Measuring Progress of Sustainable Behaviors through a City-Wide Go Green Week

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Abstract

The University of Worcester and the Worcester City Council asked our team to organize the city-wide Go Green Week in April 2019. With a focus on the Sustainable Development Goals created by the United Nations, we planned events to promote the awareness and understanding of sustainability in Worcester. In conjunction with local businesses and organizations, we engaged the public in a variety of activities, demonstrations, and giveaways. We concluded that Go Green Week 2019 was a success, but recommended enhancing future weeks by adjusting the choice of activities, venues, and timing, and management of social media.

Executive Summary

The goal of our project was to determine how to promote the sustainable development goals of the City and University of Worcester more effectively through Go Green Week. To achieve this goal, we identified three primary objectives.

1. We reviewed current and best practices in community engagement on sustainability issues;
2. Organized and implemented the 2019 Go Green Week in Worcester; and
3. Evaluated the effectiveness of the 2019 Go Green Week.

We met with representatives of the three main Go Green Week stakeholders: the University of Worcester staff and students, the Worcester city and council staff and elected officials, and local Worcester businesses. After meeting with these various stakeholders, we outlined a series of tasks: develop a thematic schedule for Go Green Week, identify and implement new ideas for activities to engage the public, assist in marketing and outreach, recruit local businesses and other community organizations, and create a Google pinmap of local green businesses.

We used the information and feedback various stakeholders to develop the thematic schedule for the week based on the Sustainable Development Goals as shown below. In addition to holding the annual *Feed the 1,000* and litter pick, we added several new events such as the sustainability dance performance, beeswax wrap tutorials, painting eggshell pots, therapy dogs, *Name the Polar Bear*, and recycled spoon crafts.

We ran a social media campaign that was primarily focused on a Go Green Week Worcester Facebook page and the University of Worcester Sustainability Instagram account. We posted pictures and videos leading up to the week to advertise the activities and organizations that would be in attendance.

Throughout the week's events, we administered a survey to assess public awareness and sustainable behaviors and compared the responses to last year's results. The questions asked individuals about sustainable practices such as mode of travel, recycling, and composting.

Overall, we felt that the city-wide Go Green Week was a success. We provided a week of engaging activities that highlighted the Sustainable Development Goals and created public awareness among the residents of Worcester. We had steady attendance at many of our events and participation in all of our activities. Our survey identified participants' sustainable behaviors and indicated where they can improve. Despite this, we have several recommendations that could improve future Go Green Weeks within the City of Worcester:

- Demonstrative activities seem to be the best for engaging our target audience. Food could be a larger part of the week to provide incentives. Pets As Therapy or similarly attractive activities could be repeated throughout the week.
- Host events at more highly populated areas such as on the High Street. Use tents and marquees in case of inclement weather, or choose sheltered locations in high traffic areas. We recommend having more locations to reach a more varied demographic of Worcester citizens.

- Consider holding events at various times, such as early morning, evening, and midday. Potentially hold Go Green Week at another time in the year, such as during the summer or autumn when the weather is more dependable and avoid major holidays.
- Social media outreach should be started earlier during the planning phase with frequent updates. Use accounts with more followers for the various social media networks. Identify interesting elements to feature in posts, such as dogs, food, children, and prizes. Utilize other social media networks, such as Twitter, to increase awareness and reach a more diverse demographic. Purchase social media advertisements to reach more people in the community.
- Avoid leading questions that force answers that are not useful. To help reduce the length, remove questions unrelated to sustainability practices and demographics. Have paper copies in addition to the tablets, as some respondents will prefer this method to fill out the survey. Ensure Wi-Fi is available at the locations of activities and events, or set up a wireless hotspot, or use survey software that does not rely on Wi-Fi access.

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5.5 Survey	Chris	N/A	Eva	Trent

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Chapter 1: Introduction

The United Nations defined “sustainable development [as] development that meets the needs of the present without compromising the ability of future generations to meet their own needs” back in 1987 (Kourdi, 2012). Currently, the UN promotes the 17 Sustainable Development Goals as worldwide standards ("Sustainable Development Goals”, n.d.). The United Kingdom has worked to be a leader in sustainable behavior and climate change action. The UK has set goals in their 25 Year Plan to Improve the Environment to create a cleaner more environmentally friendly nation (“A Green Future: Our 25 Year Plan to Improve the Environment”, 2018). One of the more influential organizations promoting sustainability in the United Kingdom is People & Planet, a university student network devoted to campaigning for human rights and the environment. Their work has encouraged sustainable development on campuses through various events and campaigns. People & Planet’s most recognized campaign is Go Green Week, a week-long sustainability event that spreads green awareness throughout university campuses. Some of these university Go Green Weeks were so successful that they garnered local attention from their communities. Universities are now partnering with cities to host city-wide Go Green Weeks to promote sustainability to all residents.

The University of Worcester has worked to create programs to promote green practices in students’ daily lives. The 10 Golden Rules Living Sustainably are used as a base for what students should do to be more environmentally friendly. In addition to the Golden Rules, the University also acknowledges the Sustainable Development Goals as markers for green behaviors. These have been implemented in their own outreach programs, in particular their Go Green Week that involves the local community in learning about sustainable practices.

The goal of our project is to determine how to promote the sustainable development goals of the City and University of Worcester more effectively through Go Green Week. To achieve this goal, we have identified three primary objectives:

1. Review current and best practices in community engagement on sustainability issues.
2. Organize and implement the 2019 Go Green Week in Worcester.
3. Evaluate the effectiveness of the 2019 Go Green Week.

We interviewed the University of Worcester staff and students, and representatives of the City and County Council, and local businesses to assess past Go Green Weeks and learn how to enhance Go Green Week 2019. We also ran events during the week and conduct surveys to

determine the success and the impact of Go Green Week. We used the surveys to assess public awareness and the overall sustainability practices of the city of Worcester.

Chapter 2: Background

This background section starts with a general overview of sustainability internationally and in the United Kingdom. We discuss the specific policies of the United Kingdom and their actions to move toward a more sustainable nation. We then discuss the Worcestershire County Council and the Worcester City Council's efforts to promote sustainability in the city of Worcester. Next, we explain the University of Worcester and their policies for sustainability, and we discuss how their university is the driving force for the city-wide Go Green Weeks held annually in April. After highlighting the main aspects of Go Green Week, we discuss the literature on current and best practices to engage city residents in promoting sustainability. This information helped us understand how to best improve upon previous Go Green Weeks and better engage the community in sustainability practices.

2.1 United Nations Sustainability Goals

The United Nations in 1987 defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987). Since then, academics and policy makers have explored how to refine and operationalize the concepts and definitions of sustainable development. Sustainability captures many different realms and has been defined by the three pillars of environment, social justice/equality, and economy. Making a more sustainable world is about implementing an economic system that does not compromise social equality or harm the environment (Kourdi, 2012).

Most recently in 2015, the United Nations identified 17 Sustainable Development Goals at the UN Sustainable Development Summit in New York. These goals address a wide variety of topics from poverty and hunger to sustainable cities and communities (Figure 1). The UN has set an ambitious target to achieve these goals by 2030 (United Nations, n.d.).

Figure 1 ("The Sustainable Development Goals: One Year On", September 26, 2016)

2.2 United Kingdom Policies

Addressing climate change has been a primary focus of the sustainability movement, and the UK presents itself as a model for other nations on climate change legislation. In 2008, the UK passed the Climate Change Act which sets a greenhouse gas target of an 80% reduction based on 1990 emissions with a goal to reach this by 2050. There has been some institutional innovation and some positive policy feedback in the business community, but it has been difficult to obtain full political commitment on a carbon budget and the decarbonization of electricity production, and the full impact of the law is still open to question. Political conflicts have caused some uncertainty and limited promised funding that has thrown the Climate Change Act further into question (Lockwood, 2013). In the *25 Year Plan to Improve the Environment*, the UK government set several general goals including: clean air, clean and plentiful water, thriving plants and wildlife, reduce the risks of harm from environmental hazards, use natural resources more sustainably and efficiently, enhance the beauty, heritage and engagement with the natural environment, migrate and adapt to climate change, minimize waste, manage exposure to chemicals, and enhance biosecurity (DEFRA, 2018). Some more specific goals are to minimize waste by eliminating avoidable plastic waste by 2042 and all avoidable waste by 2050. Development of bio-based and biodegradable plastics will be encouraged as well as using easily recyclable materials. The government has allocated £54 million for research and development of plastics that can be reused and have less environmental impact. Other goals are to end food waste in landfills by 2030 and working toward better redistribution of unsold edible food and ending

the sale of new petrol and diesel motor vehicles by 2040 (DEFRA, 2018a). One way the UK hopes to reach the goal of no food in landfills is through campaigns like Love Food, Hate Waste. This campaign offers many ideas for people to reduce food waste, such as recipes for leftovers, and ways to make food last longer (Food Waste Costs, 2014). The UK has set 2020 targets to improve renewable energy practices under the National Renewable Energy Action Plan. The targets include using renewable energy to meet 31% of electricity, 12% of heat consumption, and 10% of all other energy demands. These goals will be met by financially supporting renewables, removing restrictive policies, and endorsing new technologies (European Commission, 2017).

These are ambitious goals, but some take a sanguine view about how forcefully they will be pursued in coming years. Based on the UKSSD report, the UK government has still not published plans on how they will set the fourth and fifth carbon budgets which could limit progress in reducing emissions. Although thriving plants and wildlife is listed as a goal, protected species still have a high risk of extinction and 15% of the 8,000 species in the UK are at risk of going extinct. Much of this threat to biodiversity is a result of UK policies that favor agricultural land-use change and only 10% of UK land is protected for biodiversity. Overall, the progress the UK has made is not at a point that meets the goals of sustainable consumption production when it comes to emissions and global raw material demand (UK Stakeholders for Sustainable Development, 2018). However, there is still progress being made and many previous central government policies have had trickle down effects at the local and regional levels as cities strive to lower carbon emission and combat climate change.

2.2.1 Sustainability Perspective

Although there is a lot public support for sustainability in general and "going green" in particular in the United Kingdom, it has been hard to engage the majority of people in actually changing their habits. As seen in Figure 2 below, many people engage in recycling, but far fewer people buy environmentally friendly products, and there has been little change in behaviors since 2009. Another indicator of the difficulties of promoting sustainable behavior is that the number of people who volunteer to care for the environment or are part of environmental or conservative groups have remained small and relatively static in recent years (DEFRA, 2018b).

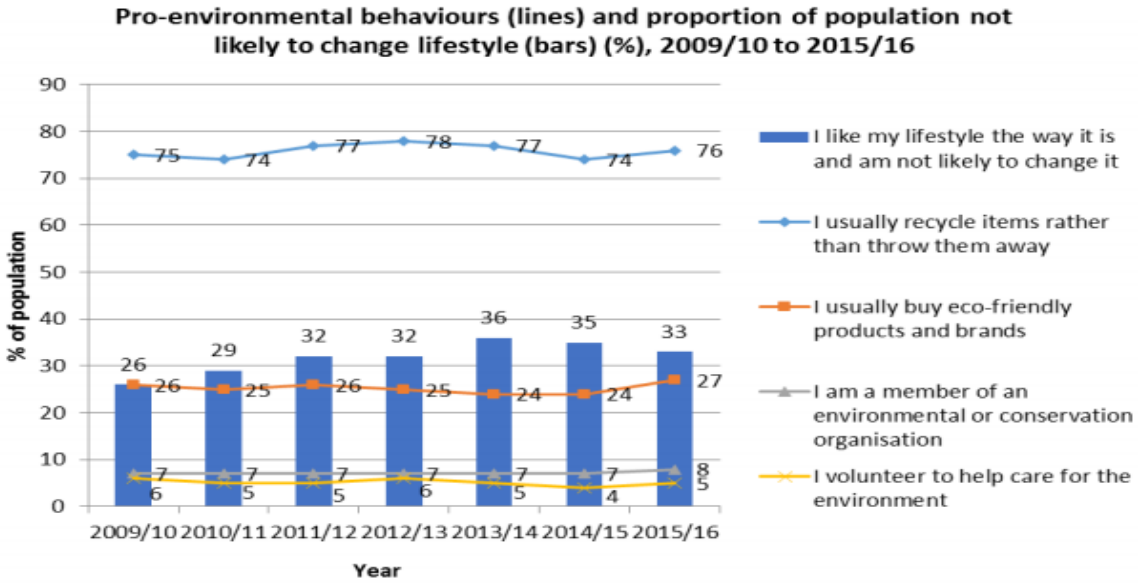

Figure 2 Environmental Behaviors in the United Kingdom (DEFRA, 2018b)

In the UK a study was conducted with 659 residents from 13 new developments with sustainability features. It showed that most people cared about environmental issues in urban UK developments. They were generally aware of environmental issues. The study was primarily in relation to sustainability in mode of travel and showed that although people cared about environmental issues, these concerns did not always mirror their form of travel and cause them to travel more efficiently (Susilo, Williams, Lindsay & Dair, 2012).

2.2.2 Other Universities Go Green Weeks

Many UK universities are trying to promote greater awareness of sustainability through their curriculum, research, operations, and outreach. Several have participated in Go Green Weeks. The University of Manchester works to get the campus involved with the help of the Environment team. They have hosted events such as film, screenings, lectures, tours, trainings and socials to get the campus involved (University of Worcester Students, 2017). Some of their more elaborate events were Pop swap which is a pop-up clothing and book store to promote sustainable fashion ("Manchester Metropolitan University, 2017). The University of Leicester also hosts Go Green Week. In 2017, they hosted 17 events and programs including a bag-making workshop and a bike program where 20 used bikes were purchased after repair and refurbishing and walking pledges (University of Leicester, 2017). The University of Bedfordshire held a Go

Green Week last year from February 19th-23rd. Each day had a theme: Recycling Monday, Switch It Off Tuesday, Reusing Wednesday, Cycle to Work Thursday, and Fair Trade Friday. These themes and programs helped get the campus involved (University of Bedfordshire, n.d.).

2.3 Worcester City and County Councils

In 2003, the Worcestershire Partnership published Climate Change Strategies in the Country. Its revised version in 2008 was nationally recognized and the new strategy covers the years 2012-2020. The aims are to create a low carbon economy, hit hard carbon targets, adapt to climate change, and empower the community to take part and participate (Worcestershire County Council, 2015).

The Worcestershire County Council has a department dedicated to environmental services. These services directly relate to going green specifically in its initiative to promote recycling and reducing waste. They have a program called 'Let's Waste Less' that provides information on food waste, composting, and seasonal tips to reduce rubbish (Let's Waste Less, n.d.). The Council reports that roughly one-third of the rubbish generated by citizens is recycled and hopes to improve that number to 50% by clarifying for citizens what can be recycled, including certain items such as steel and aluminum cans, and rinsed bottles (Worcester News, 2018). In total, Worcestershire residents pay £5 million annually in taxes for landfills, and a further £700 per family on food that is wasted (Worcestershire County Council, 2014).

The County Council is also encouraging the use of electric vehicles by installing charge points to provide convenient places to recharge. Electric vehicles have become increasingly popular in Worcestershire in recent years (Worcestershire County Council, n.d.).

Worcestershire County Council focuses on the impact of human action on animal and plant life in the county as well. The county council refreshed their five areas that had the most potential for success in improving biodiversity (Worcestershire County Council, n.d.b). Identifying the five areas led to the formation of the 2018-2027 Biodiversity Action Plan, or BAP. Within this one overarching program, 17 habitats and 26 species or species groups each have an individual action plan (Worcestershire County Council, n.d.). These plans cover many different conversations efforts, including assessing the status of biodiversity, identifying potential threats, developing partnerships, and strategies to achieve the goals during the ten-year period (Worcestershire County Council, n.d.).

The Worcester City Council has set goals for shaping Worcester into a more sustainable and successful city. The Council has established the Worcester City Plan for 2016-2021 to work on "Building a Successful Future on 2,000 Years of History" (Gregson, Bayliss, & Stephen, n.d.). The Council wants the city and its people to work to sustain and improve the environment for the present and to maintain it for the future. They want to improve the air quality, create more travel choices, create a riverside plan for the River Severn, improve flood resilience, and source more renewable and affordable energy. These measures also focus on reducing CO_2 emissions and reducing the number of homes in fuel poverty (Gregson, Bayliss, & Stephen, n.d.).

The Worcester City Council supports Transition Worcester, a community group whose mission is to lower carbon emissions. (Worcester City Council, n.d.a). Transition Worcester is a part of a larger community called the Transition Movement, which is a network of towns and cities promoting greater sustainability in urban areas. The Worcester City Council has been working with Transition Worcester to explore ways to lower carbon emissions in the city. Transition Worcester holds regular meetings for all interested members of the community (Worcester City Council, n.d.b).

The Worcester City Council engages the community by setting an example of how to be sustainable. Particularly, they aim to be more resource efficient and reduce CO_2 emissions by 20% by 2021. To accomplish this, the council is attempting to reduce reliance on fossil fuels and encourage the use of renewable energy sources. Council buildings are constructed and remodeled to be as sustainable and efficient as possible and all facilities have efficient methods of waste prevention, reduction, and recycling. Other council efforts include limiting staff travel by encouraging online meetings, installing more energy efficient street lighting, and purchasing more fuel-efficient vehicles. The council would like to raise staff awareness of environmental sustainability, however in 2016/2017, only 15 members of staff attended an annual "introduction to sustainability" course, and only one member completed the sustainability e-learning modules. This is an area of future improvement (Worcestershire County Council, 2015).

The Worcester City Council values the education of children on environmental sustainability. The Council supports the Eco-schools program in Worcester and is integrating sustainable practices into the school curriculum through a nine-step process. Eco-schools is an international award program that aims to encourage the education of students about ways to improve the environment. Nunnery Wood High School was the first school in Worcester to

achieve the Eco-Schools highest award, the Green Flag, in 2006. They have been the 'beacon' school in Worcester County since then and have continued to garner additional Eco-School awards. Students and a member of staff at Nunnery Wood created a low cost dome home that is used as a multicultural space for the high school. Another school project was creating blazers made out of recycled plastic bottles. The trial went so well that they expanded the eco-friendly uniforms to all students at the high school. They also produced vegetables for lunches in raised beds on a plot of unused land (Worcestershire County Council, 2016). These projects teach students valuable sustainability skills and more importantly, they encourage students to go out and continue making sustainable improvements in the world. The community and local government supports these projects because they help raise a generation that will be more aware of sustainability issues and how to address them.

In January of 2019, Worcester City Council supported an organization known as Plastic Free Worcester that resulted in the banning of all single use plastic from council buildings and events (Worcester City Council, 2019). The ultimate goal is to show local businesses and other organizations how to go plastic free. As a result of these efforts, plastic waste has decreased, but the total volume of litter remains a problem (W. Neale, personal communication, March 25, 2019). Much of the city council's focus has been on employing practices that are more sustainable with a priority on cleaner air emissions (W. Neale, personal communication, March 25, 2019). As part of these efforts, the council is encouraging staff to walk from building to building, share cars, and use electric cars, when possible.

Although Worcester has been trying to reduce CO_2 emissions, a study coordinated by the Department of Business, Energy, and Industrial Strategy (BEIS) found that emissions from vehicular travel has increased in the Worcester area from 2017 to 2018 (Transport Emission, 2018). Gareth Redmond-King who is "the head of climate change at the World Wildlife Fund UK" claims that the British have begun adopting the American desire for unnecessarily large vehicles, which in turn are less fuel efficient and create more CO2 emissions (Transport Emission, 2018). Cars and other forms of motorized travel all release CO2, while the most sustainable forms of travel are bicycles and walking. There are many ways to mitigate the adverse effects of motorized transport while still maintaining convenience and speed, such as carpooling, car shares, and public transit. The same study reported that Industry and Commercial Activities and Domestic totals for CO2 have decreased by 15% and 4.2% respectively

(Department of Business, Energy, and Industrial Strategy, 2018). Many experts claim that many improvements that can still be made, such as better insulation of homes and encouraging energy efficient behaviors (Transport Emissions, 2018).

