the site titles and descriptions through varying font colors make PSU's version a strong example of what a great sustainability tour should look like. While PSU utilizes colors to increase the readability and visual flow of their site descriptions, the color palette is minimal and does not overpower the important information. (see Appendix B)

III. Methodology

For data collection, we decided that compiling a list of self-guided sustainability tour examples would be the most beneficial to our project. Since many other universities have already created similar documents, there was a wide availability of example solutions to utilize. We already have a decent understanding of student perspectives and desires from the tour, as well as other potential viewers. This will give us a better understanding of how the format and information provided will boost engagement of this resource. The goal of this research is to understand visual communication patterns and ideas that most effectively assist in the learning and engagement of an online tour. This knowledge is crucial in creating a successful deliverable. The visual appeal and engagement must be strong in order to boost engagement with interested individuals. No matter how good the site descriptions and selections are, the formatting must be visually appealing for people to enjoy this resource.

We selected 9 case studies that represented a wide range of school types and tour formats. This number is large enough to have a broad range of tours and different visual communication elements. However, it is not large to the point where the data becomes redundant and takes too much valuable time to sift through to compare tour elements. We categorized our research into many categories:

- Student Population
- College size (square ft)
- Format (PDF, interactive)
- Number of sites
- Image quality and quantity
- Videos?
- Links to resources?
- How was it organized? (Categories, geography, etc)
- How in-depth did it go? (0-2)
- Narrative rating (0-2)
- Visual rating (0-2)

We collected both student population and college/university size since the map will be on a spatial scale but also would need to consider the capacity of the university to implement sustainable sites, given the resources available, and the vastness of topic ideas. Larger schools may have to map the tour differently than small schools, even if the small school has more sustainability resources. Large schools may have more sites to include, so an interactive map may be preferable over a print-size version. Additionally, large schools may need to organize the sites by geographic location or other categories in order to make the information more digestible. At smaller schools, the sites are likely to be close in proximity and also fewer in quantity, leading to less of a need for geographic site organization.

When looking at the depth of the tours, we looked more at the level of detail in the content, rather than the length of the text. For example, some sites had brief summaries with links to more information and others had large text blocks with very descriptive explanations. We ranked these features on a 0-2 scale to identify which examples excelled or were more flawed. This gave us more flexibility in ranking compared to a yes or no scale. However, it is not as overwhelming with data as a 1-10 point scale. We want to keep our rankings concise but still be able to convey the strength of the descriptions. This way, we can look at all of the examples side by side to identify patterns of which components may contribute to an overall score in these categories.

To create an effective tour, the descriptions must be understood by the intended viewers. Since the intended audience is mainly staff, students, prospective students, and community members, an example of a flawed description may include technical words and jargon related to energy and building materials. A more suitable description in this example could be a brief overview of energy efficiency implementation and include links to more detailed information, for those who have the capacity and desire to learn more.

We based our narrative and visual ratings on our previous knowledge of stakeholder wants and needs by analyzing the examples through the lens of possible viewers. Elements contributing to the score could be the balance of white space and information, conciseness of text, use of jargon, visual elements, and hierarchy of visual information.

Good visual communication must provide a balance between text and images where neither element overpowers the other. Images are important to provide interest and further communicate the message at hand. This ties into the conciseness of information, which is essential to diminish distraction and simply display the most important information. This project must also support the brand of Western by using the same fonts and colors. This will make the document feel reliable and accurate since it follows a visual style that is familiar to most viewers, increasing confidence in the source of the document.[6]

[6] Interaction Design Foundation, What is Visual Design?

Using an overall rating of the tour will help us generalize which tours we liked the best so we can compare elements of those tours and see if there were features we consistently liked between them. This is the same for low overall ratings; which features may have always been low-rated among these and why? We can see patterns with these rankings to potentially identify map elements that consistently were unappealing to a viewer.

By collecting this information in very organized categories and then giving each example an overall rating, we were able to compare these examples to determine which features overlap the most between the examples we like the most. This was also helpful for us to determine which elements we commonly did not like.

IV. Results

After compiling a variety of examples (See Appendix F) and creating a framework for each of the sites to be analyzed, several sites stood out as good reference points for Western's sustainability tour. Referencing these examples, ideal qualities were extracted. Successful and effective tours contained 10 to 15 sites. Having too many sites makes the tour overwhelming and less engaging. Having too few sites leaves the viewer wanting more. With 10-15 sites, key and valuable information could be conveyed without overburdening. (See table in Appendix C)

A key point to assisting the viewers' engagement throughout the tour is its ease of navigation. Elements that influence navigation include the presence of a map and the overall tour layout. The map is the primary element of a tour. To be effective, it should contain mostly pertinent information that relates to the sites or provides supplementary information. A successful map includes various types of visual communication principles that contribute to an aesthetically pleasing and practical communication device[7]. Consistent visual design between the map and descriptions, such as similar numbered icons for each site, helps to guide the viewer, creating a direct parallel between the map and site narratives.

