

Report to: Environment Committee, 18th July 2023

Report of: Deputy Director - Corporate Policy and Strategy

Subject: CARBON EMISSIONS PROJECTIONS AND PROGRESS UPDATE FOR THE ENVIRONMENTAL SUSTAINABILITY STRATEGY ACTION PLAN

1. Recommendation

1. That the committee notes the content of this report and in particular:

- 1.1. The significant activity that has been undertaken and is continuing in order to deliver the agreed action plan, focused on carbon emission reduction and other environmental improvements;**
- 1.2. The reductions in the Council's carbon emissions that has been achieved since 2018;**
- 1.3. Note the potential route to carbon neutral for the Council, and that the actions that support this are subject to a high level of uncertainty and risk; and**
- 1.4. The reductions in the City's emissions and the requirement for national policy to deliver the changes required for the city to become carbon neutral by 2030.**

2. Introduction

- 2.1 This report includes the six-monthly update on the progress to deliver the Environmental Sustainability Strategy Action Plan 2022-24. A summary of the activity under each theme of the Strategy is provided in report sections 7-13 and an action-by-action update is provided in **Appendix 3**.
- 2.2 This report includes a summary of the emissions profiles, progress to reduce and projections for both the Council and the City carbon emissions in section 4.
- 2.3 A detailed outline of the emissions of the Council and activities that must take place to decarbonise the Council is provided at **Appendix 1**, including how the main sources of emissions may be tackled or eliminated, such as by electrification of the fleet and of the crematorium and the reduction in emissions from the leisure centres.
- 2.4 Whilst it is clear that there is a scenario to achieve carbon neutrality for the Council, delivery of this by 2030 is unlikely as many of the actions are subject to a high level of uncertainty and risk.
- 2.5 A detailed outline of the emissions for Worcester City is provided in **Appendix 2**, with a look ahead at some of the key changes which would need to happen to allow for the necessary carbon reductions to achieve carbon neutrality.

Emissions have already fallen by 45% since 2005 (to 2020, latest available data at the time of writing).

- 2.6 Appendix 2 draws on the Government greenhouse gas emission data for local authority areas and uses the SCATTER tool to map potential reduction pathways. Significant action on city wide emission reduction is being taken across our areas of direct and indirect influence through leadership as the city council, but reducing the main sources is very dependent on outside factors. Appendix 2 also analyses the national emissions projections according to the policies which have been announced to date. It is clear that the city is very reliant on national policies and funding in order to achieve carbon neutrality, particularly around domestic heating and transport, and it is unlikely these changes will take place by 2030.
- 2.7 This report also provides a summary of the key report published in March 2023 from the Intergovernmental Panel on Climate Change, highlighting that changes to the climate which are already taking place and the importance of rapid, deep and sustained carbon reduction to limit the irreversible changes which will cause widespread adverse effects.

3. Background

- 3.1 Following the declaration of the climate emergency in July 2019, the Environmental Sustainability Strategy for the City of Worcester was approved by this Committee in October 2020.
- 3.2 This Committee approved the first Action Plan for the delivery of the strategy in March 2021, and the Action Plan for the second phase of delivery of the strategy was approved in November 2022.
- 3.3 In order to ensure effective governance of the strategy and associated action plan, it was agreed that this committee would receive progress reports on the delivery of the action plan twice yearly.
- 3.4 Alongside the declaration of a climate emergency, the Council pledged to work towards the city becoming carbon neutral by 2030.
- 3.5 The Environmental Sustainability Strategy was written and approved by Council in 2020 and was to be refreshed three years after this. Work on this refresh has begun and it is expected an updated Strategy will be brought to this Committee in the Autumn.