2.3.1 Sustainability Awareness

Unfortunately, sustainability issues like pollution do not figure prominently among the concerns of the public. For example, Figure 3, from the Worcestershire Viewpoint in June 2018, shows that people are more concerned about issues like road improvements, health services, public transport, and crime than they are about pollution. Nevertheless, sustainability issues like decent housing, clean streets, access to nature, and parks and opens spaces are considered important to the quality of life, while public transport and traffic congestion are seen as problems that need to be addressed. Although, these aspects are important to a more sustainable community, there is a need for more community engagement to encourage residents to care more about reducing pollution.

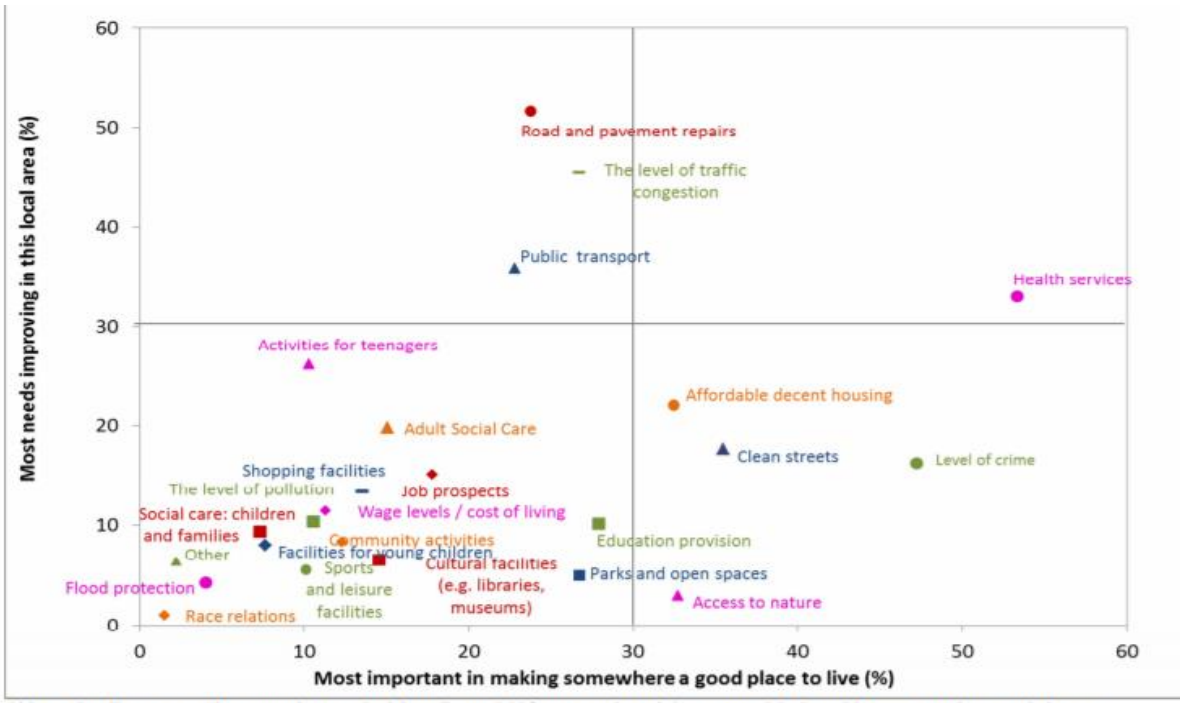

Figure 3 Viewpoints on Community Issues (Worcestershire County Council, 2018)

Previous Interdisciplinary Qualifying Projects (IQPs) organized and evaluated Go Green Weeks in Worcester, UK in 2017 and 2018. In 2017, they surveyed 105 people during the course of the week-long festival. Ninety-seven percent of respondents indicated that "sustainability issues [were] important to them" and 92% said "[they] had a strong understanding of what sustainability actually means" (McCarthy, Hacker, Locke, White, & Colpritt, 2017). These questions are quite broad and do not reference the SDGs, so a direct comparison cannot be made with the study by the NUS. However, the survey still does show that some citizens of Worcester are aware of sustainable efforts and believe they take actions that support it. In 2018, Romero, Baker, Lindberg, Sanchez, (2018) surveyed 120 people during the course of Go Green Week and looked at green behavior of citizens of Worcester. About 75% of respondents knew a fair amount about recycling, 84% of people use reusable cups always or sometimes when going out, 77% said they always turn off lights when leaving the room, and 59% indicated they switch off electrical appliances when not in use. Although this was a small data pool, this shows how people are aware of green behaviors and that more than half of people are following more sustainable ways of everyday living.

2.4 University Go Green Weeks

The Sustainability Department at the University of Worcester strives to educate its students and faculty on how they can contribute to a greener and more sustainable campus. Since becoming a university in 2005 they have consistently been recognized for outstanding sustainability practices. The 2019 Strategic Plan emphasizes that sustainability will continue to be a key practice (Bateman & Green, 2019). They continue to benchmark to the SDG Accords, and have campus groups like the Sustainability Strategy Group to report on individual activities ("What We Do", 2018). One infrastructure development is the Hive which is an energy efficient library that the University shares with the Worcester community ("HRH Prince Richard The Duke of Gloucester", 2012). It has biomass boilers that burn organic material to heat the building which makes it a carbon neutral fuel as it only releases the same carbon dioxide back into the atmosphere. The Hive also uses the River Severn as a heatsink to cool concrete slabs, rainwater harvesting for flushing and washing requirements, and is built to maximize daylight to reduce energy consumption (The Hive, 2017).

The University of Worcester implements many initiatives that are focused around reaching the 40% carbon reduction goal they set in 2014. The school's continued growth has challenged their ability to achieve the goal, but the Woo Bikes, Liftshare, Green Impact and Student Switch Off programs are just some of the efforts that are intended to limit carbon reductions (Boom, 2014). The University has managed to reduce carbon emissions by 3% from 2015-2020 based on the 2008-2009 measurements (Figure 4). Waste and recycling and water usage emissions have also decreased since the goal was set, showing that progress is being made. These are based on using water to create energy and leak detection and water saving projects (University of Worcester, n.d.a).

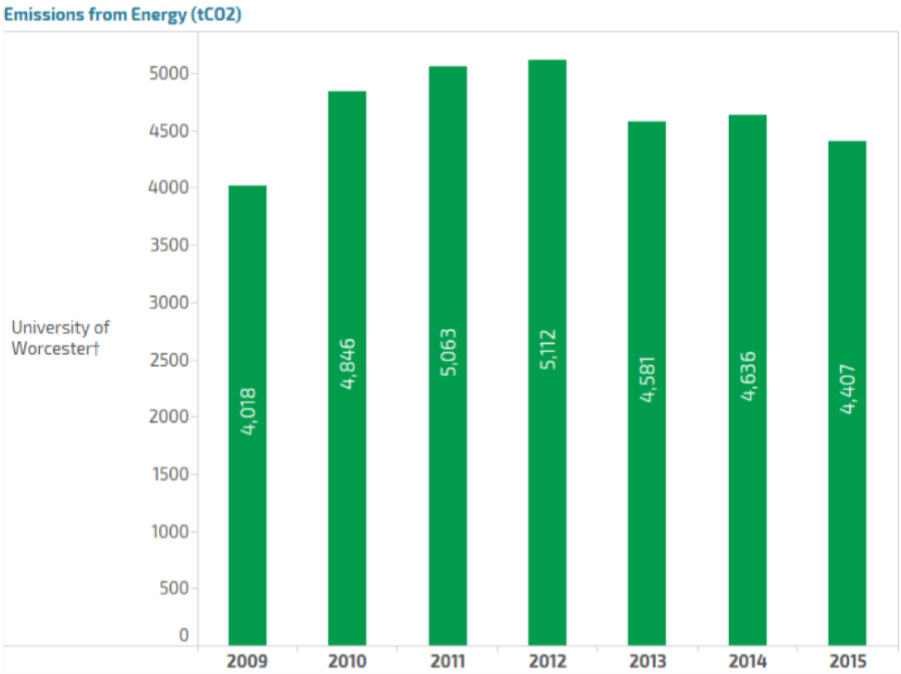

Figure 4 Carbon Emissions in Tonnes of CO2 for University of Worcester (Boom, 2014)

The University was the first English University to be awarded the EcoCampus Platinum Award for its actions in environmental responsibility in June 2010. The University ranked fourth in People & Planet University League assessment of the UK's greenest universities in 2017 (University of Worcester, n.d.b).

The University has worked to create programs to promote green practices in students' daily lives. In the past, the 10 Golden Rules Living Sustainably (Figure 5) were used as a base for what students should do to be more environmentally friendly. In addition to the Golden

Rules, the University also acknowledges the SDGs as markers for green behaviors. The University's Vice Chancellor and President of the Students' Union have signed the SDG Accord and have stated that the university is committed to environmental issues and that research at the University includes river management, sustainable agriculture, and environmental education (University of Worcester, 2018b). In the month of January 2018, roughly 1600 students nationally were surveyed regarding their knowledge of the Global Goals. Of those asked, 67% reported that they did not know what the SDGs were prior to partaking in the study (National Union of Students, 2018). When asked if they agreed or disagreed with the statement of "I'd like to be more involved in action that helps to achieve the SDGs", 50% of participants agreed, far more than the roughly 5% of people nationally that claimed to volunteer in green activities (National Union of Students, 2018).

10 Golden Rules Living Sustainably
1. Drink tap water, or use a fountain on campus
2. Use active transport
3. Reduce paper use
4. Eat more locally/minimally processed grown food
5. Turn off lights and electronics when not in use
6. Turn down thermostat
7. Use reusable cups
8. Hold video conference instead of travelling to meetings
9. Only fill kettle with the amount of cups you need
10. Think before you buy

Figure 5 ("10 Golden Rules Living Sustainably", n.d.)

2.4.1 Go Green Week

One of the most visible ways the University of Worcester promotes sustainability is through annual Go Green Weeks, which is the focus of this project. For the last few years, the University of Worcester has hosted a campus-wide Go Green Week in February based on People

& Planet's model. People & Planet is a university student network that unites students through campaigning for human rights and the environment. In 2012, People & Planet developed a model to promote sustainability on university campuses through Go Green Weeks through a week-long event that engages students and encourages them to adopt sustainable behaviors. Using this model, the University has run their own versions of this national event.

At the University of Worcester, students in the freshman introduction course on sustainability help plan, market, and run the events (University of Worcester, 2017). Go Green Weeks span five days with each day of the week focusing on a specific aspect of sustainability, such as reusing materials, food and health, reducing consumption of energy and materials, energy, nature, or transportation. These events occur on campus and promote sustainability through behavioral changes that are realistic for university students to adopt. Past Go Green Weeks have educated students about local sustainability issues through Worcester's 10 Golden Rules. Through the events and activities, the students became more informed about sustainability and have started changing the culture of the University of Worcester.

As the University of Worcester gained recognition for their Go Green Weeks and became one of the greenest universities in the UK, the city of Worcester took notice. The University of Worcester partnered with the Worcester City Council to host a city-wide Go Green Week in April 2017, and it was so successful that the city-wide Go Green Week became an annual event. Following the same format as the university Go Green Week, the city week spans five full days and is open to all residents, businesses, and other organizations of Worcester. The city-wide Go Green Week themes correspond with aspects of the three Strands of Sustainability and work to achieve Worcester's goal of sustainability, as seen through last year's thematic schedule (Figure 6). The activities during Go Green week are generally hands-on, engaging events that are partially sponsored by local businesses. This event helps local businesses raise awareness of their practices and promotes sustainability.

The University has been using annual Go Green Weeks in the spring as a way to engage the community with events and activities that are both interesting and informative. Because the Go Green Weeks hosted in April have no budget, local businesses and organizations volunteer to run events and donate material. As a result, many different businesses promote sustainability throughout the city and help residents become more aware of sustainability issues. In 2018, Worcester's Go Green Week success earned the city and the university a Green Apple Award for

their hard work. The *Feed the 1,000* in particular helped visibly promote sustainability

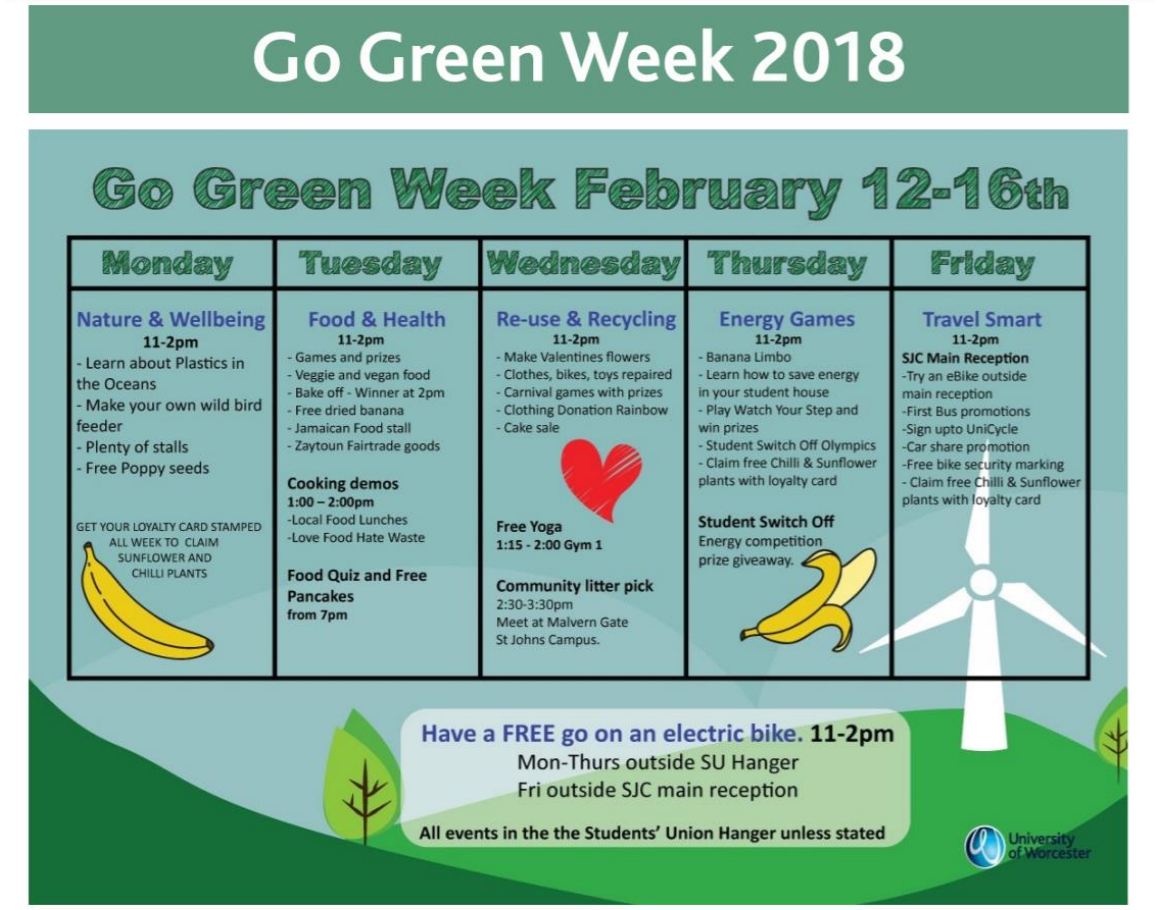

Figure 6: Go Green Week 2018 Schedule (Romero et al., 2018)

throughout the city. This event provided the 1,000 meals to the public through the donations of local food producers. The 1,000 meals served demonstrates the estimated amount of annual food wasted by the average UK household. This event simultaneously taught community members the value of reducing food waste as well as provided a free meal. A separate event taught participants how to make origami fish out of recycled paper retrieved from the community resource exchange, again giving a resource that was believed to be useless a purpose (Boom, 2018).

2.5 Engaging the Community

Current community engagement lacks meaningful actions taken by community members who agree that environmental sustainability is an issue. Fewer than 10% of residents in the UK have contacted their government officials about environmental issues or been active in environmental protests, while 99% have demonstrated some concern for the environment by saying they recycle occasionally. A reason for this is that a majority of the community in the UK, 54%, believe that if they change their behavior, it will not have any impact on the environment (Whitmarch, 2018). This shows that past efforts to engage the community have not been enough to create a significant change in the community. Analyzing how to best engage the community in behavioral change is a good course of action towards a sustainable future.

There are several strategies that can be used to create environmental behavior change in a community. One strategy is information based, where information is used to increase public awareness of issues in the community. The theory is that new information will cause people to reevaluate their current actions and change their behavior accordingly. The second step of this strategy is to persuade them to change through targeted questions, such as how they intend to change their habits and behaviors or if they intend to change at all, and providing them with reasons to change, such as benefits and incentives to change their behavior (Steg & Vlek, 2009). For example, the Economy 7 energy plan in the UK provides incentives for members of society who use electricity at night, such as laundry, by reducing electricity rates during specific hours (Centre for Sustainable Energy, 2013). Finally, the provided informational strategy is most effective when the required change is easy to accomplish, such as remembering to turn off lights when not in use or running laundry at night.

Another strategy available to communities seeking to change environmental behavior is the structural strategy. This is a variant of the carrot and stick method where good behavior is promoted while negative behavior is punished. This strategy targets the systems and policies in place rather than the people. The theory here is that people will be more likely to make environmental behavior changes if there are incentives to do so and consequences if they do not. This strategy works best in situations where the cost of the desired change is high, such as energy use, fossil fuel usage, and recycling responsibly. In both information and structural strategies, it is also important to listen to the public's opinion. For the information strategy, finding out what particular events or methods are most interesting and effective will help improve the resulting

number of people who changed their behavior. For structural, finding where incentives would be used in the community and what limits the punishments should be set to are very important for keeping public interest and appeal. It is important to find incentives that are interesting and worth the requested change, as well as punishments that are not too severe (Steg & Vlek, 2009).

Figure 7 compares three types of community engagement from a business standpoint. Transactional engagement practices involve community investment by a company or organization without the organization committing to the actions themselves. Transformational engagement works more in partnership with community leaders to encourage change in behaviors. Transactional engagement is easier for a company to implement than transformational and therefore there are more studies available to analyze. Transitional is the compromise between transactional and transformational, where you have partnerships in mind, but the execution is quite the same. The three different type of engagement all operate at varying levels of depth within the community. Transactional is considered an arm's length partnership. Transitional uses interactive collaborations, while transformational utilizes intensive alliances as ways to cooperate with the community (Bowen, 2008). The following studies show different variations and combinations of the above strategies and practices used and analyze their effectiveness.

DIMENSION	TRANSACTIONAL ENGAGEMENT	TRANSITIONAL ENGAGEMENT	TRANSFORMATIONAL ENGAGEMENT
CORPORATE STANCE	"Giving Back" Community Investment	"Building Bridges" Community Involvement	"Changing Society" Community Integration
COMMUNICATION	One-way	Two-way	Two-way
NUMBER OF COMMUNITY PARTNERS	Many	Many	Few
FREQUENCY OF INTERACTION	Occasional	Repeated	Frequent
NATURE OF TRUST	Limited	Evolutionary	Relational
LEARNING	Transferred from firm	Transferred to firm	Jointly generated
CONTROL OVER PROCESS	Firm	Firm	Shared
BENEFITS AND OUTCOMES	Distinct	Distinct	Joint

Figure 7 Three Types of Community Engagement (Bowen, 2008)

A study conducted in the UK evaluated the effectiveness of government policies on the community. The goal of the study was to show that the old method of pro environmental behavior change is not effective. In the past, the UK used three tactics to encourage behavioral

change, providing information, regulations, and fines. The study concluded that a wider systems approach is necessary (Lucas, 2008).