An important element of a tour is that the viewer feels guided. With an in-person tour, there is someone there to guide and narrate. For a self-guided tour, the tour acts as the tour guide. A successful tour is one that clearly guides the viewer. Whether the viewer is physically following along on campus or is engaging from a distance, they should be able to follow and understand the tour. Once the viewer has landed on a site, the information included needs to be succinct and effective in telling the story in a short amount of time. With a limited amount of space available and to maintain attention, site narratives need to be minimal. However, they must also provide a clear and direct explanation. A successful tour balances this by explaining any specific terminology included and briefly telling the story. If someone wants to learn more, the presence of a link provides that opportunity.

[7] Dyn Device, How to Create Effective Visual Communication

V. Recommendations

This project serves to support many sustainable initiatives on campus and beyond. First, this project is tied to the SEI (Sustainability Engagement Institute) and the SEJF (Sustainability Equity and Justice Fund). This project should be included and highlighted on the SEI website under the "Sustainability at Western" tab since it is an educational resource regarding sustainability at Western. Another connection for this project is with Western's Sustainability Action Plan. Created in 2017, this plan creates the roadmap for sustainable actions to be implemented across campus, some of which are included in this tour. Furthermore, this project is a good starting point for individuals to learn more about sustainability at Western. The next steps of this project are to put the tour on the SEI website and print copies of the brochure to distribute along campus, such as in Viking Union, the SEI office, and the Environmental Studies building. The tour could also gain more traction through sharing it on social media. Our recommendation is to communicate and potentially coordinate with related Instagram pages, such as the SEI page or the College of the Environment page to create a post highlighting this resource.

Printed brochures can present some disadvantages, including the unsustainable nature of printing so many sheets, in addition to the money and labor of creating these printouts. A potential method to work past these issues, while still managing an in-person self-guided tour, is to place QR codes across the 12 sites. Viewers would be able to follow a path from the online map to each location and scan the QR code to learn more information. This would also allow for more space per site to include additional information as needed. This may also be an effective way to increase participation in this tour. Students and other people on campus will likely come across these QR codes and unintentionally learn about these sites, rather than only students seeking out the resource online.

Our project team focused primarily on qualities associated with a PDF version of a sustainable tour. Through our site research it was found that interactive tours are incredibly effective. They provide greater engagement opportunities through their navigation and overall present more opportunities for narrative and images. However, our project team lacked the skills to create an interactive tour. For this reason, the project team prioritized organizing site information and the creation of a PDF. This work acts as a starting point for our next recommendation: a comprehensive interactive version (See Appendix G).

An interactive map will expand the opportunities of an online tour. We compiled all of the sites included in previous on-campus sustainability tours and additional sites we selected into an organized document. Many of these sites were very engaging, but there was simply not enough room to include all of them. In the interactive version, more sites can be included, in addition to detailed descriptions as needed, and more images. This format may be more appealing to viewers who are not following along on campus since it can include multiple photos per site. There is also more room on the map to include icons, such as LEED-certified buildings and bike racks across campus. Icons serve to limit the need to read, using a small image to reflect a category.

An example from Portland State's sustainable tour is the use of a sun icon to indicate the presence of a solar panel. Associated with this is the presence of a key, which provides the context for visual cues like color or icons being employed. (see Appendix D and Appendix E). This is a great tool to utilize when there is more room on the map to implement these features. Another key benefit of an interactive map is the flexibility of editing and updating information as new sustainability sites develop. Reformatting a PDF and narrowing down sites can be a much larger challenge than adding a site to an interactive guide.

The timeline for this project is broken into three phases: research, design, and implementation. The research phase began by interviewing Zinta Lucans, SEJF project manager and project sponsor for this project. This conversation included a discussion of existing resources on the topic, goals for the design, goals for the content, and other broad questions. From this, the project team gained a better understanding of the project goals and what was expected by the SEI and SEJF. The next element within the research phase was compiling an assortment of sustainable tour examples from other schools which were analyzed for various qualities. Ultimately, the research phase provided a background for what this project could look like. Phase two, the design phase, began with determining what sites would be included. From there, images were procured and narratives scripted. This all culminates in the tour pdf. Phase three, implementation, is the phase in which the tour is evaluated and critiqued by Zinta, Lindsey MacDonald, and others. This is an important phase as it highlights opportunities for improvement with the document. Once the tour has reached an ideal state and has received approval, it can be implemented for use. This looks like adding the PDF to the SEI website. Future project groups have the resources and foundation to create a comprehensive interactive map as another version, bringing in more viewers and accommodating all interests.