The study came to several conclusions about how to successfully engage the community. Policies need to have a consistent message in order to make it clear what needs to change to the community. Multiple policies may have the same goal of improving the environment, however they may have different ways of achieving that goal, and these ways may contradict one another. This renders one of the policies pointless. Policies that are developed by the community are more likely to be followed. It is also important for the community to have the capacity to handle the change. A community can only do what it is capable of doing, regardless of the incentives or risks involved. It is also beneficial when the community is in control of the policies. Not all changes can be achieved through the same universal action, so if they are in control of what actions they take, they are more likely to achieve the national policies objective. Causing several behavioral changes across the community at the same time improves the effectiveness of each individual change, as they all support one another. Finally, it is important that the government lead by example, to show that the government is also committed to the changes they are suggesting (Lucas, 2008).

Another study that surveyed visitors of the Islington Green Living Centre over a 4-week period and 1,000 random Islington residents analyzed their motivations to visit, their impression of advice available, environmental attitudes, and reported behaviors. The survey that involved the residents concluded that enthusiasm towards lifestyle change and sustainability projects such as the Green Living Centre was mixed. They recommend more awareness raising and tailoring support systems that encourage sustainability to the community's needs (Peters, 2010).

Other research has indicated that engagement is most attainable through having people do community-based activities which in turn have immediate benefits: cost savings, pleasure, sociability, sense of achievement, community, self-expression etc. Sustainability, climate change, and "going green" education is more achievable if they are immersed in enjoyable and beneficial activities. Although, these beneficial activities help promote education, they do not necessarily lead to any lifestyle change. The public is more motivated when engaged in new provisions that provide a better product or service. Participating in these better provisions then leads to changes in thinking, values, and behavior because of the shaping influences of the institution. Local food systems are a common example as they provide a better product that then

changes people's lifestyles as they shop more organic and become more environmentally aware (Seyfang, 2012).

Another aspect of our project that we must consider is how to fundraise. We must organize and run Go Green Week without a budget. We must reach out to businesses and organizations to get their involvement and to receive donations. Bryan Miller discusses in Community Fundraising 2.0 how to get fundraising in the modern world. Due to interconnectivity and how busy people are in today's world, the average person can't be bothered to stop what they are doing to listen or help with something they don't care about. To get people's attention and involvement, we have to make them interested in us. We have to be what they are interested in to get through to them, instead of trying to divert their attention. In order to fundraise, we need to make ourselves wanted by businesses and organizations to get their involvement. To do this we should convince them that funding and helping us in their best interest. We can offer incentives such as advertising to help us.

Miller continues to say that in the past, getting donors to spread the word to other potential donors was not as effective. But with the advances in communication and change in the social dynamic of connectedness, one donor can publicize and reach out to thousands of people who are interested. Sharing on Facebook or other social media outlets allows people who want to get others interested in an event to easily share their enthusiasm. Large organizations that have a public presence and a good foundation are a good starting point for our outreach.

Our research suggests that we need to have a balanced approach that uses mass media and fundraising to reach our goals. Having activities that are engaging while remaining informative is essential to leaving a lasting impact on attendees. Getting local businesses and organizations engaged in promoting sustainable changes that are feasible help create slow progressive change in the community by setting examples. Making fundraising beneficial for the donor as well will encourage more donations to help make our week more appealing. Finally, using as many social media outlets and getting organizations and businesses to share our events will get the most amount of people informed of Go Green Week.

Chapter 3: Methodology

The goal of our project was to determine how to promote the sustainable development goals of the City and University of Worcester more effectively through a Go Green Week. To achieve this goal, we identified three primary objectives:

1. Review current and best practices in community engagement on sustainability issues.
2. Assist in organizing and implementing the 2019 Go Green Week in Worcester.
3. Evaluate the effectiveness of the 2019 Go Green Week.

We used a variety of methods to achieve these objectives. We consulted students and staff at the University of Worcester as well as city council officers and elected members on the effectiveness of previous Go Green weeks. We talked with local businesses and other organizations to gauge their involvement and support for Go Green Week. We also developed a Google pinmap to display the green businesses in the community. To evaluate the effectiveness of Go Green Week, we solicited the opinions of various stakeholders through surveys and interviews.

3.1 Objective 1: Reviewing Current and Best Practices

We built upon our background research about sustainability and community engagement by interviewing organizers of Go Green Weeks and similar sustainability events in the community of Worcester. In each interview we used a preamble (see Appendix A) that details the research and describes the interview process. We recorded the responses when given permission. We also asked permission to quote an interviewee and let them review any use of their responses in the interview before publication and gave them the choice to be anonymous. Two members of the team conducted each interview: one asked questions and one took notes.

This deeper research specifically included talking to other universities in the UK about their Go Green Weeks. We reached out to organizers at the University of Bedfordshire and the University of Leicester to discuss their Go Green Weeks via email. We also contacted the Environment team on the Manchester Metropolitan University campus to learn what events they have planned and how best to promote going green. We hoped to learn how they encourage on-campus participation and what events and incentives are best received from the attendees. These universities are valuable representatives for Go Green Weeks because they are in the UK and have had successful programs for multiple years. We also contacted last year's WPI Go Green

Week team to ask them about how they ran the week and specifically how they handled *Feed the 1,000*.

We met with representatives of the three main Go Green Week stakeholders: the University of Worcester staff and students, the Worcester city and council staff and elected officials, and local Worcester businesses. We talked specifically to Katy Boom face-to-face about past Go Green Weeks and her experience in engaging the campus. She provided us with her perspective on which programs during the week were successful and what we would be able to continue this year to make the most impact. She provided a list of businesses that participated in Go Green Week on campus in February 2019 (Appendix B) that we could contact for support. She also helped connect us with students who worked on Go Green Week on campus to see what they thought worked and did not work to engage the community in sustainability and help plan for the week. We met specifically with Kateřina Gregarová who assisted with running the events of Go Green Week on campus in February 2019 and about her experiences and her thoughts on the upcoming Go Green Week in the city. We talked to the Worcester City Council staff and officials to learn more about past campaigns to promote the Sustainable Development Goals in the city. We interviewed Warwick Neale and Nathan Gunnell about their past successes in implementing sustainability changes and what ways we could engage the most community members during the week. We also interviewed Rebecca Lashley from the Worcestershire County Council to understand the environmental services they offer in the community and what we could focus on for the week.

We contacted Nadja von Dahlen-Andrews from the Worcester Business Improvement District (BID) about how to best represent businesses in Worcester. We received contacts from her as well as free advertisement of the week through their social media and e-bulletin. We also approached other businesses that are not in the Worcester Business Improvement District to get more input and participation. We reached out to Transition Worcester since they were heavily involved last year, but did not receive a response. Based on the lists we were given by Ms. Boom, Nadja von Dahlen-Andrews and from exploring Worcester, we created a list of places to contact (see Appendix D) to donate items, advertise, or participate during the week. We used these donations and activities run by businesses to entice people to come and inform the public about sustainability.

3.2 Objective 2: Organizing and Running Go Green Week

We used the information gathered from stakeholders under Objective 1 to shape the organization and implementation of Go Green Week in 2019. Our major tasks to achieve Objective 2 were to develop a thematic schedule for Go Green Week, identify and implement new ideas for activities to engage the public, assist in marketing and outreach, recruit local businesses and other community organizations, and create a Google pinmap of local green businesses.

Our team assisted Ms. Boom in developing a thematic schedule for Go Green Week similar to the schedule for 2018 (Figure 6). Each day of the 2019 Go Green Week (April 9-13) focused on a specific aspect or goal of sustainability. We consulted with Ms. Boom and other stakeholders to schedule various events each day that fit with the themes, as well as provide a full week of activities. This year, the themes for Go Green Week focused on the Sustainable Development Goals, so we utilized our previous research to plan the thematic schedule.

As part of scheduling enough events to fill five days, we identified and implemented activities that best promote the daily theme. From the research we conducted under Objective 1, we had a broader understanding of different types of activities that have been more successful at engaging the community. We used that information to plan and suggest activities that would best help encourage the residents of Worcester to engage in sustainable behaviors.

We also created and delivered our own innovative events that contributed to one or more of the daily themes. During past Go Green Weeks, WPI students designed and ran several different sustainability events. These events had some interactive element like an activity or giveaway. For example, last year's Go Green Week featured a recycled origami fish activity to complement the Fishy Parade (Romero et al., 2018). At this event, the WPI team helped teach attendees how to make origami fish out of recycled paper. This group also helped organize the *Feed the 1,000* event, where local culinary students used donated food to prepare 1,000 meals, and a Litter Pick among other WPI teams (Romero et al., 2018).

In order to run these events, we recruited local businesses and organizations to help sponsor or participate in Go Green Week. We used the information from Objective 1 to create Appendix C, which is a list of all the businesses that previously sponsored and/or participated in past Go Green Weeks. From this list, we approached local businesses and solicited their support. We created flyers and an elevator pitch to introduce Go Green Week and ask for support. Based

on feedback from past years, we specifically focused our conversations to ask for either direct participation or giveaways for Go Green Week.

To promote the events and encourage attendance, our team ran a marketing and outreach campaign. To understand how to best reach the residents of Worcester, we talked with stakeholders and our sponsors to implement the best marketing campaign. Past WPI teams have suggested using social media outlets such as Facebook and Instagram, as well the University of Worcester's sustainability website. Katy Boom's sustainability Instagram was used @uwsustainability. Starting two and half weeks before Go Green Week, we created posts every week day and some weekends. The posts include videos of event preparations, Boomerang videos of prizes, and pictures of the location and different activities that would be at the events. The posts informed people that Go Green Week was happening and continued to remind them of the dates. Additionally, we were able to refer businesses and other organizations to our pages for more information. For example, the Facebook page and Instagram account were shared with Worcester BID, Worcestershire County Council, Worcester City Council and the University of Worcester.

Using Katy Boom's account, we created a Facebook page, @WorcesterGGW, and shared administer privileges with all four members of the team. We used the thematic schedule to promote the week and used it as our banner on our Facebook page. We created Facebook events for each day of Go Green Week on the page with dates, times, and locations. We used images and descriptions to make the events seem more enticing. The images included pictures from past *Feed the 1,000* and litter picks as well as images of activities that would be taking place. Posts were added to the page that included videos, photos, and reminders of the events that were happening during Go Green Week. The videos included making beeswax wraps, the t-shirts for the Sustainable Development Goals, and arts and crafts.

Other WPI groups suggested that all activities and schedules be planned by the end of the fourth week onsite, since this allows our group to distribute the correction locations and times to the general public (Romero et al., 2018). We documented Go Green Week through photographs and video recording. The marketing campaign provided incentive for local businesses and organizations to be part of Go Green Week, as it will provide publicity for their respective businesses. Additionally, running a marketing campaign spread awareness of Go Green Week as

a whole, which familiarized local businesses with the event, increasing the likelihood they participated in this year's Go Green Week or in future ones.

For Go Green Week 2019, we created a Google pinmap tour that includes the locations of businesses that assisted with Go Green Week. This Google pinmap tour can be shared with others via QR codes or other distribution methods so that anyone who attended Go Green Week could complete the tour. The Google pinmap promotes local businesses, which provided incentive for those businesses to contribute to Go Green Week. Since the tour is self-guided and available at any time during the week and afterwards, the tour will be a continuous and ongoing project for future Go Green Week teams to develop.

3.3 Objective 3: Evaluating Outcomes

We have surveyed members of the public to gauge their sustainable behaviors and the effectiveness of Go Green Week.

3.3.1 Public Surveys

Based on background research, input from stakeholders, and suggestions from organizers of previous events, we modified the survey instruments used in city-wide Go Green Weeks from 2017 and 2018. The survey instrument includes a mix of closed and open-ended questions. A copy of the survey can be found in Appendix D. We pretested the survey instrument with students from WPI and our sponsors to ensure the questions were easy to follow for a wide range of backgrounds. We administered the survey during the Go Green Week through a tablet, with paper copies in reserve if people requested them or could not use the tablet. We administered surveys to adults, including parents at the kids' arts and crafts table, those waiting in line for *Feed the 1,000*, and those engaged in the Crowngate activities. We created the survey in Jisc's Online Survey, formerly Bristol Online Survey, which is used by the University of Worcester. Answers were kept anonymous, as no identifying information was collected during the survey. In order to promote participation in the survey, we set up a raffle. Those who completed a survey were given a raffle ticket. We collected contact information on the ticket stub so we could inform the winners but keep the survey results anonymous. We solicited donations from local businesses as prizes, including: a vacuum cleaner from Gtech valued at £150, a £10 voucher for Creams,

two movie passes for the Odeon cinema, a fruit basket from Worcester Produce, Coffee Beans from Coffee #1, and two entrance vouchers to the Museum of Royal Worcester.

Chapter 4: Findings, Results, and Analysis

In this section, we discuss the logistics of each of the five days of the week and our finding based upon our interviews, interactions with the public, observations, and the survey responses from participating members of the Worcester community.

4.1 Stakeholder Perspectives on Best Practices

We started out interviewing and discussing with the key stakeholders in Go Green Week and used their advice, experience, and resources to plan and run the city-wide Go Green Week in Worcester.

4.1.1 University of Worcester Staff and Student Perspectives

Since most of our project was event planning for Go Green Week, we did not have any formal interviews with the staff and students about past Go Green Weeks. Instead, we worked closely with Katy Boom for our primary information and input for planning the week's educational content, activities, and schedule.

We consulted Katy Boom about past Go Green Weeks and the expectations she had for 2019. She had examples from the February 2019 on-campus Go Green Week as well as the 2018 city-wide Go Green Week. We reviewed videos and pictures to gain a better idea of how the past Go Green Weeks were organized and arranged. We contacted the list (Appendix C) of potential contributors for the week that either participated last year or on-campus this year as well as other local businesses that we identified independently. We sent out emails (Appendix E) asking for participation and/or potential donations. We also called and went to several of the businesses listed. We contacted staff and others involved in the on-campus Go Green Week to arrange materials and logistics for our event and for possible donations. We brainstormed with Ms. Boom about potential ideas for activities, such as beeswax wraps, egg flower pots, and dehydrated fruit. We also discussed activities that might use recycled materials to highlight and promote sustainable behaviors. We ordered the materials and supplies through the university and solicited donations from businesses to supplement our supplies.

We also developed the risk assessments required by the university for all of the activities and locations (Appendix F). The risk assessments explain the nature of every activity, the location, all potential risks, and what precautions would be taken to ensure participants' safety.

We ranked and scored the levels of risk so that the University of Worcester, City of Worcester, and Crowngate Estates could approve the safety arrangements. We implemented these measures for each venue and activity.

Ms. Boom connected us with the Monica Martins De Carvalho, a University of Worcester student and teacher at Heart of Worcestershire (HoW) College, who was in charge of choreographing the Sustainable Development Goals with the HoW student dancers. We attended a practice of the dance on March 21st prior to the actual performance to assess its relation to sustainability and provide feedback.

Katy Boom connected us with Abbigail Lowe, a student at the University of Worcester, to help with graphic designs for our flyers and the schedule for the week. Ms. Lowe had designed the materials for the 2019 on-campus Go Green Week, and Ms. Boom wanted to use the same thematic elements to ensure continuity and brand identity. We developed five different flyers, one for each day, with content keyed to the daily themes, such as pollination, sustainable development goals, food waste, wild flowers, and climate action (Appendix G). On the reverse side of each flyer, we printed the Ten Golden Rules Living Sustainability in Worcester (Figure 8). Note that each rule is color coded to reference the corresponding SDG.

Figure 8 Flyer for 10 Golden Rules Living Sustainability

We met with Ms. Boom on numerous occasions to discuss the logistics of implementing the *Feed the 1,000* event. Originally, Punti had tentatively agreed to provide 1,000 reusable bamboo cups for the event but they withdrew their offer during the preparation phase. Since the City of Worcester banned single use plastic in city buildings 2019, we explored various alternative options. We determined that using china coffee mugs was logistically too difficult. We had access to only fifty mugs and forty spoons from the university and no access to the washing facilities in the Guildhall. This would limit us to giving out about forty meals instead of the desired 1,000, so plastic cups and spoons became both the cheapest and most viable option. To comply with the city ordnance, we planned to reuse the cups and spoons in craft activities at events later in the week. We researched different activities that could re-use the plastic spoons and cups and engage members of the community especially young children. We decided to use the cups as flower pots and create a "flower mirror" using painted spoons.

We worked closely with Kateřina Gregarová, a student at the University of Worcester who had helped organize the on-campus Go Green Week in February 2019. She introduced us to the various event locations, including the Guildhall, the fountains by South Quay, and the POD! in Crowngate so we could assess the layout and logistical issues associated with each of the venues. She also helped with risk assessments for different events since we were not familiar with the locations or the procedures. Kateřina Gregarová also helped with activities on several days of the week, attending the litter pick, *Feed the 1,000,* and the Sustainability Dance events.

We coordinated with another student of the University of Worcester, Gabija Svedaite, who recorded video footage of the sustainability dance on Tuesday and the events at Crowngate on Saturday. We used footage captured by Ms. Svedaite, Ms. Boom, and ourselves to develop a composite video of the week's events.

Ms. Boom also asked that we create a Google pin map to feature all of the businesses and organizations that supported and donated to Go Green Week (Figure 9). This map will be a legacy map. Other businesses and organizations that participate in future events will be added. The map will be shared with the Worcester Tourist Center so that visitors can follow a path of businesses and organizations that support sustainability. Some businesses on the map are not within easy walking distance, however, but are included to show the extent of Go Green Week support in the community. Originally, we planned to have this pinmap running during Go Green

Week, but logistics of planning the week prevented us from distributing the pinmap. Ms. Boom also suggested adding not just businesses that contributed to Go Green Week, but also those who have sustainable business practices. Since evaluating businesses on sustainable practices was outside of the scope of this project, the Google pinmap will be a legacy project that will be updated by University of Worcester students in the future.

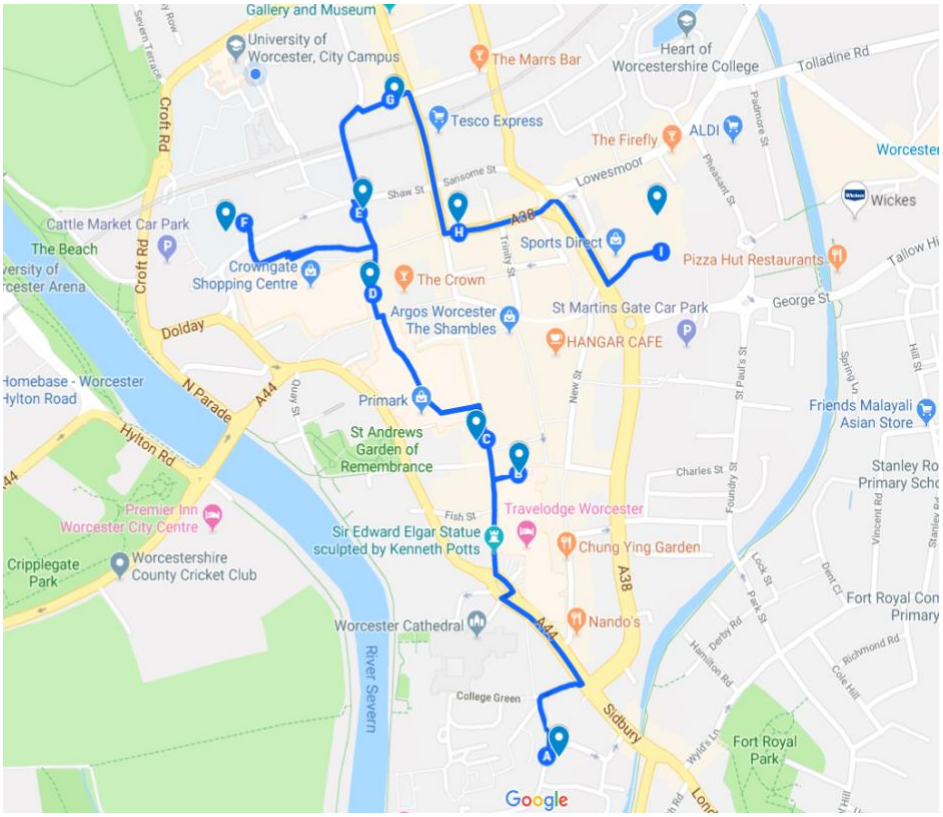

Figure 9: *The path through Worcester of local green businesses and organizations*

4.1.2 Worcester City and County Council Perspectives

We conducted three interviews before the start of Go Green Week. We wanted to gain a more personal view of the week from those who ran or sponsored the event previously, as well as any recommendations for improvements. We interviewed Nathan Gunnell, Community Engagement Officer for the Worcester City Council on March 18. He remembered that the e-bikes were a great success at the South Quay in 2018 with thirty people test-riding the bikes. For this year's Go Green week, he recommended taking more video and pictures of the week so that we have better documentation of the week that can be used to advertise similar events in the

future. He also recommended improving the social media presence to encourage businesses to be more involved.