VI. Monitoring and Evaluations

To track the success of this project, we can count clicks on the website to measure online interaction. Additionally, we can track the number of prints we make and identify the effectiveness of these printouts on campus by observing how long it takes for the brochure supply to run low. If featured on social media, insights such as likes, comments, and shares can be used to understand the reach of the tour to stakeholders.

VII. Budget

We did not find the need to spend any money developing our project. However, printing the brochures to distribute on campus will cost some money in the future. Each brochure costs just under a dollar to print. Implementing QR codes on 12 sites across campus is a more cost-efficient option, but may still have a cost for printing and labor to set up the codes. Additionally, the future team creating an interactive website may require funds if the creators are hired to do

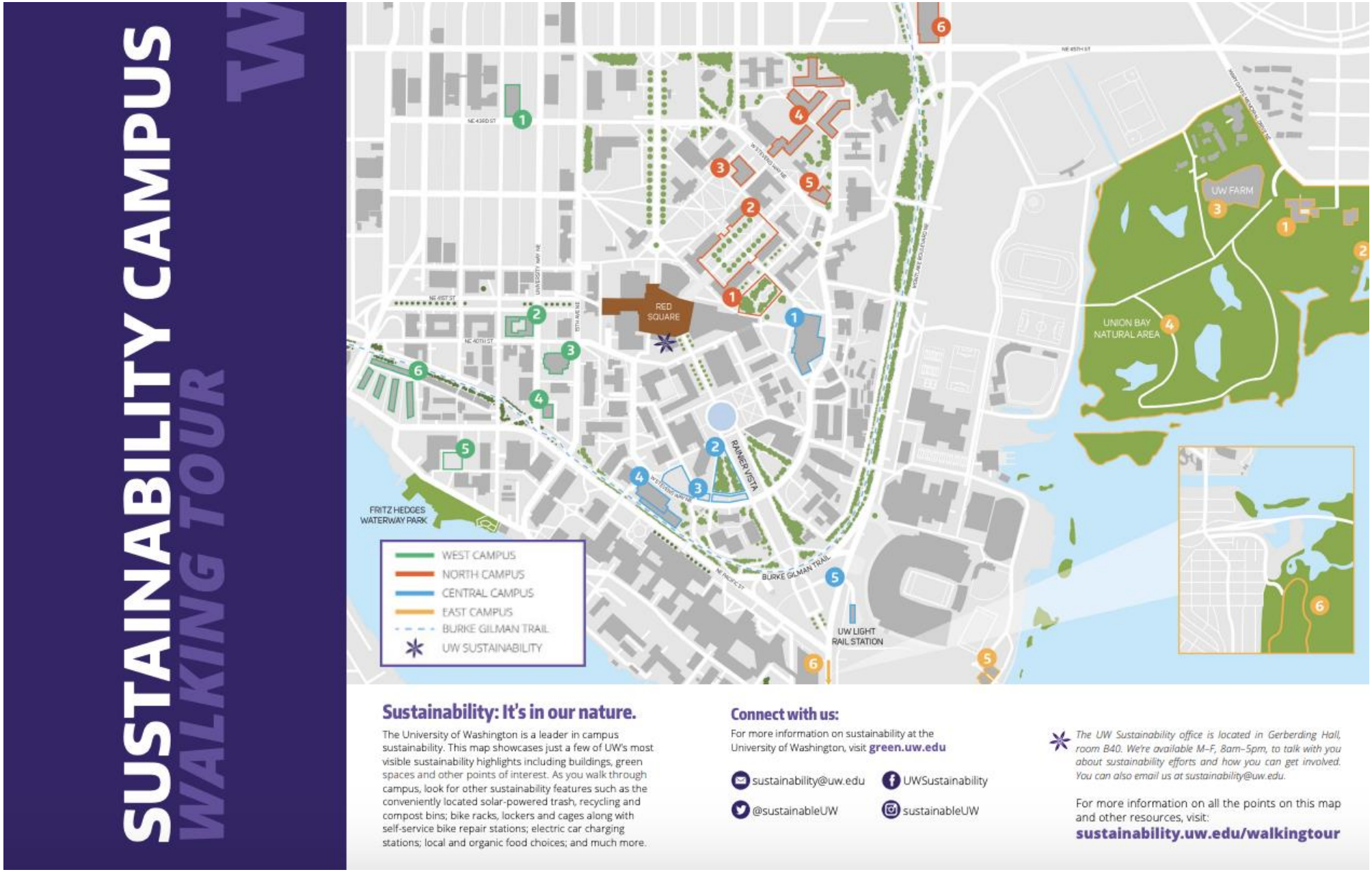
the job. Ideally, students with GIS experience will be able to take over this project as part of a class, so the project costs can remain as low as possible.

VIII. Conclusion

After fully completing our project, it's safe to say that we succeeded in just about everything we set out to do within our scope. We were able to design a visually appealing and eye-catching layout to house our information, make our project informative and concise to fit the limited space and most importantly contribute to the overarching goal of making sustainability more accessible to the Western community and anyone else interested in researching our efforts. As for the future of our project, we expect the next group of students who contribute to it to take it above and beyond our current limitations.

IX. Appendix

Appendix


SUSTAINABILITY CAMPUS
WALKING TOUR
RED SQUARE
UW FARM
UNION BAY NATURAL AREA
RAINIER VISTA
FRITZ HEDGES WATERWAY PARK
BURKE GILMAN TRAIL
UW LIGHT RAIL STATION
WEST CAMPUS
NORTH CAMPUS
CENTRAL CAMPUS
EAST CAMPUS
BURKE GILMAN TRAIL
UW SUSTAINABILITY
Sustainability: It's in our nature.
The University of Washington is a leader in campus sustainability. This map showcases just a few of UW's most visible sustainability highlights including buildings, green spaces and other points of interest. As you walk through campus, look for other sustainability features such as the conveniently located solar-powered trash, recycling and compost bins; bike racks, lockers and cages along with self-service bike repair stations; electric car charging stations; local and organic food choices; and much more.
Connect with us:
For more information on sustainability at the University of Washington, visit green.uw.edu
sustainability@uw.edu
UWSustainability
@sustainableUW
sustainableUW
The UW Sustainability office is located in Gerberding Hall, room B40. We're available M–F, 8am–5pm, to talk with you about sustainability efforts and how you can get involved. You can also email us at sustainability@uw.edu.
For more information on all the points on this map and other resources, visit:
sustainability.uw.edu/walkingtour

Appendix B:


LEGEND
LEED Certified Buildings
District Energy Loop
Rail Transit Lines
Bike Garage
Eco Roof
Electric Vehicle Charging Stations
Solar Panels
Garden Project
Geothermal Wells
Four underground geothermal wells use heat pumps to connect to PSU's Campus Loop, a district energy system that generates steam and chilled water from centralized plants and distributes it underground to 14 buildings. This provides greater reliability, efficiency, and lower utility costs.
1 Urban Center & Plaza
2 Academic & Student Recreation Center
3 Bike Hub
4 Karl Miller Center
5 Native American Center
6 Robertson Life Science Building
7 Viking Pavilion & Scott Community Field
8 Epler Hall & Splash Boxes
9 Community Orchard & Campus Apiary
10 Bike Garage with Living Roof
11 South Park Blocks
12 Smith Memorial Student Union
13 Reuse Room
14 Lincoln Hall
15 Broadway Cycle Track
16 Fourth & Montgomery Building
Market St.
Mill St.
Montgomery St.
Hall St.
College St.
Jackson St.
Harrison St.
Urban Center Building
Urban Plaza
Academic & Student Recreation Center
Karl Miller Center
Fourth & Montgomery
Richard & Maurine Neuberger Center
Lincoln Hall
Parking Structure 2
CPS
USB
Cramer Hall
Smith Memorial Student Union
Simon Benson House
Blackstone
Oak Savanna
NGH
SGH
HSB
Walk of the Heroines
Millar Library
South Park Blocks
Farnborz Maseeh Hall
Parking Structure 1
University Center Building
Fourth Avenue Building
Engineering Building
Shattuck Hall
East Hall
Ondine
5th Ave Cinema
University Pointe
Broadway
Peter W. Stott Center
Viking Pavilion
Research Greenhouses
Stratford
Science Building 1
HAR
Parkway
Parkmill
Science Research & Teaching Center
WHP
Stott Community Recreation Field
10th Ave
Park Ave
Montgomery
Broadway
6th Ave
5th Ave
4th Ave

At Portland State, we strive to have everything we build teach us, and everything we learn help us create a better world. Our 50-acre urban campus is a vibrant, living laboratory for practicing sustainability, extending beyond the classroom into offices, eateries, plazas, and gardens. Our goal is to innovate and be a model of sustainability both locally and internationally.