We interviewed Rebecca Lashley from the Worcestershire County Council on March 21. As the Environmental Projects Officer for the council, she plans events and projects and develops partnerships to support them. Ms. Lashley had several suggestions to improve community engagement in general. She recommended having many different businesses as sponsors for events; although she noted that it is often difficult to get businesses involved in sustainability initiatives as businesses in Worcester do not coordinate their sustainability practices. The County Council promotes sustainability in a variety of ways, such as through the Green Infrastructure Strategy and Local Flood Authority. In the Green Infrastructure Strategy, the council pledges to set an example for the community by ensuring that all council buildings are sustainable and energy efficient. The Local Flood Authority is exploring ways to improve natural defenses against floods, such as planting trees along the banks of the river. Ms. Lashley set up a table about pollinators in Worcester as one of the informational tables at the POD! in Crowngate on April 12th.

We interviewed Warwick Neale, Team Manager of Community Safety and Engagement for Worcester City Council, on March 26. He was instrumental in establishing the city ban on single-use plastic cups in city buildings to reduce the amount of trash in council buildings and promote awareness of sustainability. Some businesses have also adopted this policy in Worcester and many use disincentives (i.e., increased prices) for drinks that use single-use plastic cups. In regards to last year's Go Green Week, Mr. Neale thought that the variety of events, such as giving out chili plants and free rides on e-bikes, was good for attendance. For 2019, he suggested that we use the Guildhall for *Feed the 1,000* event to solicit participation in the survey, since those eating food samples on the street are a captive audience. Children's activities might also help to boost survey participation because parents could complete a survey while their child was preoccupied with the activity. He suggested that the activities should be different from previous years to introduce some variety to the week. When conducting the survey, he suggested we should read the questions to the public rather than letting them use the tablet, as it might take them longer if they also have to learn how to use the tablet. Mr. Neale emphasized making the survey questions consistent with those from last year, to enhance comparability of the results.

4.1.3 Perspectives from other UK University Go Green Weeks

Representatives of the Manchester Metropolitan University Environment Team indicated (personal communication, March 19, 2019) that they found the litter picking, the British Heart Foundation pop-up and the Smoothie Bike were the most popular activities at their Go Green Week in 2019. They also encouraged us to interview representatives at People & Planet for suggestions. The University of Leicester told us via email (March 14, 2019) to focus on what we would specifically like to achieve and to not be too ambitious. They also pointed to themes that they had had in the past: sustainable development in the curriculum, sustainable development goals, sustainable travel, divestment and ethical investment, and zero waste. The University of Bedfordshire did not respond to our requests for information.

4.1.4 Perspectives of the 2018 Go Green Week Team

Last year's Go Green Week team gave us several suggestions. They recommended developing a standardized letter for businesses and to visit the businesses in person to ask for donations, such as gift cards or merchandise, to encourage people to attend. They recommended getting at least fifteen businesses to participate by asking early and frequently. They suggested visiting all the grocery stores to ask for food donations for *Feed the 1,000* and getting about six or seven places to donate food. They warned that most of the organizations and businesses have limited time and resources to help during the week. The 2018 team warned us that the time for evaluation and write-up would be limited, although the Easter break was more problematic in 2018 since it occurred immediately before Go Green Week. They suggested using paper cups for the *Feed the 1,000* event, which HoW provided in 2018.

4.2 Running Go Green Week

Based on our research and feedback (see above), we decided that our final thematic schedule would focus on global goals (Tuesday), zero hunger (Wednesday), reducing waste (Thursday), biodiversity (Friday), and climate action (Saturday). The schedule and themes are illustrated in the flyer that we posted on social media (Figure 10). These themes shaped the selection of activities and participants for each day and were matched to the SDGs that best fit. Each day had at least one activity or outside organization that promoted the specific SGD. We finalized the schedule two weeks before Go Green Week in order to begin our social media

campaign. Unfortunately, as the week neared, organizations and groups who originally planned to attend the event dropped out or moved to another day. As a result, the events and activities on a particular day did not always relate directly to the intended theme.

Based on our discussions with Ms. Boom and participating businesses, we held events from noon until 2pm on Tuesday and Wednesday and noon until 4pm from Thursday through Saturday. From past Go Green Weeks, we learned that this timing allowed for the most foot traffic, as residents of Worcester are more likely to take lunch breaks at this time. Taking input from past years as well, we held events on Saturday to allow for people to attend the events who work during the week.

Figure 10: Thematic schedule developed for 2019's Go Green Week.

4.2.1 Sustainability Dance

To start our week, we held the sustainability dance at the South Quay fountains which was choreographed and run by Monica Martins De Carvalho. Nineteen students from HoW college performed in this interpretive dance that demonstrated all 17 of the Sustainable Development Goals. We chose to start the week with this performance because it would provide an overview of the Sustainable Development Goals and set the tone for the rest of the week. To

help the audience understand the event, we created t-shirts with the SDG circle on the front and individual SDGs on the back. The Sports Partnership Herefordshire Worcestershire group donated leftover t-shirts to us, and the sewing group at the University of Worcester sewed the goals onto the shirts.

Figure 11: Dancers from HoW college perform their sustainability dance

On the day of the event, we also collaborated with the WPI Woo Bikes team, who set up a stall where people could Have-A-Go on the electric bikes. With the help of the HoW performers, we drew chalk art of the 17 Sustainable Development Goal's circle near the dance floor of the fountain. The dance was performed every half hour from 12:00pm to 2:00pm. The choreographed dance featured all of the SDGs and lasted over six minutes, but overall the attendance for the dance was disappointingly low, in large part due to the inclement weather and lack of foot traffic on the South Quay. Most of the people who watched the dance were those who were passing by at the time or were there because they were part of the university or college. We solicited only sixteen survey responses at this event because attendance was low and few people stopped long enough to take a survey.

4.2.2 *Feed the 1,000*

On Wednesday, we held the *Feed the 1,000* event on the High Street outside the Guildhall. Since this event drew more attendees and participants than the dance on Tuesday, likely because of the location on High Street, the sunny weather, and the free food. The food was

served by students at the table and from trays among the passersby (Figure 12). Let's Waste Less also ran a stall next to the event where the public could learn about food waste sustainability. While people were eating, we asked the attendees to take part in the survey. The HoW students handed out 250 servings of food, with most people taking one serving of each meal. The food garnered great reviews from people and had a pleasant smell that attracted onlookers. Many visitors also appreciated that the food was vegan and vegetarian. There was much more foot traffic at the Guildhall than at South Quay and we collected 38 surveys, despite most people walking past the event without participating. As Mr. Neal suggested, those who did stop were often very willing to take a survey while they ate. The crowd was primarily older people who had time to pause and check out the event. We again drew out the chalk circle of the SDGs and we used the stencils designed by Dan Martyr to provide the text of each goal. We provided chalk to parents and children to add drawings and more text to the circle, although few chose to do so.

Figure 12: Students handing out servings of the vegetable curry and vegan soup at Feed the 1,000

Since we had no budget for the week, we asked various grocery stores in Worcester for food donations. ASDA donated various pastas, beans, and rice while Minor Weir Willis donated

various vegetables. Neil Tabram and his students from the Heart of Worcestershire College used the donated ingredients to make vegan soup and vegetarian curry for the event. Punti originally planned to give us 1,000 reusable cups for this event, which would later be used with their Punti app. Unfortunately, Punti could not donate the cups, so we worked with Katy Boom to find another solution. With the plastics-free Worcester initiative, we did not want to use disposable cups and spoons for this event. We could not find any reusable cup and were unable to access washing facilities for reusable containers. Instead, we did use plastic cups and spoons and planned to reuse them in crafts later in the week so that we were not using single-use plastic.

Finding ideas to reuse the spoons and cups from the *Feed the 1,000* event led us to create our spoon mirror activity. The intent was to take the spoons from the *Feed the 1,000* event on Wednesday and have children and other participants paint them throughout the events at Crowngate on Thursday through Saturday. After the spoons were painted, we then assembled them into the mirror that was left at the POD! at the end of the week (Figure 13)

Figure 13: The finished recycled spoon mirror created at the POD!

4.2.3 Litter Pick

Like other years, our team planned a litter pick along the Severn River that we hoped would engage the residents of the community and raise awareness about litter and recycling. We contacted Nathan Gunnell to borrow the litter pick kits from him Thursday morning at the start of the litter pick. We reached out to the other WPI teams here in Worcester to solicit their help in this event, as well as promoted the event on social media. The planned route was collecting litter along both sides of the river and breaking into groups.

Figure 14: WPI students participating in Thursday's litter pick.

The litter pick occurred on Thursday morning from 10:00 to 11:00 and started at Guildhall after we obtained trash bags, litter picks, gloves, and vests from Guildhall. The path began on each side of the River Severn from the Guildhall, headed south, and then looped back into town to return to the Guildhall. Kateřina Gregarová from the University of Worcester, and fourteen WPI students and their advisor, Dominic Golding attended but no members of the public joined us. We filled six large trash bags during the hour.

4.2.4 Crowngate POD!

After our Tuesday and Wednesday activities and the litter pick on Thursday morning, we held all the other events at the POD! in the Crowngate Shopping Centre. We contacted Michael Lloyd of Crowngate to book the location Thursday to Saturday from 11am-4pm. From 11am to 12pm, we set up the stalls in collaboration with the other participating organizations. We opened for attendees at 12pm. We chose to hold our activities in the POD! because many of our activities required tables, electricity, and an inside environment in case of inclement weather.

From discussions with Katy Boom and the 2018 Go Green Week team, we planned a variety of activities to be held in the POD!. These activities were designed to promote sustainable behavior and highlight current sustainability issues. To fit with Thursday's theme of waste less, we created a beeswax wrap demonstration and a free plant giveaway. Originally, Let's Waste Less planned to host a cooking demonstration in Crowngate to show how to properly proportion food to reduce waste. However, they were unable to do so since the POD! was not equipped with the appropriate safety equipment for a cooking demonstration. For the plant giveaway, we planted various seedlings, spider plants, and succulents in eggshells and plastic cups. Attendees could paint the eggshells or the plastic cups and take a plant. We also gave away free dehydrated fruit (bananas, apples, and melon) that we had prepared in advance. The fruit was intended to show that fruit could be dried rather than thrown away.

Figure 15: Left - Name the polar bear event and fruit event. Right - beeswax wrap demonstration

The beeswax wrap was our team's unique contribution to the event. Katy Boom heard of another university/event that hired someone to host a beeswax wrap demonstration. Beeswax wraps are currently a popular sustainability item that serve as an alternative to cling film or single-use plastics like sandwich bags. Since they are reusable and washable, they fit with Thursday's less waste theme. Beeswax wraps are usually expensive to buy in shops, so we thought handing out the wraps during a demonstration would be a crowd-drawing event. By creating several versions of the wraps with different materials, we created a cheap, quick method to make beeswax wraps using coconut oil, shredded beeswax, and a clothes iron. For fabric, we used pure cotton t-shirts from the Sports Partnership Herefordshire Worcestershire donation after we made the t-shirts for the dancers. Katy Boom was able to bring in cotton charity clothing for more fabric variations and types. The beeswax demonstration was very popular on Thursday and drew a number of people. We decided to keep running the beeswax wrap demonstration on Friday and Saturday as well, since people said they wanted to come back with other people for the demonstrations.

Thursday saw the lowest attendance of the three days in Crowngate. Most of those who stopped and visited the stalls and activities were older. Most of the activities which were geared towards children received little participation from the children themselves, and disappointingly only 3 children painted eggshells and took plants with them.

Figure 16: Left - Let's Waste Less Booth. Right - Worcestershire Vegans & Veggies Booth

On Friday, we held therapy dog sessions and a DIY seed bomb activity to promote the day's theme of biodiversity. Originally, we thought of having Friday's theme as Health and Well-being to go with the therapy dogs, but we then collaborated with Rebecca Lashley who attended the event Friday and shared her materials about pollination. Because of that, we decided to make our theme biodiversity instead. For the seed bombs, we ordered English wildflower seeds and created a soil and compost mix. We planned to have attendees at Crowngate make their own seed bombs at the station.

Friday saw the largest number of attendees and the largest number of participating organizations. Pets As Therapy, Let's Waste Less, Act on Energy, Worcestershire Vegans and Veggies, and Worcestershire County Council all had stalls in addition to our student-run activities. The activities included everything from the previous day as well as seed bombs, although we made the seed bombs and handed them out, rather than people making their own. A majority of the people who stopped came to see the therapy dogs. Some then stayed to take the survey, participate in the activities, or interact with the representatives from the attending organizations.

Figure 17: Therapy Dog at the POD!

For Saturday's theme of climate action, we planned a name-the-polar-bear event and a carbon footprint activity. Students created the polar bear from recycled fabric at the University of

Worcester's Go Green Week in February. Since the polar bear has pink fur on its face, the polar bear was marketed as "embarrassed about climate change". We set up a display with the polar bear for children to write down potential names (Figure 15). At this display, we also handed out the dried fruit that we prepared from donated fruit from leftover stalls in the weeks leading up to the event. This dried fruit demonstrated to attendees that they could still use fruit past its prime rather than throw out the fruit and waste it.

Saturday was the final day and saw limited traffic similar to Thursday. We continued to have the same activities as the previous two days and added a carbon footprint activity that involved tracing a person's foot before encouraging them to make a pledge to reduce their carbon "footprint". Greenpeace and Let's Waste Less held stalls in addition to all of the activities from Friday. More families with younger children participated on Saturday, but older people were still the most likely to take the survey.

We originally planned to have different events offered each day, but had enough materials to run every event on all days. Additionally, we ran a table that handed out various seed packets each day, even though we planned to only hand out the seed bombs. Many people preferred seed packets over the seed bombs. We also found that people who visited the POD! location were more likely to stay and check out every table, rather than people at other events who would briefly stop. Some parents were also interested in the children's activities, but ended up not participating because their children were not interested in the activity. We generally had a steady stream of people in the POD! and had an influx of people around lunch hours. The therapy dogs drew the largest crowds, although some attendees only stopped to visit the therapy dogs, rather than take a survey. On Friday, we set out the Gtech vacuum cleaner as well as the other prizes on a table with the survey instruments, which seemed to increase survey participation and general attendance.

4.3 Public Opinions about Sustainability and Go Green Week 2019

In the weeks leading up to Go Green Week, we ran our social media pages and increased our media presence. Using the tools provided by Facebook and Instagram, we analyzed the effectiveness of our social media outreach. Throughout Go Green Week, we administered surveys to the attendees of Go Green Week and collected 147 responses. From the responses collected, we compared our findings to those of previous Go Green Weeks as well as processed

the data independently to determine the sustainable behaviors of those who attended Go Green Week.

4.3.1 Social Media Analysis

Facebook was our main method of social media outreach and advertising for the City-Wide Go Green Week. The data seen in Table 1 was exported directly from Facebook.

Table 1. Facebook Outreach Data (03/22/2019-04/13/2019)

Page Consumptions	186
Total Impressions	2,425
Reach of Page Posts	934
Page Engaged Users	80
Total Likes	15

Page consumptions refers to the total number of clicks on any of our content. The Go Green Week Worcester Facebook Page had 186 clicks on our posts and status updates. The total impressions value is the number of times our Page's posts entered a person's screen, of which we had 2,425. Reach of page posts is the number of unique users who had any of our page's posts enter their screen. The Page's posts appear on the feed of 934 users. Eighty unique users were tagged as 'page engaged,' meaning they clicked on a post from our page. This results in an engagement rate of 8.56%, where engagement rate is the percentage of people who see the post on their feed and actually click on the post. Finally, the Go Green Week Worcester Page had 15 likes over the span of its operation.

Facebook also tracks the popularity of specific posts and how many people it reaches in addition to the page itself. The post with the most reaches is shown below in Figure 18. This picture was posted on 12/04/2019 and had reached 242 unique users. The next best post was about the success of the *Feed the 1,000* event. It reached 122 unique users and was posted on 04/10/2019.

Figure 18 Popular Facebook post from the Go Green Week Worcester page

We tracked the number views the page had on any given week. As seen in Figure 19, the page was officially created on March 22nd, where it had one view until the 25th, where the number jumped to six after we added the events to the page. That value then stayed consistent until the 3rd of April, where we started posting more about the events of the week. The views then rose steadily, reaching a maximum of 21 people on April 10th. Other organizations and people had been sharing the Page during this period.

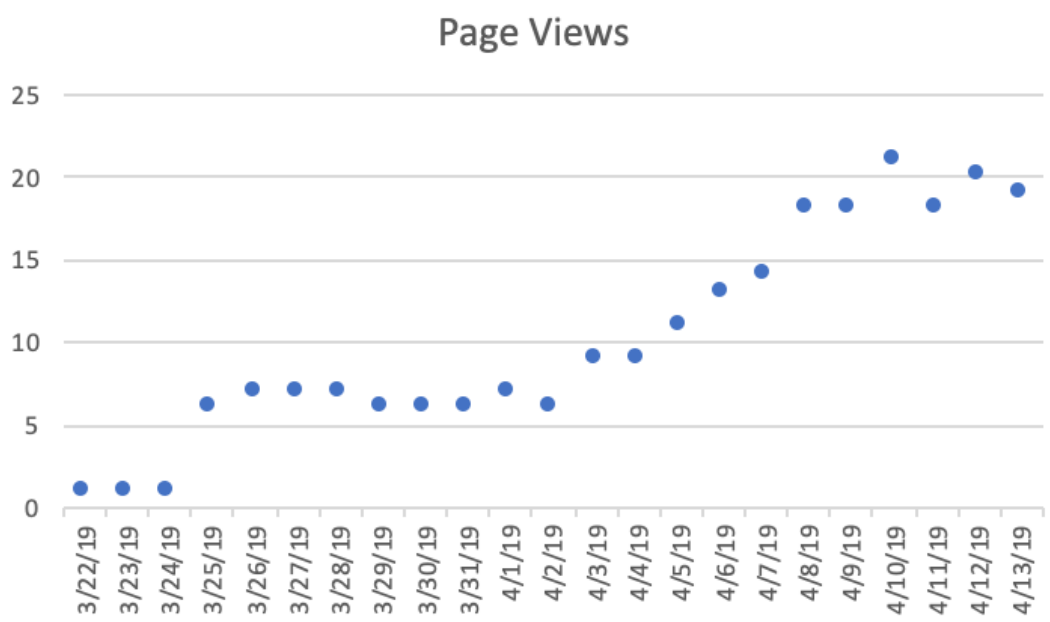

Figure 19: Weekly Go Green Week Worcester Page Views from unique users logged into Facebook

Another way we measured the success of our social media outreach and advertising was through two questions (Figures 20 and 21) on our survey.