It all starts here. This self-guided tour will take you to many of the sustainability features on our campus.

1 Urban Center & Plaza

SW MONTGOMERY BETWEEN 5TH & 6TH

With the streetcar passing diagonally through the plaza, numerous bus stops, and three light rail lines, the Urban Plaza is one of the busiest transit hubs in the state. More than 40 percent of all student and employee trips to campus are made by transit. The neighboring Urban Center Building is the first existing building at PSU to receive LEED certification under the LEED Operations + Maintenance program.

2 Academic & Student Rec Center

SW 6TH & MONTGOMERY, IN THE URBAN PLAZA

Built in 2010, the ASRC is LEED Gold certified. Toilets flush with rainwater collected from the roof, all wooden materials are sustainably harvested and/or sourced Forest Stewardship Council (FSC) certified, and the track and climbing wall are made from recycled materials. Campus Rec supports inclusion programming accessible at low cost to PSU and the surrounding community.

3 Bike Hub

SW 6TH & HARRISON

The PSU Bike Hub is a place where students, faculty, and staff learn to maintain and repair their bikes and have access to a full-service repari shop. The Bike Hub provides quality tools, workspace and instruction, and sells bicycles, parts and accessories— all with the goal of keeping riders and bikes on the road, empowering bicyclists of all sorts, and promoting the bicycle as a tool for recreation, fitness and efficient transportation.

4 Karl Miller Center

SW HARRISON BETWEEN 6TH & BROADWAY

Home to PSU's School of Business Administration and Office of International Affairs, the Karl Miller Center's (KMC) major renovation and addition was completed in 2017. Certified LEED Platinum, KMC contains many innovative sustainability features. During construction, 80% of the old building's walls, floor, and roof structure were reused, while over 95% of construction and demolition waste was diverted from landfill. Many resource conservation features are present in the building, such as sensor-controlled low-flow faucets and lighting fixtures controlled by daylight and occupancy sensors. The new portion of the building is cooled through natural ventilation, an application of passive design strategies.

5 Native American Student & Community Center

SW BROADWAY & JACKSON

The Native American Student & Community Center provides a place for students, faculty, and community members to gather, find social and academic support, and engage in cultural traditions and ceremonies. Built in 2003 with sustainably harvested wood and local stone and brick, the building features abundant natural light, original artwork by Native American artists, and a rooftop garden with medicinal and ceremonial plants used for smudge ceremonies, tea, healing salves, and interactive education for Indigenous Nations Studies classes.

6 Robertson Life Sciences Building

SW MOODY, JUST NORTH OF THE TILIKUM CROSSING

The Robertson Life Sciences Building, opened in 2014, is a LEED Platinum science facility shared by Portland State University, Oregon Health and Science University, and Oregon State University. The building features suspended walkways, copious natural light, and communal spaces with panoramic views. Sustainable features include green roofs, storm water collection for non-potable water uses throughout the building, and energy-efficient lighting and climate control. The building is a quick bike or streetcar ride from PSU's main campus.

7 Viking Pavilion & Scott Community Field

SW HARRISON BETWEEN 6TH & BROADWAY

The Viking Pavilion was completed in 2018 and is certified LEED Gold. Low-emitting materials were used throughout the building and most wood is reclaimed or FSC certified. Efficient fixtures are slated to reduce water consumption by 46% and energy consumption by 25%. Next door, the Stott Community field may look like an ordinary turf field, but is made of 20,000 recycled tires. The turf requires no chemical fertilizers and reduces PSU's carbon footprint by eliminating the need for fuel-powered maintenence.

8 Epler Hall & Splash Boxes

SW 12th & MONTGOMERY

Stephen Epler Residence Hall was Portland's first mixed-use LEED Silver certified building, containing classrooms, a child care facility, and student housing. The building features passive heating and cooling systems and energy efficient lighting. Rainwater flows from the roof to several river rock filled "splash boxes" in the public plaza, then channels between brick pavers to planter boxes that filter the water before it goes into storm drains and, ultimately, the Willamette River.