Figure 20 Respondent awareness of Go Green Week prior to event

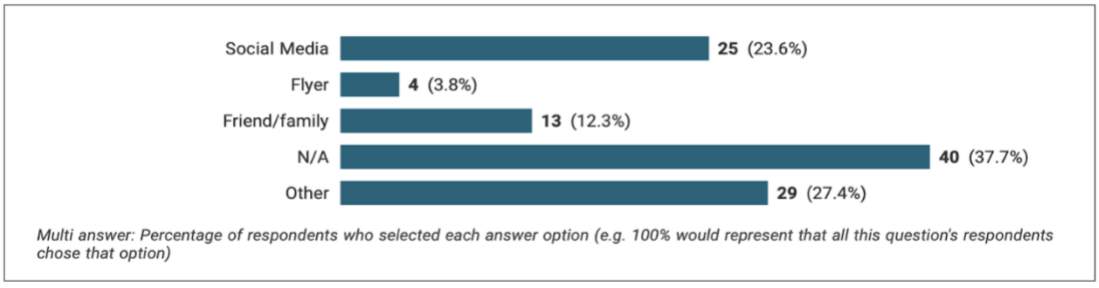

Figure 21 How people heard about Go Green Week

Only 38.8% (57) of respondents had heard of Go Green Week before taking the survey. Twenty-five people (or 43.9% of the people who were aware of the Go Green Week) had heard

about it from social media. Four people heard about the event because of the flyers, while a further 13 heard from a friend or family member. The 'Other' responses consisted of mainly people saying it was a part of their module at the university.

4.3.2 Survey Response Data

Overall, we gathered 147 completed surveys over the five-day period (Figure 22). The graph also shows the average number of surveys administered per hour. We collected the largest number of surveys on Friday at POD! when we had the most attendees and participating organizations (including Pets As Therapy, Let's Waste Less, Act on Energy, Worcestershire Vegans and Veggies and the Worcestershire Council) in addition to our student run activities. We collected the largest number of surveys/hour on Wednesday during *Feed the 1,000* where we were able to solicit responses from people while they ate.

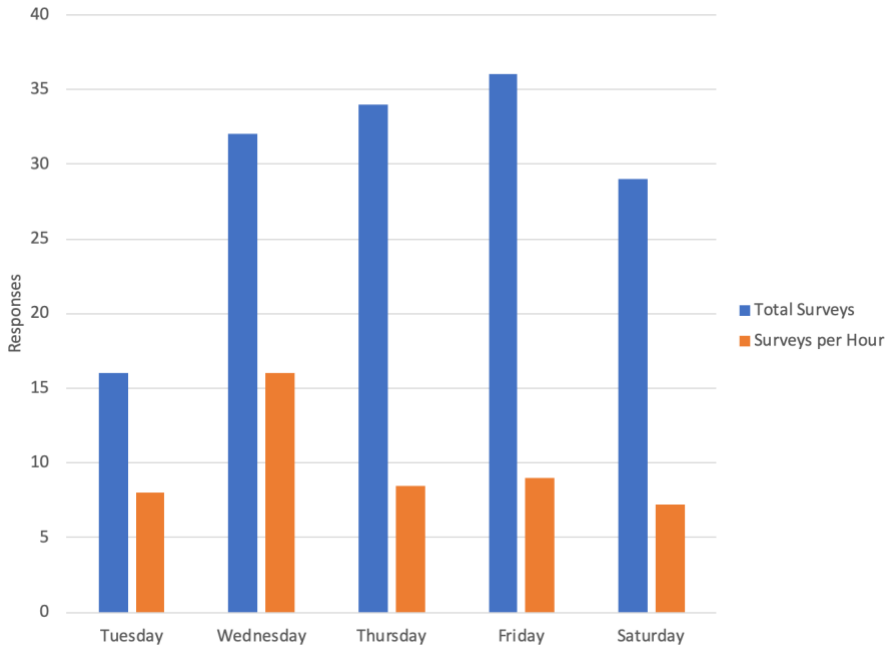

Figure 22 Number of surveys administered and rate of surveys per hour on each day of GGW 2019

Last year had a more diverse group of survey takers as well as a much younger group of attendees based on survey demographics (Figure 23). About 44% of the people who took the survey in 2019 were 55 or older compared with 25% in 2018. Last year 32% of respondents were

aged 18-24 compared with 13% in 2019. As shown in Figures 24 and 25, the sample of respondents in 2018 and 2019 were very similar in terms of gender and educational background.

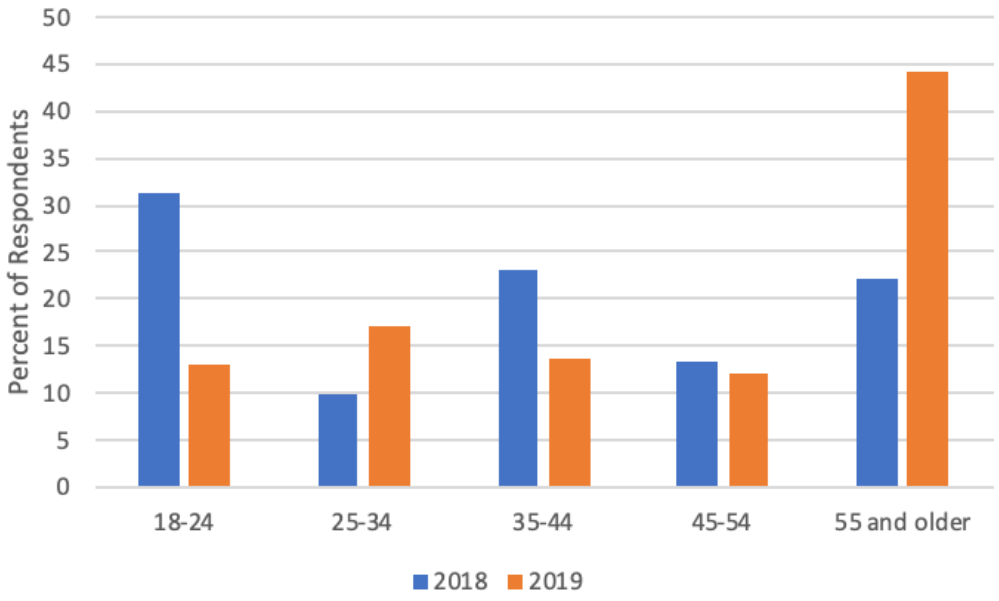

Figure 23 Age Comparison of Respondents between GGW 2018 and 2019

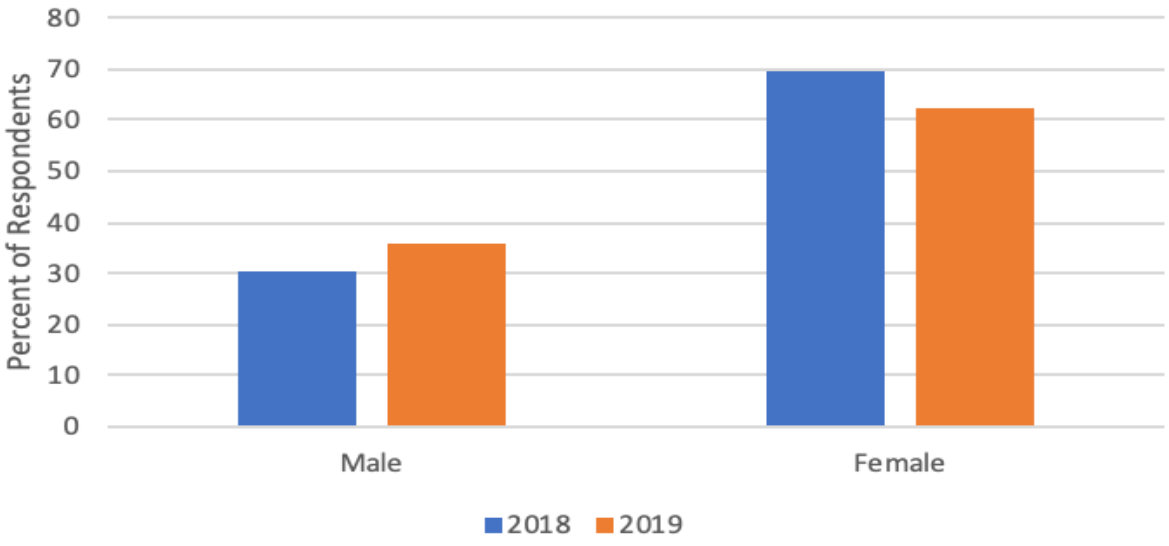

Figure 24 Gender Comparison of Respondents between GGW 2018 and 2019

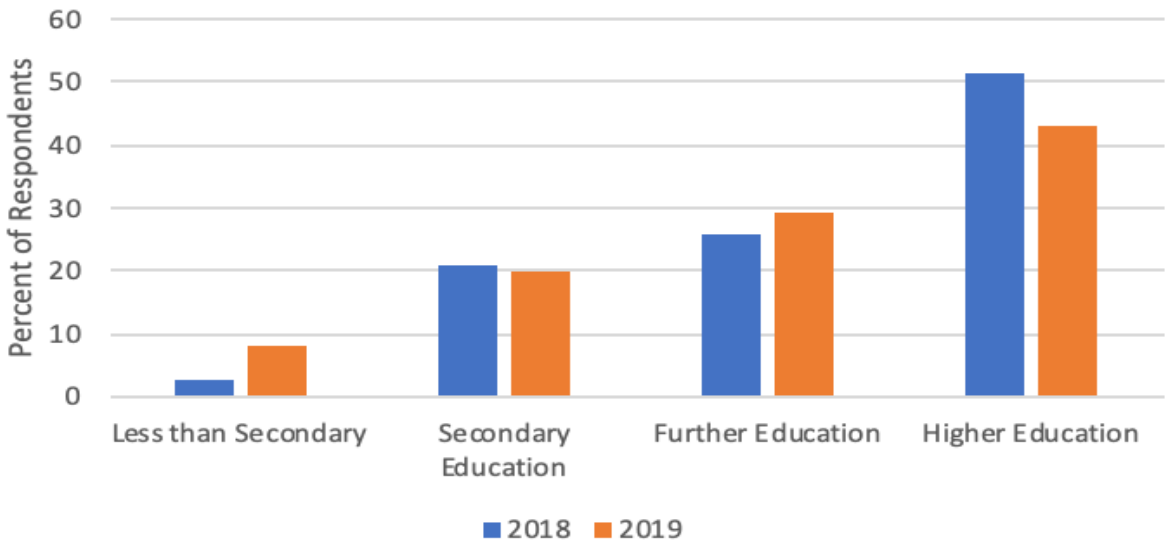

Figure 25 Education Comparison of Respondents between GGW 2018 and 2019

Overall, Figure 26 shows that many respondents in 2018 have adopted several sustainable practices and technologies. In 2018, 91% of respondents own energy saving light bulbs and 98% own recycling bins although less than 20% own indoor light motion sensors and renewable energy systems. Compared to last year's survey data, ownership of renewable energy systems, energy saving light bulbs and recycling bins remained consistent. There was a noticeable difference in the number of people with water saving items and compost bins from 2018 to 2019 with an increase of about 10%. However, there was a noticeable decrease in the number of people with light motion sensors and programmable thermostats in their homes with about a 10% change from 2018 to 2019. These small differences likely reflect differences in sampling rather than any substantive change of behavior in the Worcester population.

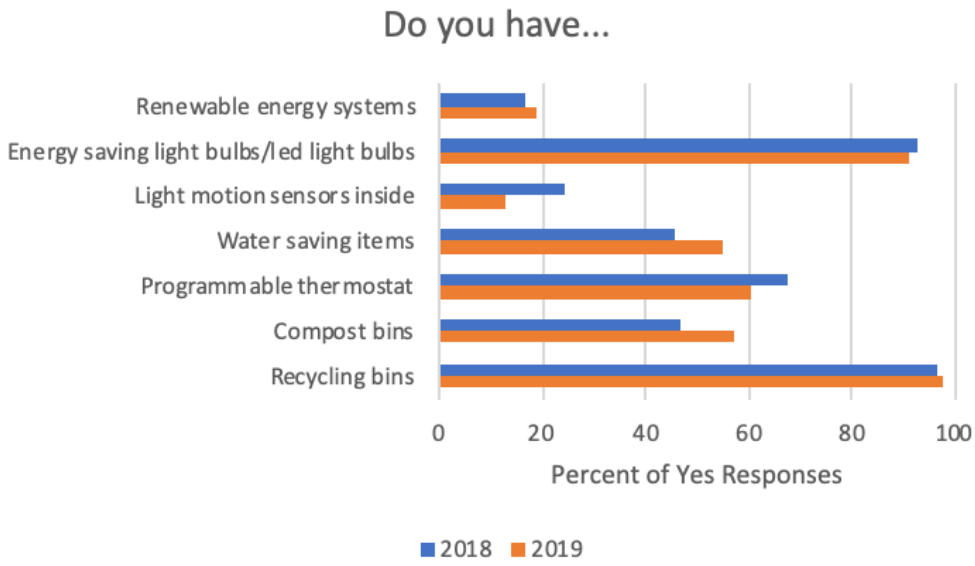

Figure 26 Comparison from GGW 2018 and 2019 showing only the percent of responses that chose Yes for 'Do you have…'

Figure 27 shows that the sample of respondents in 2019 primarily travel in a more sustainable fashion that the respondents in 2018. This likely reflects a difference in the makeup of the sample rather than any substantive change in behavior, however. There was an increase of 10% of people reporting that their primary form of travel was on foot compared to 2018 from 31% to 41%. The percent of people reporting to primary travel on the bus was the same from 2018 to 2019. The number of people that travelled via car decreased from 41% to 36%. Also, the number of people travelling in car on their own decreased by 13% while the number of people travelling by car with others doubled from 8% to 16%. Train and motorbike/moped continued to be the least used forms of transportation.

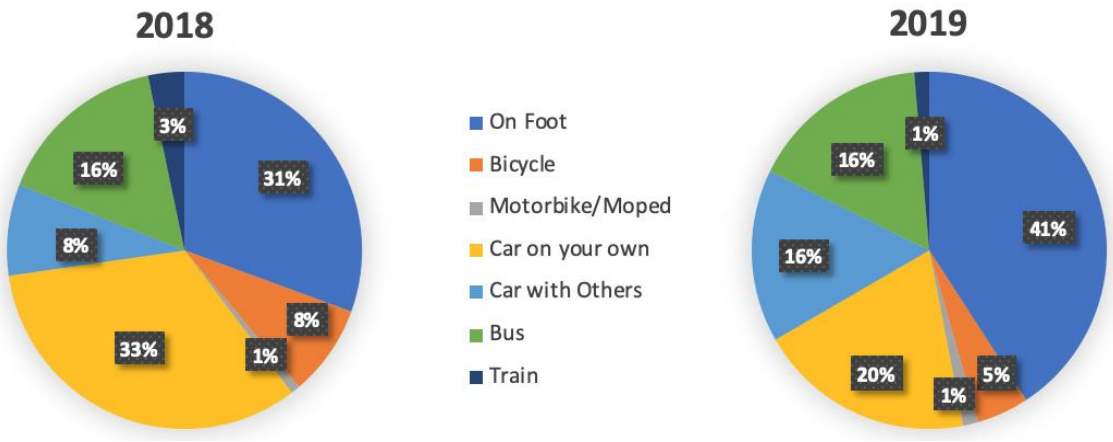

Figure 27 Comparison of travel mode between GGW 2018 and 2019

A majority of the people (greater than 70%) who took the 2019 survey (Figure 28, blue bars) knew ‘a fair amount or more’ about recycling, disposing of food waste, and donating of unwanted items. Unfortunately, fewer people (45%) knew ‘a fair amount or more’ about disposing of electronic waste. Compared to last year’s survey, there is very little change regarding how much people know about the recycling topics. More people answered that they knew ‘a fair amount or more’ about disposing of food waste and donating of unwanted items in 2019 than in the 2018 Go Green Weeks as in 2018 they only had 50% and 69% chose those answers respectively.

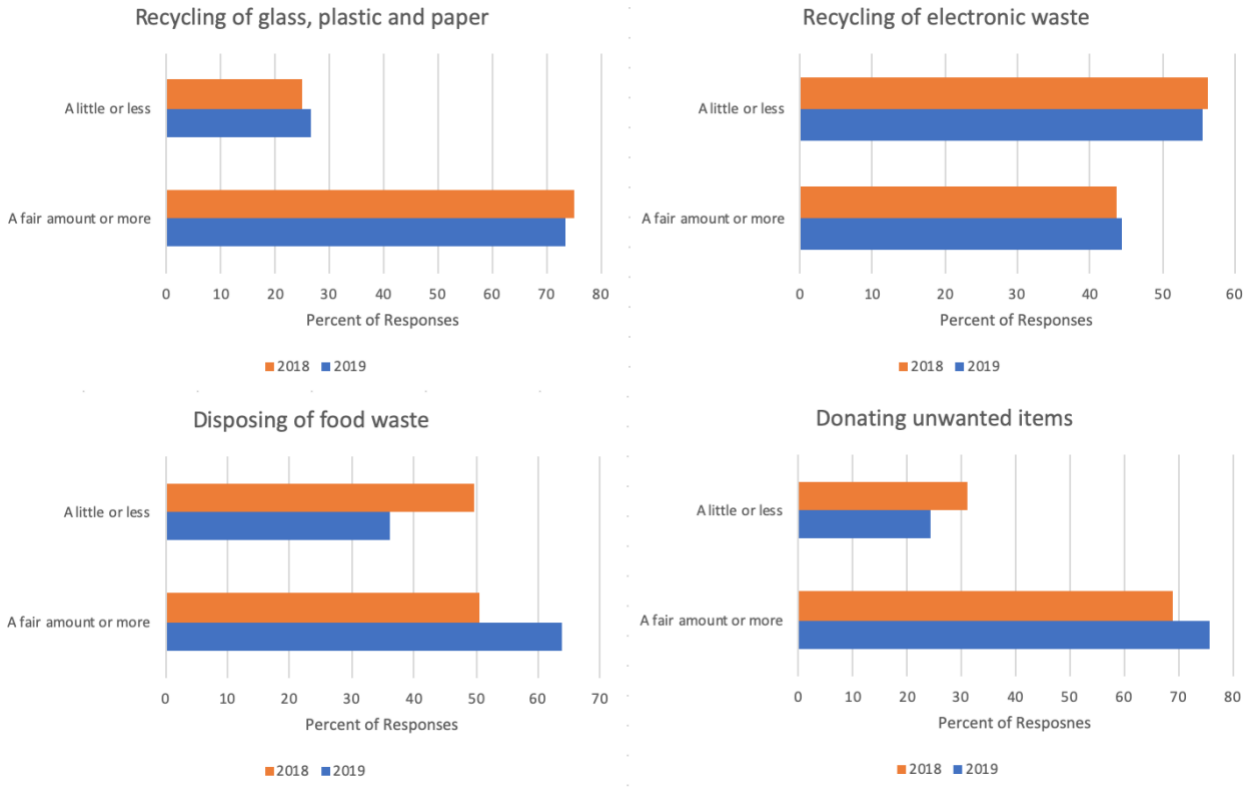

Figure 28 Expressed levels of knowledge in 2018 vs. 2019

Chapter 5: Conclusions and Recommendations

Overall, we felt that the city-wide Go Green Week in Worcester was a success. We provided a week of engaging activities that highlighted the Sustainable Development Goals and created public awareness among the residents of Worcester. We had steady attendance at many of our events and participation in each of our activities. We received positive feedback on every activity and everything ran smoothly. Our survey was able to identify our sample's sustainable behavior and pinpoint where they can improve. Despite this, we have several specific conclusions and associated recommendations that could improve future Go Green Weeks within the City of Worcester.