9 Community Orchard & Campus Apiary

SW 12th & MONTGOMERY

The Community Orchard contains more than 30 species of fruit trees and is home to the campus apiary, buzzing with bees since 2016. Student volunteers in the Student Sustainability Center manage the orchard and apiary in partnership with Bridgetown Bees. Orchard harvests are given to the PSU Food Pantry. More information on campus gardens is available at:
pdx.edu/student-sustainability-center/student-gardens.

10 Bike Garage with Living Roof

SW 11th & MONTGOMERY

One of 10 secure bike parking facilities on campus, the Montgomery Bike Garage was created through a partnership between Metro, the Portland Bureau of Environmental Services, and Portland State. The garage stores up to 75 bikes on two-tiered bike parking racks and features a green roof. Also, check out another bike garage at SW Harrison & SW 10th, on the North side of the Millar Library. This site also hosts a local food truck pod.

11 South Park Blocks

SW PARK AVENUE

This grassy, tree-lined area of campus has been a defining feature of downtown Portland since the mid-nineteenth century. These days, the Park Blocks are an essential campus open space, providing a green space for students and community members to gather. Portland's largest Farmers Market is held here every Saturday. Hundreds of trees line the park, providing shade, absorbing carbon dioxide, and reducing pollutants. Approximately 200 energy efficient street lamps line these blocks.

12 Smith Memorial Student Union

SW BROADWAY & HARRISON

Smith is a hub of student activity and is home to the Student Sustainability Center (SSC). SSC offers leadership and volunteer opportunities that engage students in social sustainability, waste reduction, campus gardens, and more. PSU Eats provides dining services in Smith and offers meal options that draw from locally-sourced, organic, and plant-based ingredients. Smith is also home to PSU's first all-gender restroom. Several cultural and resource centers are housed in Smith, serving our diverse campus community. Visitors to Smith can also take advantage of compost bins, available for food scraps here and across other campus locations.

13 Reuse Room

CRAMER HALL ROOM 180, SW MILL & STARK

The Reuse Room is PSU's on-campus resource for donating and acquiring used office, school, and home supplies. The door is always open, so students and employees can find free binders, notebooks, coffee mugs, and other supplies anytime—helping to reduce waste while saving money. The Supply Studio, run through a partnership with College of the Arts, is also a reuse room dedicated to art supplies.

14 Lincoln Hall

SW BROADWAY & MILL

In 2011, Lincoln Hall became PSU's first LEED Platinum certified building. Originally built in 1911, Lincoln Hall is a shining example of making a building more efficient while preserving its historic features. Renovations include major seismic upgrades, an efficient heating and cooling system, and double-paned windows, which were custom-built to match existing architecture. The building also features a more than 4,000 sq. foot solar array on the roof.

15 Broadway Cycle Track

SW BROADWAY & MILL

Along Broadway, a "cycle track" provides bicyclists separation from car traffic by locating the bike lane between parked cars and the sidewalk. The green "bike boxes" give cyclists a visible and safe location to wait at intersections.

16 Fourth & Montgomery

SW 4th & MONTGOMERY

The Fourth & Montgomery Building (FMB) is expected to be certified LEED Gold following the building's completion in fall 2020. Home to PSU's College of Education and departments from the City of Portland, Portland Community College, and Oregon Health & Science University, design and construction of FMB was a collaborative process throughout. There are several sustainable design highlights at FMB, including an eco roof covering almost two-thirds of the roof; solar tubes and other design strategies to make daylight the primary lighting source inside the building; and a variety of energy and water-saving systems and fixtures.

PORTLAND STATE UNIVERSITY

Campus Sustainability Tour

Follow this self-guided tour to learn all about innovations at PSU

College	Number of sites
University of Massachusetts	10
University of Washington	23
Bellevue College	8
Yale University	17
Arizona State University	35
Notre Dame	88
Portland State University	16
Pacific University	9
Lafayette College	13

Appendix D:

Fig. University of Washington

Appendix E:

Fig. Bellevue College

Appendix F: Sustainable Tour Examples

A	B	C	D	E	F	G	H	I	J
School	University of Massachusetts	University of Washington	Bellevue College	Yale	Arizona State University	Notre Dame	Portland State University	Pacific University	LAFAYETTE
Link to	link	link	link	link	link	link	link	link	link
Student pop.	28k	46k	15k	15k	75k	8.5k	16.5k	3.5k	2.7k
College size (square foootage)	13 million	20 million	4.3 million	21 million	25 million	11 million	5 million	225,000	1.7 million
Format (pdf, map, website, mobile version)	Pdf, map	pdf, map, website	pdf, mobile version	website	website	map/website	PDF Map	Youtube Video	PDF
Number of sites	10	23	8	17	35	88	16	9	13
Image quantity (per site)	1	2-5 (only 1 on pdf)	3 for whole tour	3	1	sometimes 1	0	Alot	0
Image quality (0=no, 1=eh, 2=nice)	2	2	2	2	1	2	1	2	1
Videos? (Y/N)	N	N	N	Y	N	Y	N	Y	N
Links to other resources? (Y/N)	Y	Y	N	N	Y	Y	N	Y	N
How was it organized (location, content, interest...)	location	location	none	location	none	categorized by "type" (building, energy, green space)	Location	By "type"	By type
How in depth was the narrative (0,1,2)	1	1	2	1	2	2	1	1	1
Narrative rating (0,1,2)	2	2	2	2	1	2	2	2	2
Visual rating (0,1,2)	1	2	2	2	1	1	2	2	1
Overall rating (0,1,2)	2	2	2	2	1	0.5	1	2	2
Notes	just green buildings	good range of sustainability sites	included a list of features around campus that are not just on one location and icons on the map of some features	included audio clips of the narrative providing an added level of accessibility	good range of sites, lacked any kind of navigation/sense of where one was in the tour	really challenging to navigate	There are only 2 pictures but neither are of sites listed on the tour. Realy good design otherwise and condensed	Fun and digestable	Pretty bare bones

Appendix G: Final PDFs
Brochure Version

Land Acknowledgement

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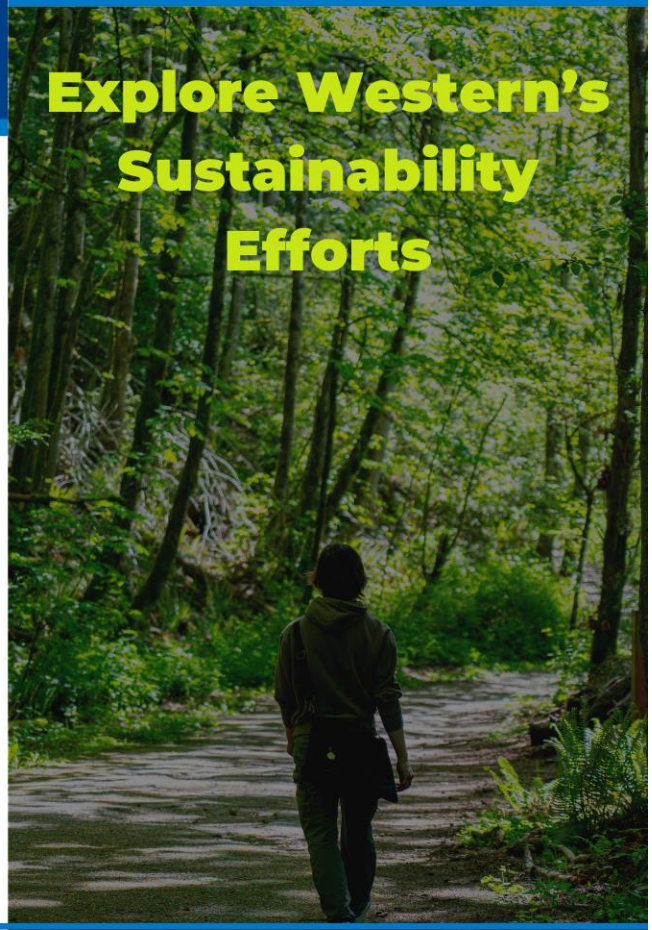
Western's Sustainability Engagement Institute (SEI) develops educational opportunities and systems-change for a more sustainable, just future. Among its many responsibilities, the institute convenes the President's Sustainability Council in order to progress the goals established by the university's **Sustainability Action Plan.**

WESTERN WASHINGTON UNIVERSITY
MAKE WAVES.

Western Washington University



1 Waste Management

The A.S. Recycle Center

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Composting in Residence Halls

The residence hall **composting program**, started by students, includes bins, biodegradable bin liners, and reimbursement for custodial staff labor. Compost in the residence halls reduces the magnitude of waste in landfills that could be repurposed.

Waste Containers

Waste containers across campus are equipped with solar panels that power waste compactions, to reduce the volume of waste removed from campus. Wireless systems in these containers notify grounds maintenance staff of full containers. This increases efficiency, lowers costs, and decreases transportation and fuel needs.

2 Food Pantry

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Want to get involved?

Academic Programs

The College of the Environment

The College of the Environment addresses today's environmental issues and prepares tomorrow's interdisciplinary problem solvers. We accomplish this mission by integrating outstanding educational programs, faculty-student collaboration, applied research, and professional and community service.

Business and Sustainability

The State of Washington is a leader in responding to the societal imperative regarding environmental issues and Western's degrees in Business and Sustainability are action components of the state's initiatives. By combining three areas of study, you will gain the necessary knowledge, skills, and abilities to operate in a changing economic and social environment.

Sustainability, Equity, & Justice Fund (SEJF)

The representatives' roles are to serve as a liaison between students, faculty, and the Dean for CSE specifically regarding equity, inclusion, and diversity. It is imperative the Dean stays informed of happenings in their college, both positive and negative. By having a dedicated student in each department, the Dean can stay better informed and include student voices and perspectives when drafting budget proposals, initiatives, and reviewing policies.

Become a CSE Equity Representative

The Sustainability, Equity, & Justice Fund Grant Program promotes sustainability by providing grants to create and implement projects that positively impact environmental, social, health, and economic practices on our campus and in our community. Find out more by looking up CSE within your program of study.

Presented by Western's Sustainability Engagement Institute (SEI)

Self-Guided Campus Sustainability Tour

Western Washington University

3 The Outdoor Center

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4 Fisher Fountain Wind Turbine

The wind turbine on top of Bond Hall, built in 1970, controls the height of Fisher Fountain depending on the wind speed. This minimizes water spraying on people walking through Red Square on windy days.

5 LEED Certified Buildings

The LEED certification program through the US Green Building Council ranks buildings from certified, silver, gold, and platinum. LEED evaluates the environmental performance of buildings and encourages sustainable building improvements. Carver Hall, which holds the WECU Court, has earned a gold status. Renovations completed in 2017 include LED lighting, motion sensors, a green roof, and low-flow water fixtures all contribute to this high ranking.

6 Solar Window Panels

These six 4 by 4 feet solar panel windows represent the beginning of technology moving to fossil fuel free cities. Teams of researchers at WWU and UW harvested solar energy through a special kind of pigment. These windows primarily collect energy data but have the potential to power the art gallery in the future.

7 Steam Plant

Western's campus relies on a natural gas-fired central steam plant and distribution system for hot water and heating. This accounts for 97% of Western's annual greenhouse gasses and 57% of the annual utility budget. While Western holds value to sustainability, there is work to be done, and the university is working to eliminate these impacts. The University has received $10 million in funding to shift away from steam plant reliance.

8 The Makerspace

The Makerspace, located inside the Engineering building, provides free access to equipment and training to all students. Tools like 3D printers, laser cutters, and sewing machines are partnered with an online canvas course providing education and a badge. Several events are hosted throughout the year, promoting creativity and community. Sustainable efforts employed in this space include the reuse of scrap material and equitable access to tools.

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Sehome Hill Arboretum spans over 175 acres with 6 miles of trails to explore. Open to Bellingham community at large and employed by a variety of classes, the Arboretum is an abundant natural space where the undisturbed processes of growth, competition, decay and succession can be observed and studied. Here, plant species native to Whatcom County and adjoining counties west of the Cascades grow in their natural surroundings.

10 Kaiser Borsari Hall

Kaiser Borsari Hall, opening for Winter 2025, is Western's new electrical and computer engineering, energy science, and computer science building. This building uses a net zero energy and carbon design, exceeding LEED certification standards. Solar panels on the roof will power the entire building. The building also uses local sustainably harvested wood that looks amazing and reduces carbon footprint. This facility will be the first publically funded zero-energy academic building on a university campus in Washington State.

11 Fairhaven College

Entrance

What was once an ivy covered slope, the Fairhaven College entrance has been transformed into a bed of native vegetation. As ground cover, Perennial Germanium was planted in order to outcompete and shade out the unwanted weeds such as Bindweed and Buttercup. These plants do not require much maintenance so besides occasional watering and hand-pulling, the dirty work is left to the plants.

Pond

At the center of the Fairhaven courtyard lies a miniature ecosystem that allows contact between wildlife and residents. Inside the pond you may find aquatic life including goldfish, frogs, water striders and a variety of birds. Two ducks have been consistently spotted visiting each spring.

Courtyard

The Fairhaven courtyard was another hillside covered in ivy that has been converted into a habitat for native plants. Plants such as Evergreen Huckleberry, Snowberry, Oregon Grape, and St. John's work serve as pollinators and take little maintenance to establish. The gardeners in the area choose not to use herbicides and instead rely on sheet mulching, mechanical removal, and establishing plants that will shade out the weeds.

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Online Version

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