5.1 Activities

The beeswax wrap tutorial was among our most successful and well-attended activity and we had some success with the DIY seed bombs. We feel that these interactive learning activities are the best for Go Green Week. In addition to interactive activities, food is a big draw for people as seen with *Feed the 1,000* being our most successful day. Pets As Therapy increased foot traffic into the POD! with their welcoming therapy dogs. With these in mind, we recommend the following for future Go Green Weeks:

- Tutorial activities seem to be the best for engaging the audience, especially parents with children. People apparently like to learn how to do things for themselves. More activities like making beeswax wraps that demonstrate how people can take actions to be more sustainable should be added.
- Food could be a larger part of the week. Vegan or vegetarian cooking demonstrations would likely be popular, but would require an appropriate venue and safety precautions.
- Pets As Therapy or similarly attractive activities could be repeated throughout the week as well, rather than just on a single day.

5.2 Venue

The location of the events was a major factor affecting participation and community engagement. The Guildhall location on the High Street had the highest foot traffic and the greatest attendance and this was likely enhanced by the sunny weather. Foot traffic and

attendance at the South Quay location was much lower, although this was likely a result of the cold, cloudy weather. A practice of the dance performance on a previous day was well attended but the weather that day was much nicer. The POD! in Crowngate was a large space that could easily accommodate all of the booths and activities. The storage facilities, bathrooms, and resources made it a convenient place to operate but the low level of foot traffic and difficulty drawing in people to the POD! itself inhibited participation. We recommend the following changes and additions for future Go Green Weeks:

- Host events at more highly populated areas such as on the High Street.
- Use tents and marquees in case of inclement weather, or choose sheltered locations in high traffic areas.
- We recommend having more locations to reach a more varied demographic of Worcester citizens but only if more organizations and volunteers can be recruited to host and run the activities.

5.3 Timing

The events this year began at noon and ended before 4pm, which potentially limited the amount of people who attended. At each event, our busiest times typically occurred from 12pm to 1pm, likely because people were on their lunch breaks. However, not everyone is able to take longer lunch breaks to explore all of the activities in Go Green Week, and the activities ended before most people finish work or school. For the past few years, the city-wide Go Green Weeks have occurred in early to mid-April. However, this time frame often overlaps with Easter, which complicates recruiting organizations and volunteers. Furthermore, the weather in April can be extremely unpredictable and can dramatically affect the number of attendees. To boost attendance at future Go Green Weeks, we have several suggestions for timing:

- Consider holding events at various times, such as early morning, evening, and midday. This allows for a variety of attendees to participate and learn about sustainable behaviors.
- Potentially hold Go Green Week at another time in the year, such as during the summer or autumn, and avoid major holidays. The weather may be better and more predictable for outdoor events and avoiding major holidays would simplify logistics.

5.4 Social Media

Our social media campaign was helpful in advertising the week to the community; however, it could have been more effective. We posted our page on April 3rd and encouraged other organizations and members to share it. The posts that reached the most users were about the Pets As Therapy and the *Feed the 1,000* event. This is because of the dogs in the images posted are more interesting to users than the average content posted about Go Green Week. Food also interests users and will encourage people to visit the event. In the future, posts that include attractive items, such as animals, children, and free food, should be used to help spread awareness for Go Green Week. We recommend the following changes and additions for future Go Green Weeks:

- Social media should be started earlier during the planning phase with frequent updates. Having an earlier social media presence will increase overall views and perhaps increase attendance.
- Use accounts with more followers for the various social media networks. A small account with few followers will not gain as much traction in the community as an account connected to the city council with more followers.
- Identify interesting elements to include in posts, such as dogs, food, children, and prizes.
- Utilize other social media networks, such as Twitter, to increase awareness and reach a more diverse demographic
- Purchase social media advertisements to reach more people in the community

5.5 Survey

The survey we conducted was useful in evaluating the current knowledge and awareness of sustainability in the community; however, some questions could be improved for the future. The survey's length could be reduced by removing questions that do not provide constructive feedback. Here are the changes we recommend:

- Avoid leading questions that force answers that are not useful (e.g., "Did you enjoy Go Green Week?"). A better alternative might be "What are three things that you liked/disliked about today's events?"
- To help reduce the length, remove questions unrelated to sustainability practices and demographics, such as electric bike and bike share related questions.

- Have paper copies in addition to the tablets, as some respondents will prefer to fill it out on paper.
- Ensure Wi-Fi is available at the locations of activities and events, or set up a hotspot. The Guildhall Wi-Fi was not reliable and other locations may not be as well. Alternatively, the survey could be developed with software that can store responses off-line.

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Appendix A: Interview Preamble and Questions

Preamble: We are students from the Worcester Polytechnic Institute in Massachusetts, USA, working with the University of Worcester to evaluate Go Green Week. With this interview we hope to improve Go Green Week for everyone in the future and thereby promote more sustainable behaviors. This interview is confidential. If we use a quote from this interview, we will contact you if you want to remain anonymous and to give you a chance to review before we complete our final report.

General Questions:

- <Demographic/Background questions>
- Is sustainability a concern to you?
- Are you personally involved in sustainability practices? How?
- What do you think the general consensus is of sustainability in the community?

For City and Worcester Officials:

- What is your position in the government and how does it affect sustainability in Worcester?
- Do you think that current Go Green Week outreach and engagement practices are effective?
- What would you like to see improved about Go Green Weeks?
- What can be improved about community engagement to improve sustainability practices in Worcester?
- What sustainable policies are in effect for the region?
- Are the policies that are in place effective?

Appendix B: 2019 On-Campus Go Green Week Contacts

Organisations
Friends of the Earth
Greenpeace
Worcestershire Wildlife Trust
RSPB
Friends of the Earth Tewkesbury
Worcestershire Vegans & Veggies
Zaytoun
LFHW/Compost Champions
The Fold
Worcester Produce
Repair Café
Wier Waste
Spokes (repair café)
Ductworth Trust/WRE
Act on Energy
First Bus
Spokes
West Mercia Police
MiniVivi
Delilah and the Moon
Vegan Jamaican food
Dutty Vegan
Amy Sheppard Your Fluffy Fix
Let's Waste Less - Worcestershire County Council
Perrywood
Oldbury Park
Hollymount
Fortis

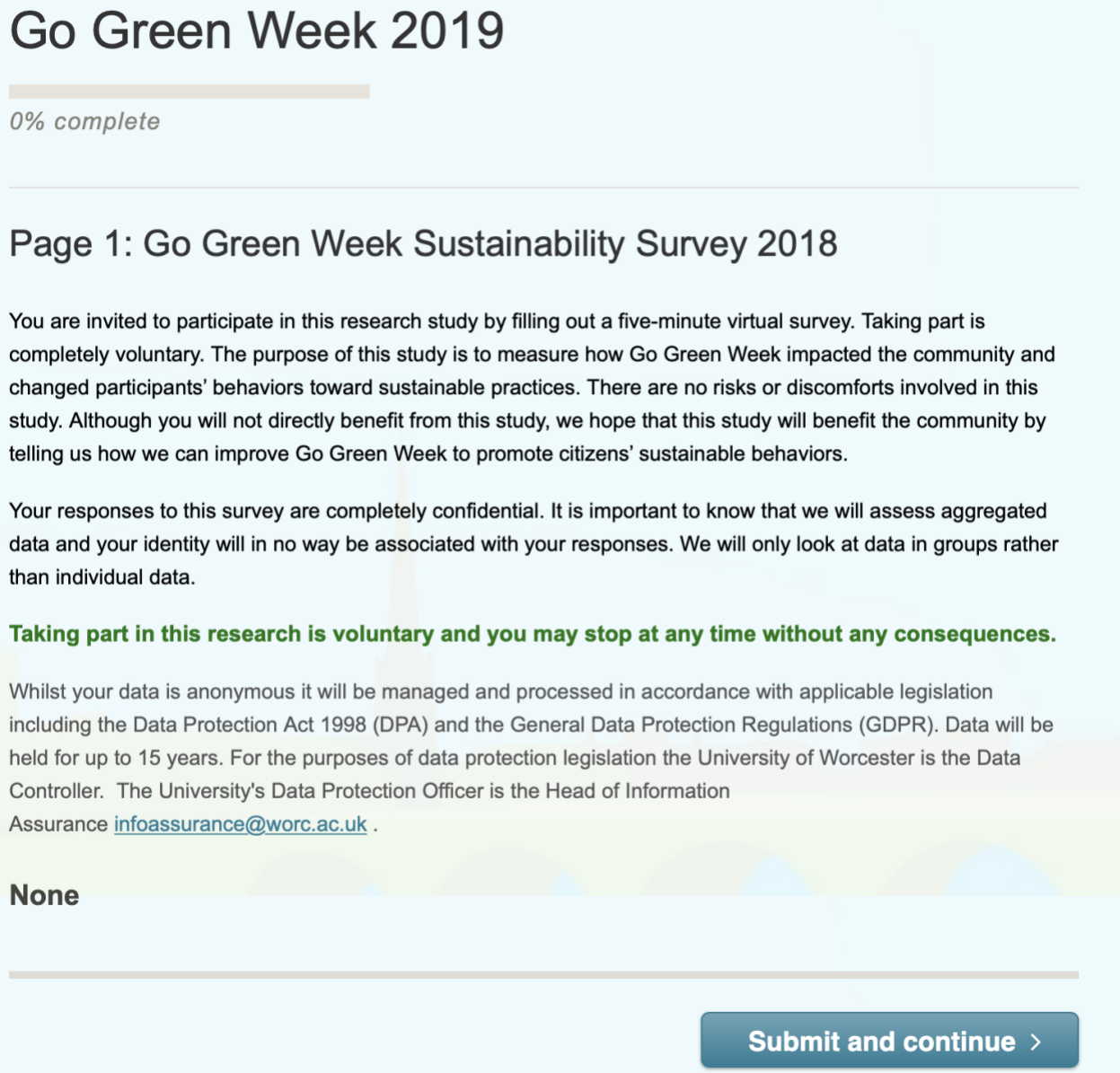
Pets As Therapy
Plastic Free Worcester
Severn Rivers Trust
Oestopath

Appendix C: Businesses and Organizations Contacts

Businesses and Organizations Contacted	
Bolded Businesses and Organizations attended GGW	*Italicized Businesses and Organizations donated to GGW*
Act on Energy	*ODEON*
Amy Sheppard - Your Fluffy Fix	Oestopath
Andrew Davis Partnership	Oldbury park
ASDA	Perrywood
Bull Ring Co-op	Plastic Free Worcester
Cafe Francinis de colombia	Pret A Manger
Carl's Fruit Stand	PSW
Coffee #1	Q Panda
Cookmate Cookery School	Repair Café
Cost Less	Rock Follies Vintage
Costa Cafe	Royal Porcelain Works / Henry Sandon Hall
Creams	RSPB
Creative Hands 2	Sainsbury's
Delilah and the Moon	Severn Rivers Trust
Diglis House Hotel	**Spokes (repair café)**
Ductworth Trust/WRE	Starbucks
Dutty Vegan	Tesco
First Bus	The Commandery
Fortis	The Fold
Friends of the Earth	*The Museum of Royal Worcester*
Gourmet Burger Kitchen	The Postal Order
Greenpeace	**Pets As Therapy**
Hollymount	Tk Maxx
Housewives Produce	Tudor House Museum
Iapetus Gallery	Vegan Jamaican food
Iceland	Vue Movie theater
King's School	Wayland's Yard
Lets Waste Less - Worcestershire County Council	West Mercia Police - Bike Marking
LFHW/Compost Champions	Wier Waste
Lush	Worcester Arts Workshop

Mcdonalds	Worcester Cycle Centre
MiniVivi	*Worcester Produce*
Minor | *Weir* | *Willis*	**Worcestershire Vegans & Veggies**
Mr Simms Olde Sweet Shoppe Worcester	Worcestershire Wildlife Trust
Nandos	Zaytoun

Appendix D: Survey Preamble and Survey



Go Green Week 2019

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Page 1: Go Green Week Sustainability Survey 2018

You are invited to participate in this research study by filling out a five-minute virtual survey. Taking part is completely voluntary. The purpose of this study is to measure how Go Green Week impacted the community and changed participants' behaviors toward sustainable practices. There are no risks or discomforts involved in this study. Although you will not directly benefit from this study, we hope that this study will benefit the community by telling us how we can improve Go Green Week to promote citizens' sustainable behaviors.

Your responses to this survey are completely confidential. It is important to know that we will assess aggregated data and your identity will in no way be associated with your responses. We will only look at data in groups rather than individual data.

Taking part in this research is voluntary and you may stop at any time without any consequences.

Whilst your data is anonymous it will be managed and processed in accordance with applicable legislation including the Data Protection Act 1998 (DPA) and the General Data Protection Regulations (GDPR). Data will be held for up to 15 years. For the purposes of data protection legislation the University of Worcester is the Data Controller. The University's Data Protection Officer is the Head of Information Assurance infoassurance@worc.ac.uk .

None

Submit and continue >

Page 2: Questions on Sustainability

1. How do you primarily travel?

- ○ On Foot
- ○ Bicycle
- ○ Motorbike/Moped
- ○ Car on your own
- ○ Car with others
- ○ Bus
- ○ Train

2. Can you ride a bike?

- ○ Yes
- ○ No

3. If yes, would you be interested in a city-wide bike share scheme for Worcester?

- ○ Yes
- ○ No
- ○ Other
- ○ N/A

4. Have you ever used an electric bike (e-bike)?

- ○ Never heard of an electric bike
- ○ Heard of e-bikes but never used one
- ○ Had a go on a friend's/family member's e-bike
- ○ Have used one through a loan scheme or test ride
- ○ I own one and use it regularly
- ○ I own one but use it seldom

This part of the survey uses a table of questions, view as separate questions instead?

5. How much do you know about the following within the City of Worcester?

Please don't select more than 1 answer(s) per row.

	A lot	A fair amount	A little	Not much/nothing
Recycling of glass, plastic and paper	☐	☐	☐	☐
Recycling electronic waste (e.g. mobile phones)	☐	☐	☐	☐
Disposing of food waste	☐	☐	☐	☐
Donating unwanted items	☐	☐	☐	☐

This part of the survey uses a table of questions, view as separate questions instead?

6. Do you have any of the following at your home?

Please don't select more than 1 answer(s) per row.

	Yes	No	Don't know
Recycling bins	☐	☐	☐
Compost bin	☐	☐	☐
Programmable thermostat (e.g. TRV's or able to adjust the temperature on individual radiators)	☐	☐	☐
Water-saving items (e.g. low-flow shower heads or dual flush loos)	☐	☐	☐
Light motion sensors inside	☐	☐	☐
Energy saving light bulbs or LED light bulbs	☐	☐	☐
Renewable energy systems (e.g. solar panels)	☐	☐	☐

This part of the survey uses a table of questions, view as separate questions instead?

7. During the last year, how often did you:

Please don't select more than 1 answer(s) per row.

	Always/most of the time	Sometimes	Rarely	Never	N/A
Turn of lights when leaving a room	☐	☐	☐	☐	☐
Switch off electrical appliances when not in use (e.g. TV, chargers, or computers)	☐	☐	☐	☐	☐
Set thermostat to 18 degrees or lower during cool or cold weather	☐	☐	☐	☐	☐
Operate washing machine only when you a full load of clothes	☐	☐	☐	☐	☐
Limit time spent in the shower	☐	☐	☐	☐	☐
Use a reusable water bottle, coffee cup, travel mug, etc.	☐	☐	☐	☐	☐
Shop for items with minimal packaging	☐	☐	☐	☐	☐
Donate unwanted items to a charity shop	☐	☐	☐	☐	☐
Purchased something second-hand from a charity shop or from an online site (e.g. eBay or Debop)	☐	☐	☐	☐	☐
Check recycling labels on products before deciding which bins they should be deposed in	☐	☐	☐	☐	☐
Repair a broken item or visit a local Repair Cafe	☐	☐	☐	☐	☐

8. Why did you come to event?

- ○ To learn about being green
- ○ Activity/activities seemed interesting
- ○ Free food or other prizes
- ○ Walked past event
- ○ Curious about what is going on
- ○ Other

9. Were you aware of Go Green Week before attending this event?

- ○ Yes
- ○ No

10. If yes, how did you hear about Go Green Week? (select all that apply)

- ☐ Social Media
- ☐ Flyer
- ☐ Friend/family
- ☐ N/A
- ☐ Other

11. Did you enjoy the events today?

- ○ Yes
- ○ No
- ○ Other

12. Are you interested in attending more events/activities like Go Green Week?

- ○ Yes
- ○ No
- ○ Maybe

13. Gender

- ○ Male
- ○ Female
- ○ Other
- ○ Prefer not to say

14. Age

- ○ Under 18
- ○ 18-24
- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65 and older

15. What is your postcode district? (The district is the first three characters e.g. "WR2")

16. What is your highest level of education?

- ○ Less than Secondary
- ○ Secondary Education (e.g. High School)
- ○ Further Education (e.g. College)
- ○ Higher Education (e.g. University)

END

Thank you for taking the time to complete this survey, the University of Worcester and Worcester Polytechnic Institute does appreciate the feedback provided on Go Green Week.

Whilst your data is anonymous it will be managed and processed in accordance with applicable legislation including the Data Protection Act 1998 (DPA) and the General Data Protection Regulations (GDPR). For the purposes of data protection legislation the University of Worcester is the Data Controller. The University's Data Protection Officer is the Head of Information Assurance (infoassurance@worc.ac.uk)

Thank you very much for taking the time to complete our survey about Go Green Week and sustainability in Worcester. Your input is very valuable for our research and we appreciate you taking time out of your day to answer any questions.

If you would like to be entered into the raffle, please write your phone number or email address on the raffle ticket provided by the survey administer.

Enjoy the rest of your week and be sure to check out other sustainable events in the city!

Sincerely, The Go Green Week Team

Appendix E: Email to Potential Participants in Go Green Week

Katy Boom, Director of Sustainability
University of Worcester
St. Johns Campus, Henwick Grove
WR2 6AJ Tel: 01905 855243

Dear Business Owner or Manager:

We are a team of four college students from the United States working with the University of Worcester and the Worcester City Council to organize the upcoming city-wide Go Green Week this April 9th-13th. We will be having different events each day that include Woo Bikes, *Feed the 1,000*, and litter picks. These events will occur at Crowngate Shopping Centre, the South Quay, and outside the Guild Hall. We would like for you to help sponsor events this year.

As a sponsor you could assist us in three ways:

- Provide a material item, gift card, or money that could be given away as prize for participants.
- Run or assist in running an activity during the week.
- Run a booth with information about your business and potential giveaways.

Potential benefits to you and your business:

- Advertising of your logo in all promotional materials.
- Promoted on the Google pinmap tour of the city.
- Potential solutions to sustainability problems your business faces.

If you are interested in learning more or would like to participate, you can contact us at gr-gogreen@wpi.edu or at 074 0090 6021. We would love to talk to you more about how you would want to contribute to the week, whether it would be having a stand at an event, donating money or products, or running an activity.

Thank you for your time and consideration.

Sincerely,

The Go Green Week Team
Eva Bove, Chris Grier, Trent Jones, Leah Steigerwald
Worcester Polytechnic Institute Class of 2020
gr-gogreen@wpi.edu

Appendix F: Risk Assessments

University of Worcester

RISK ASSESSMENT FORM RA1

To be read with SCoP02 'Risk Assessment' setting out how the form should be completed and the University approach to risk assessment. Please ensure you are ***competent*** *to carry out the assessment, if you have any doubts p ease seek advice from your ine manager. Once completed, the contro measures must be adhered to and the form placed in the local Risk Assessment Register.* For further guidance, please refer to the guidance document Risk Assessment SCoP2.

Activity being assessed:	Go Green Week litterpick					Reference no:	
NEW ASSESSMENT	Y	RISK ASSESSMENT FOR EXISTING ACTIVITIES	Y	RISK ASSESSMENT REVIEW			
Location:	South Quay and surroundings			Assessment date:	29.03.2019	Review date:	February 2020
Assessment carried out by (name / job title):	Katy Boom Director of sustainability			Signature of Risk Assessor	Katy Boom		

Likelihood	Guide Description	Chance
5	Almost certain/imminent	>90%
4	Probable – a strong possibility of it happening	50%-90%
3	Possible – it may happen or it may have happened before	10%-50%
2	Unlikely - could happen but unusual	3%-10%
1	Rare – highly unlikely to occur	<3%

Severity	Guide Description
5	Catastrophic - fatality, multiple injuries
4	Major – significant injury, hospitalisation
3	Moderate - injury requiring further treatment, lost time
2	Minor - first aid injury, no lost time
1	Negligible – insignificant injury

		Severity (S)				
		1	2	3	4	5
Likelihood	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5

Risk Rating (RR)	Action
High Risk	Stop the task/activity until controls can be put into place to reduce the risk to a tolerable level
Medium Risk	Determine if further controls are required to reduce risk to as low as is reasonably practicable
Low Risk	No further action, keep under review

General Risk Assessment RA1 Controlledv4

Significant Hazards What could cause harm?	**What harm might occur, and to whom?** Remember to consider all affected groups	**Existing control measures**	**Risk Rating (current controls)** L	S	RR	**Additional control measures** What can we do / use / put in place to further reduce the risks to an acceptable level?	**Residual Risk** L	S	RR
needles/broken glass/sharp objects	Cuts and grazes needle stick injuries	PPE issued, including gloves, litter pickers. Safety briefing given before commencement including never pick up broken glass/needles. Point out location and UW will advise City Council for professional clean up. All work in this area must then cease. Visit A&E if hurt	2	2	L				
vegetation/insects	Stings bites	Where long sleeves and cover legs. Wear sturdy footwear.	2	1	L				
Muddy slippery paths	Slips, trips and falls	Call Off in inclement weather. Only litter pick on designated footpaths and do not go near the river	2	2	L	Emphasise staying on pathways and away from moving vehicles in safety briefing. Hi Visability tabard issued			
Heavy bag	Muscoskeletel injuries	Place full bags in litter bins on route, issue fresh bags	2	2	L				
Aggressive dogs	Dog bites	Avoid area if any evidence of aggressive dogs. Visit A&E if bitten. Report to the police.	1	3	L				

Action Ref	Action required	Who is responsible?	By when?	Date completed
	Ensure students and volunteers are suitably briefed before litter pick commences	Katy Boom	11-04-19	11-04-19

Appendix G: Flyers

Wednesday 10th April 2019
Food Waste - Feed the 1000
Did you know that the average UK family wastes enough food every year to make 1,000 meals?[1]
To reduce food waste (and save money):
- Support local farmers.
- Shop smarter and only buy what you need.
- Purchase and use wonky fruits and veg.. tastes the same and costs less!
- Plan meals beforehand to reduce food waste.
- Be creative with leftovers.
- Store food properly.
- Make donations to local food banks rather than throwing food away.
- Use compost bins for food scraps.
You can reuse plastic by making fun arts and crafts!
The plastic used today will be reused in arts and crafts
Thursday 11th – Saturday 13th at Crowngate Shopping Center,
feel free to visit and take part!
9th - 13th April 2019
GO GREEN WEEK
#bethechange
University of Worcester
SUSTAINABLE DEVELOPMENT GOALS
@uwsustainability
@WorcesterGGW
1. http://www.lovefoodroadshow.co.uk/feed_1000.html

Thursday 11th April 2019

Seed Packets DIY

Did you know that 97% of the UK's wildflower meadows have vanished since 1930?[1]

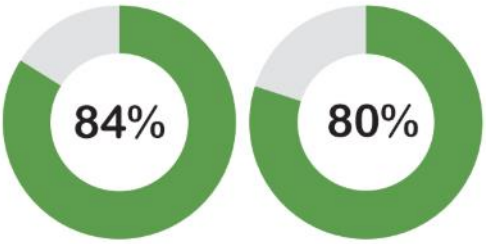
Why does this matter? Wildflower Meadows...
- Support many types of life.
- Provide food for important pollinators that help local farmers.
- Prevent excess flooding and soil erosion.
- Help remove carbon from the atmosphere.[2]

What can you do?
- Plant more wildflower varieties in your yards.
- Participate in wildflower restoration events such as National Meadow Day.

How to use the seed bombs:
1. Throw the seed bombs into bare soil parts of your back garden.
2. Wait to see what flowers grow!

Friday 12th April 2019

Pollinator Flyer



84% of crops and 80% of wildflowers rely on pollinator insects.[1]

The 7 principles for arresting the declining rate of pollinators:

1. All pollinators are valued.
2. Pollinator proportions properly monitored.
3. Reduce use of harmful pesticides.
4. Wildflower landscapes restored.
5. Bring back the rare and threatened pollinators.
6. Places for pollinators among people.
7. Wild pollinators from imported threats.

9th - 13th April 2019

GO GREEN WEEK

#bethechange

University of Worcester SUSTAINABLE DEVELOPMENT GOALS

@uwsustainability

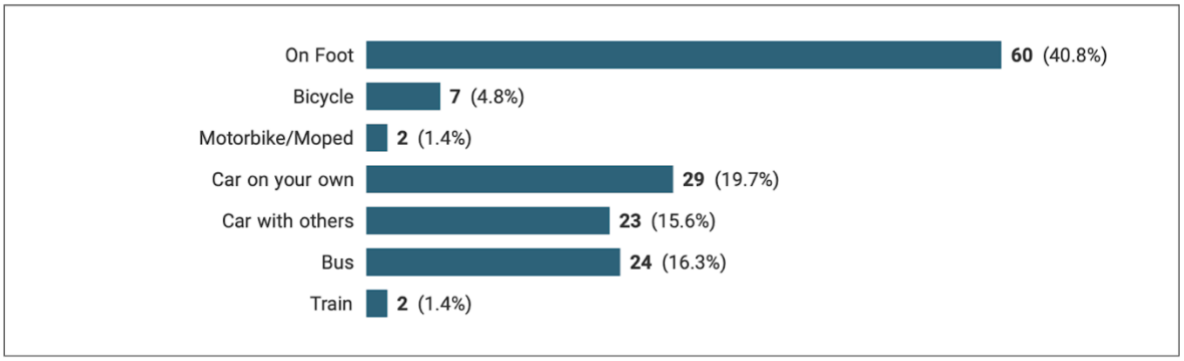
@WorcesterGGW

1. https://www.buglife.org.uk/sites/default/files/Pollinator%20manifesto%20with%20covers_1.pdf

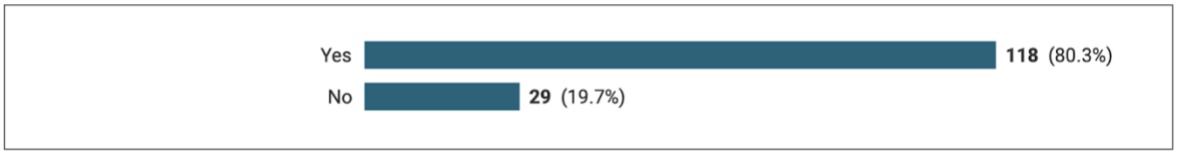
Saturday 13th April 2019
Climate Action
How can you reduce your carbon footprint?
- Use colder settings for washing machine.
- Dry clothes on a drying rack.
- Use more public transit.
- Turn off the lights when not in use.
- Unplug electronics, chargers, and appliances when not in use.
- Use reusable containers and items rather than single-use items.
9th - 13th April 2019
GO GREEN WEEK
#bethechange
University of Worcester
SUSTAINABLE DEVELOPMENT GOALS
@uwsustainability
@WorcesterGGW

Appendix H: Full Survey Results

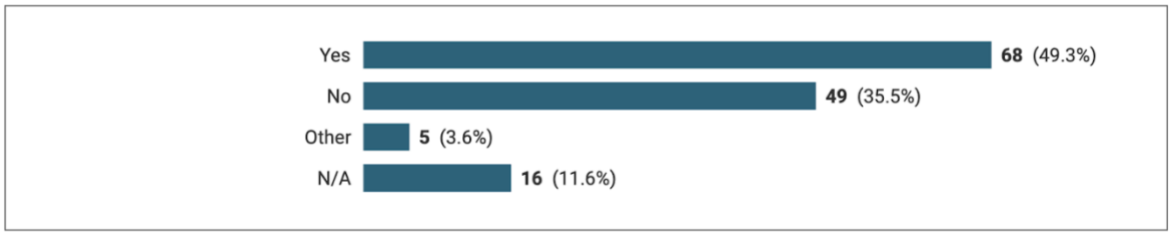
1 How do you primarily travel?



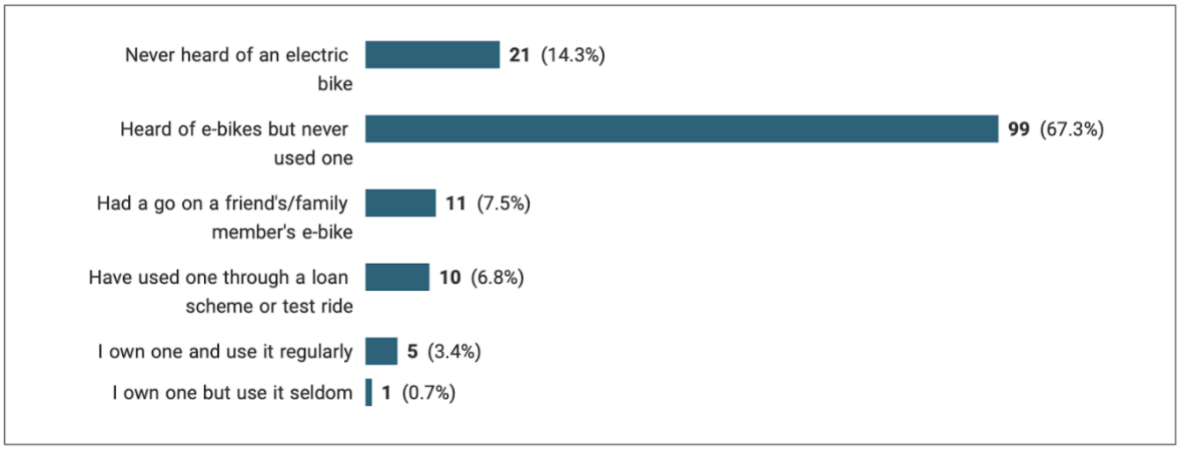
2 Can you ride a bike?



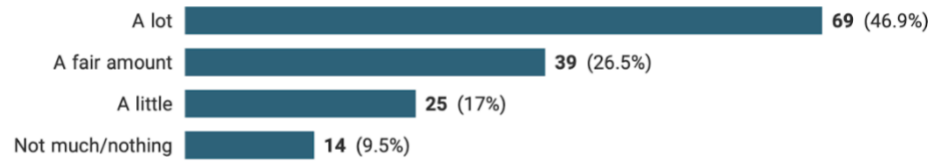
3 If yes, would you be interested in a city-wide bike share scheme for Worcester?



4 Have you ever used an electric bike (e-bike)?



5.1 Recycling of glass, plastic and paper

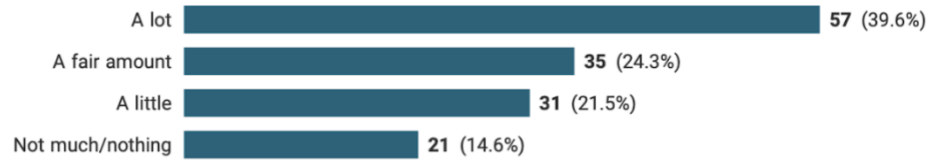


Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

5.2 Recycling electronic waste (e.g. mobile phones)

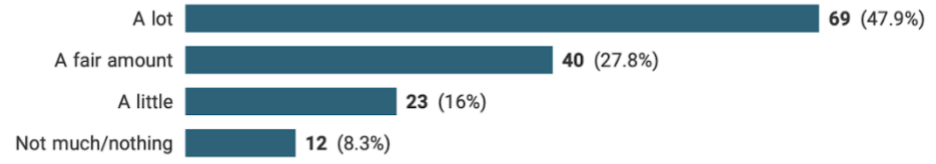
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

5.3 Disposing of food waste



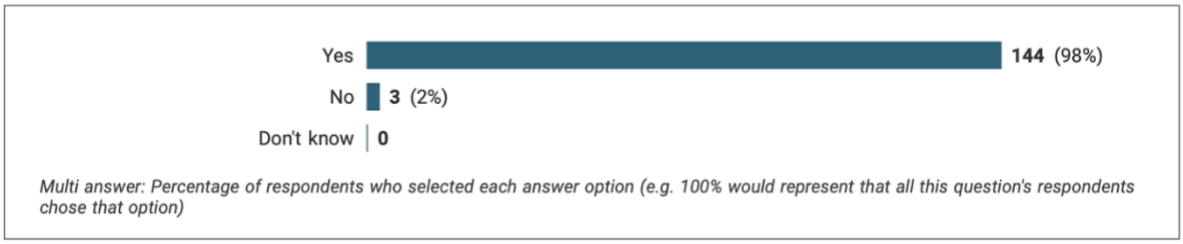
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

5.4 Donating unwanted items



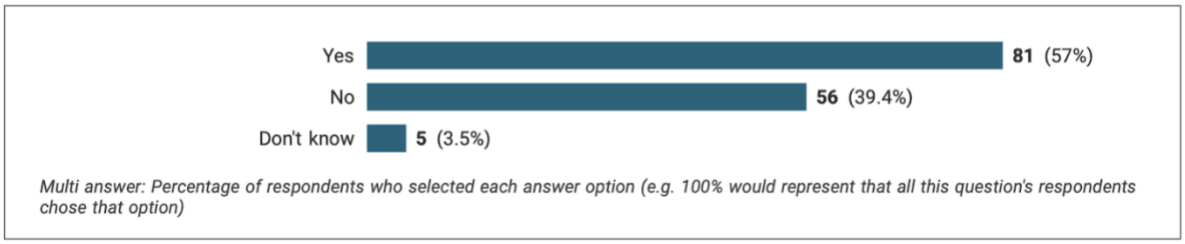
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

6.1 Recycling bins



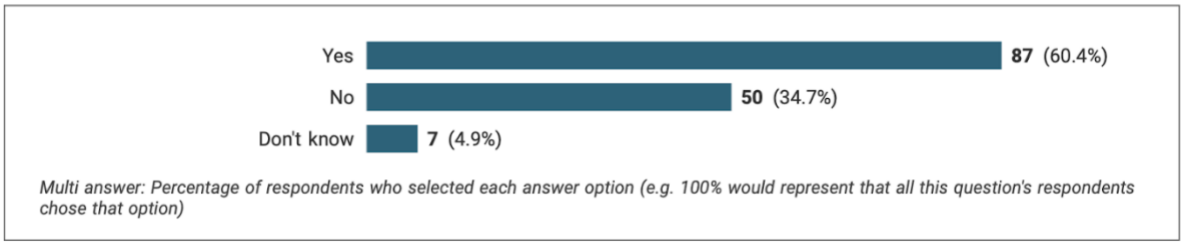
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

6.2 Compost bin



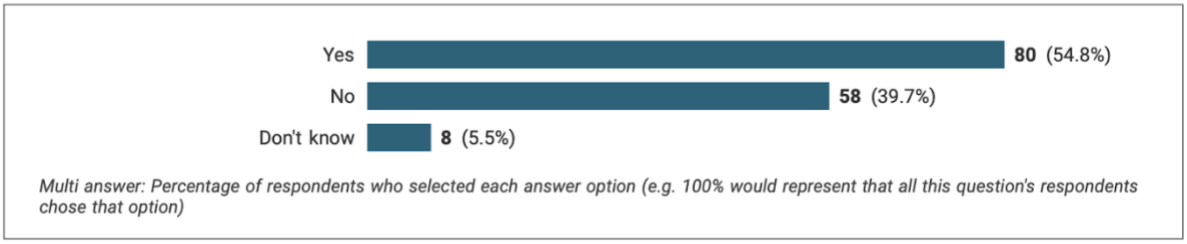
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

6.3 Programmable thermostat (e.g. TRV's or able to adjust the temperature on individual radiators)



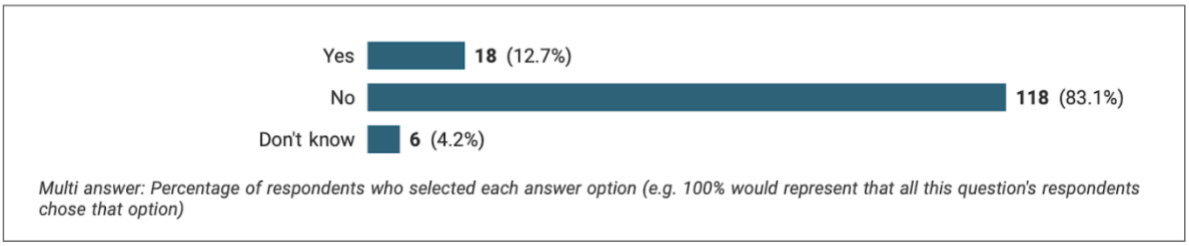
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

6.4 Water-saving items (e.g. low-flow shower heads or dual flush loos)



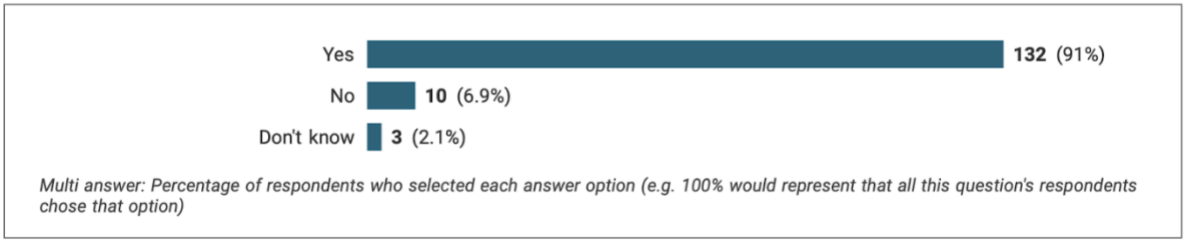
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

6.5 Light motion sensors inside



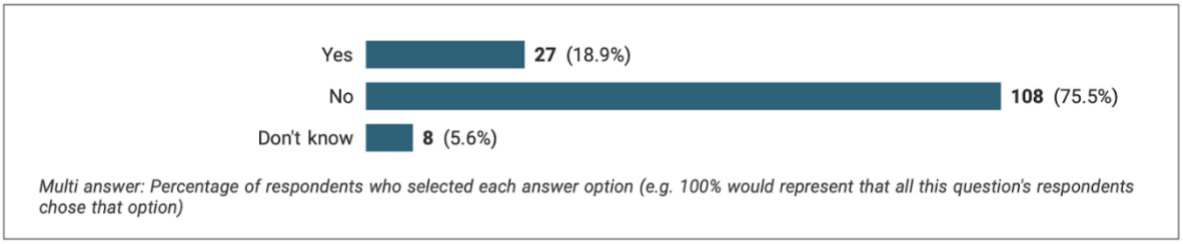
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

6.6 Energy saving light bulbs or LED light bulbs



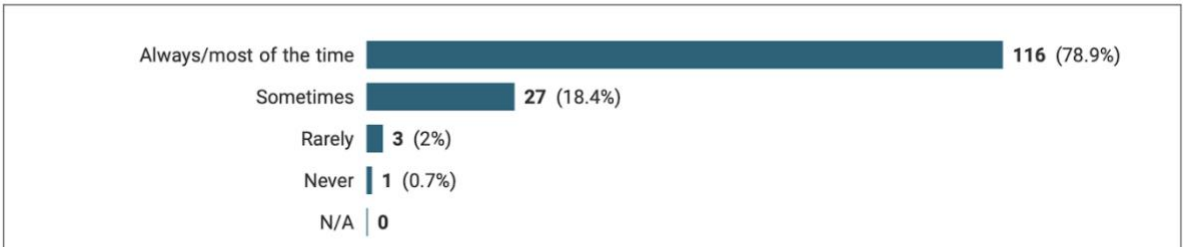
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

6.7 Renewable energy systems (e.g. solar panels)



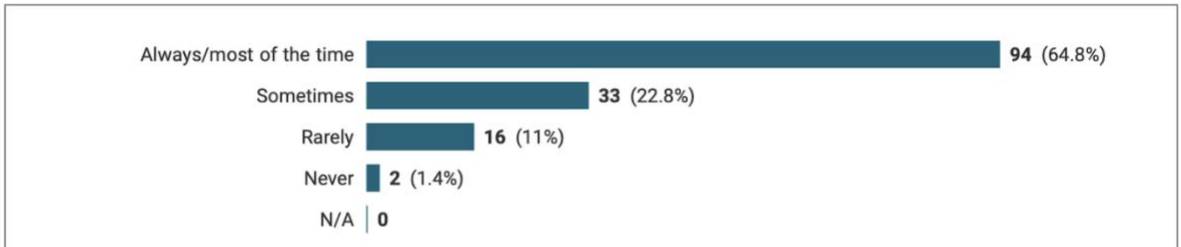
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.1 Turn of lights when leaving a room



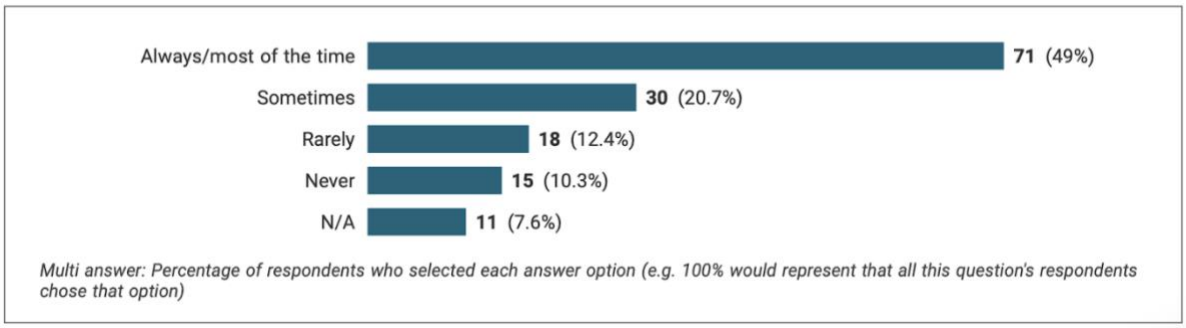
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.2 Switch off electrical appliances when not in use (e.g. TV, chargers, or computers)



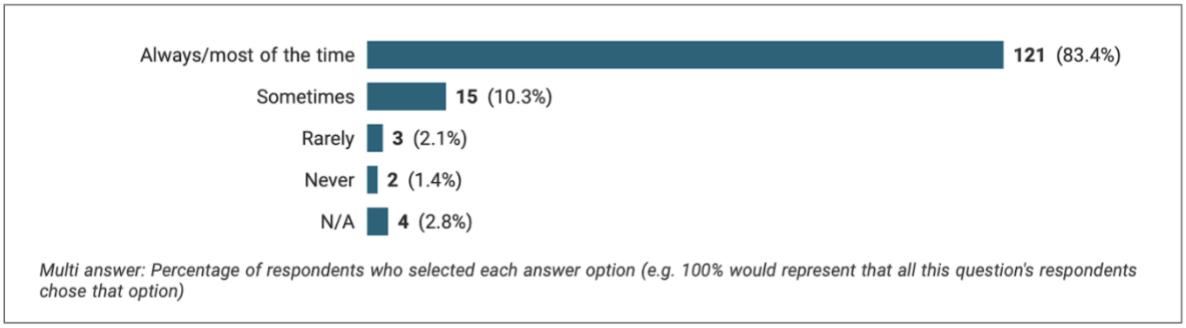
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.3 Set thermostat to 18 degrees or lower during cool or cold weather



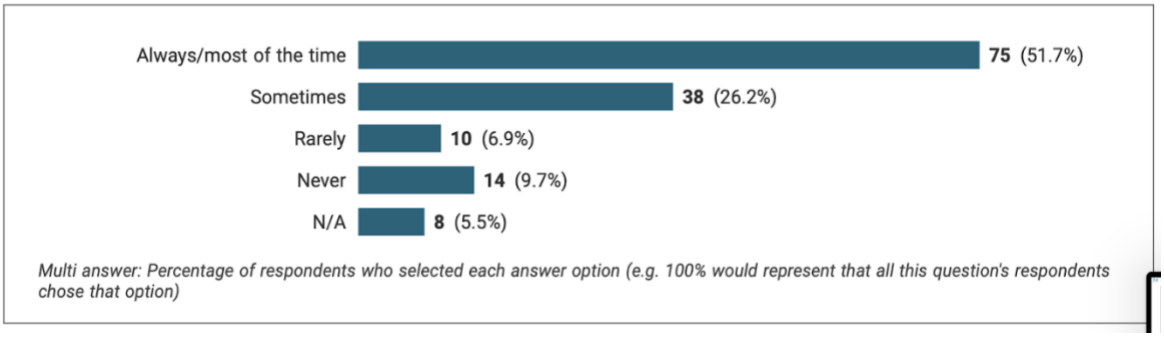
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.4 Operate washing machine only when you a full load of clothes



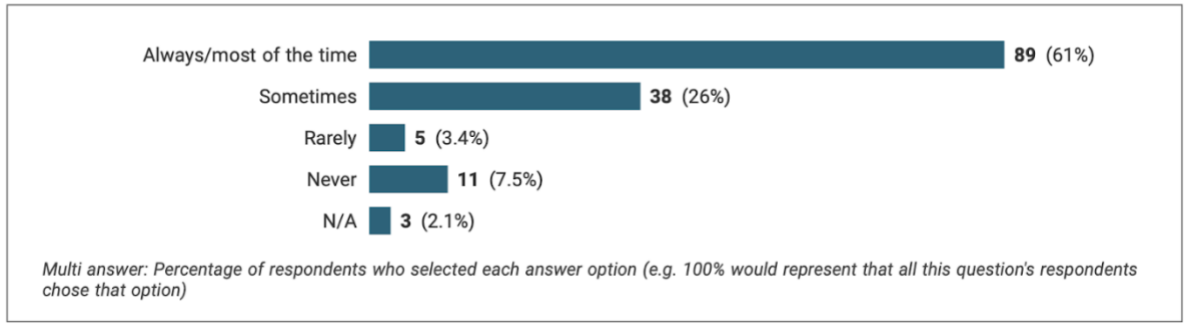
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.5 Limit time spent in the shower



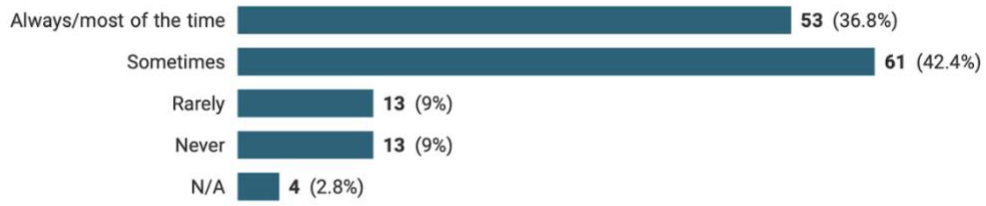
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.6 Use a reusable water bottle, coffee cup, travel mug, etc.



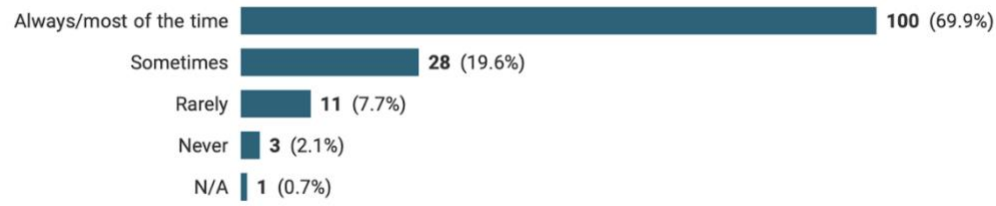
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.7 Shop for items with minimal packaging



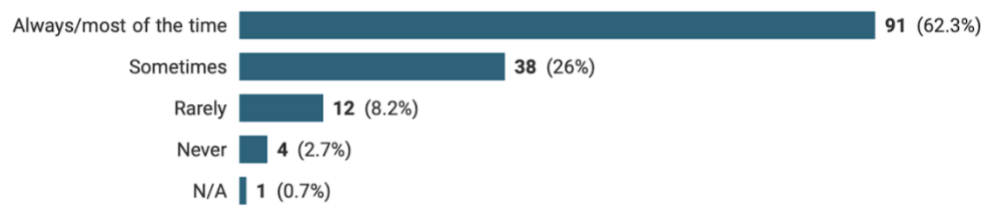
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.8 Donate unwanted items to a charity shop



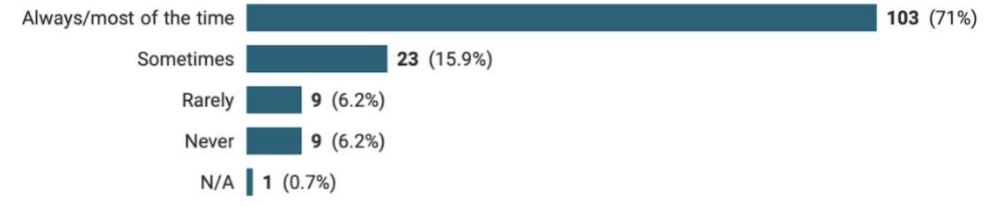
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.9 Purchased something second-hand from a charity shop or from an online site (e.g. eBay or Debop)



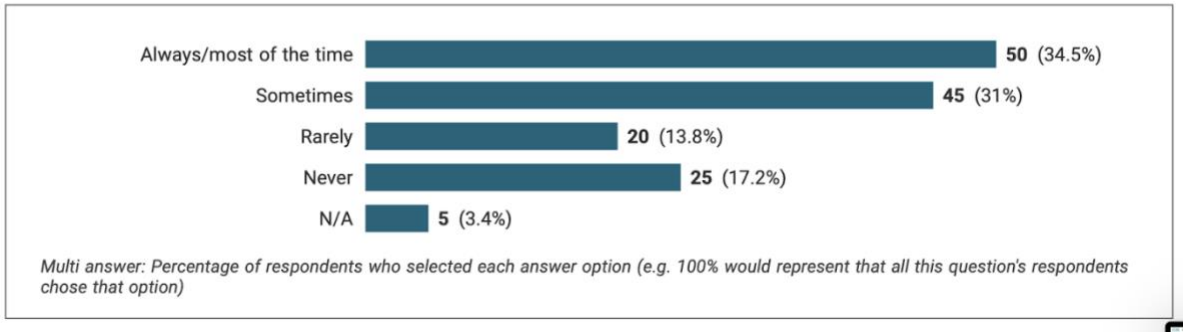
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.10 Check recycling labels on products before deciding which bins they should be deposed in



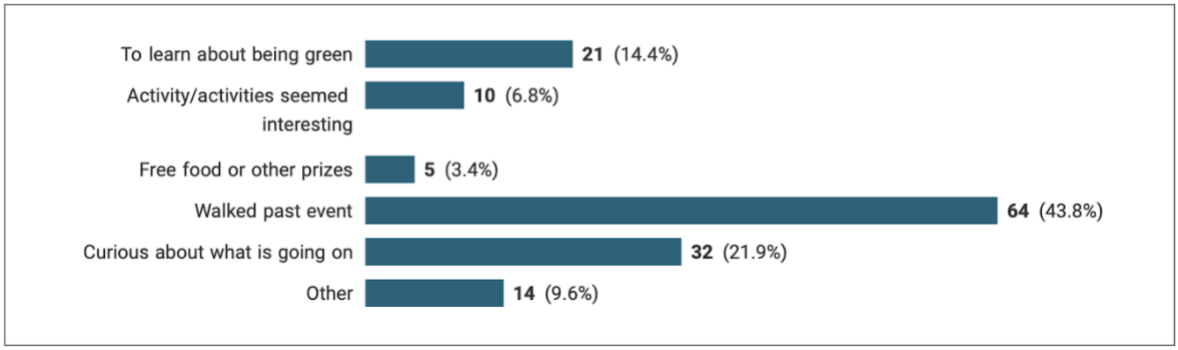
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

7.11 Repair a broken item or visit a local Repair Cafe



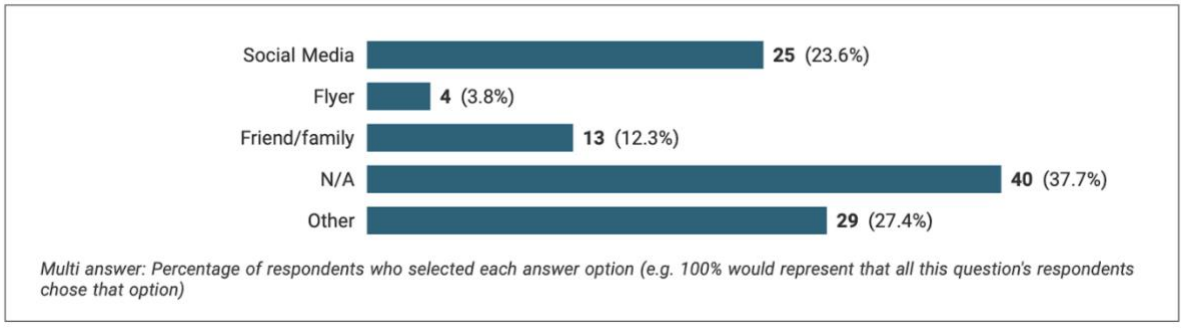
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

8 Why did you come to event?



9 Were you aware of Go Green Week before attending this event?

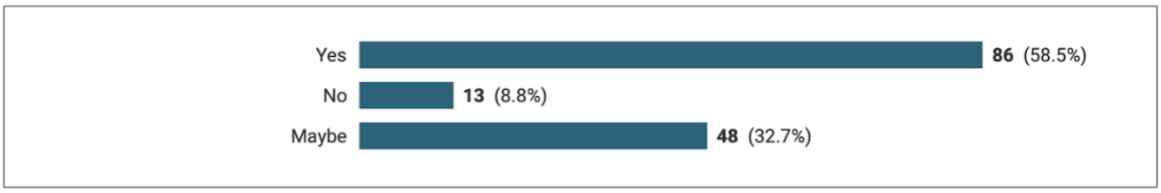
10 If yes, how did you hear about Go Green Week? (select all that apply)



Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

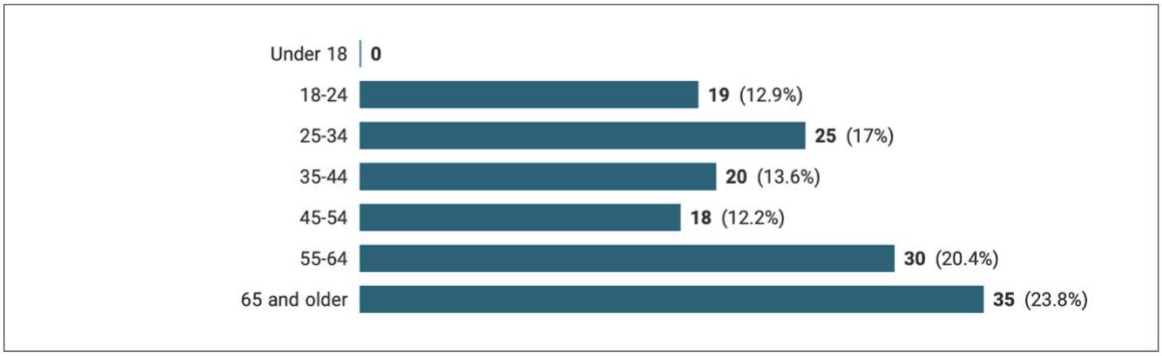
11 Did you enjoy the events today?

12 Are you interested in attending more events/activities like Go Green Week?

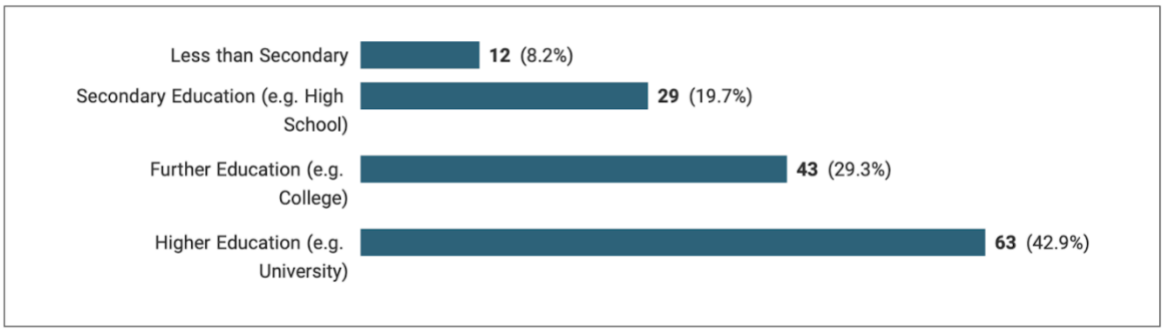


13 Gender

14 Age



15 What is your postcode district? (The district is the first three characters e.g. "WR2")

Dy8 3un	WR3	Wr4 0ef
Wr24ef	WR5	WR4
WR2	Wr3	WR5
Wr5	Wr2	WR5
Wr2 5rq	Wr4	WR4
Wr49qz	WR1 3NJ	Wr14
College	Wr5 £aw	Wr3
Gl51 9au	Dy12	WR2
Wr2	WR2 5QL	Wr2
WR2 6LU	Wr5 1nx	Wr25ed
WR4	Wr3	DY13
Wr5	WR2 5rw	Wr5
Wr1	Wr6	Wr4
Wr5	Wr3	WR2
WR2	Wr3	Wr24dq
WR66TW	Wr3	WR5
Wr3 7eh	WR4 983	WR2
wR3	WR1	Wr14
Wr2	wr10 1LD	Wr4
DY1170TE	Wr3 7lt	Wr14
Wr3	Wr6	Wr4
Wr11	WR2	Wr142pq
Hr8	Wr26nx	Wr14
Wr5	Wr14	Dy13
Wr2	B63	Wr4
Wr3	WR2 6AJ	wr5 2rp
Wr6	Wr2	Wr10
Wr3	Wr2	wR2 5uh
Wr4	WR2	Wr49hg
Wr4	B63	Wr5
Wr3	Wr5	Wr10
WR3	b96	WR14
De55	Wr14 2by	WR5
WR5	WR5	WR2
B261ND	Wr26ds	Wr13lx
WR5	WR3	Wr1
GL14	wr9 8LU	Wr4
GO143NQ	wR2	Wr40jf
Wr3	WR4	Wr5 1ed
RG17 Berk	Wr9	Wr15
Wr1	wR2 6jg	WR15
Wr2	wr3	WR5
Wr1	WR2 4ba	Dy11
Wr1	Wr7 4 Ar	DY1
Dy11	WR4	Wr5
Wr4	WR4	Wr14
Wr10	WR2	Wr2
WR5	Wr101jw	Wr25lx
WR5		

16 What is your highest level of education?