4. Summary of carbon emission profiles, progress and projections

City Council Emissions

- 4.1 A carbon emission report for the City Council is provided at Appendix 1, giving an overview of carbon emission reduction to date and potential options for further decarbonisation, working towards carbon neutrality ('net zero') by 2030.
- 4.2 Emissions for the latest 2022-23 year are still being calculated and will be reported to this Committee in the performance report in November 2023. However, it is not expected that emissions will have changed significantly from the 2021-22 figures.

4.3 Emissions for the Council in 2021-22 were 1912tCO₂e. This is an increase from the figure in 2019-20 of 1662tCO₂e, because of the recent inclusion of emissions from the outsourced leisure centres. Excluding the leisure centres, emissions would have fallen by around 370tCO₂e. This reduction is primarily due to the purchase of renewable electricity.

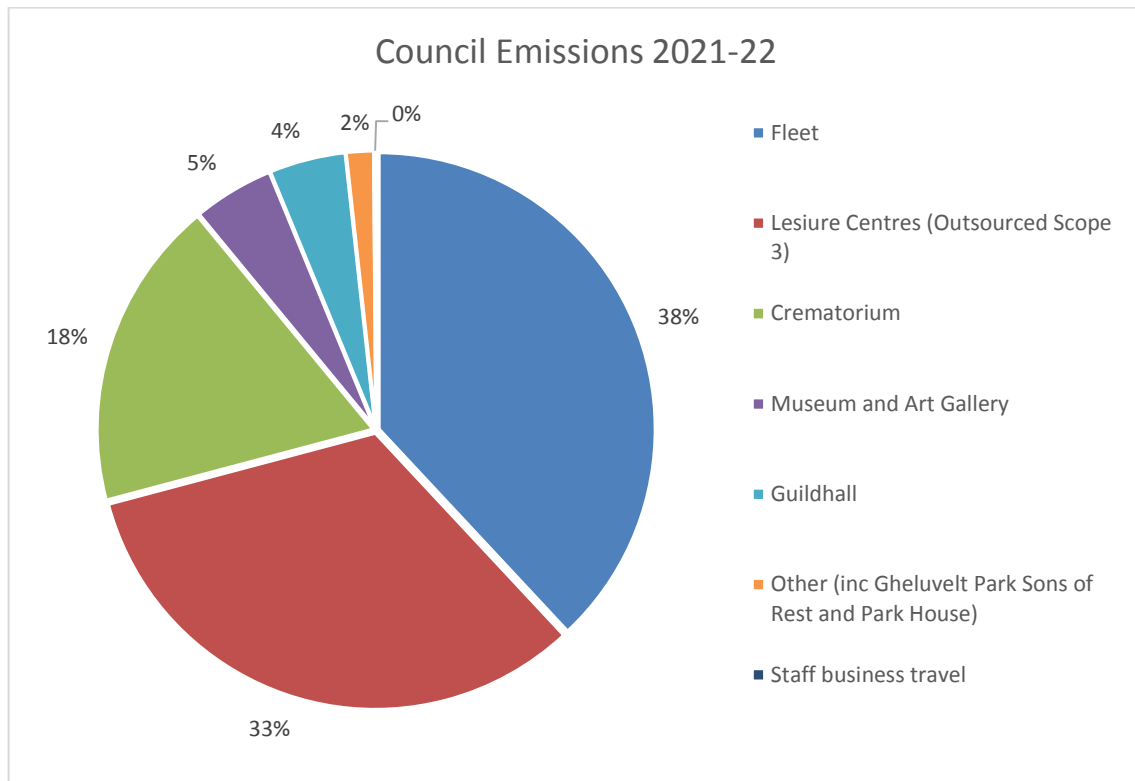


Figure 1. Council Emissions Profile for 2021-22

4.4 Figure 1, the Council's emissions profile, shows that reducing or eliminating emissions from the key sources of the fleet of refuse trucks and other vehicles, the Crematorium, and from the leisure centres, is fundamental to the Council becoming carbon neutral.

4.5 The Crematorium accounts for 18% of the Council's emissions overall in 2021-22. Reducing emissions from the Crematorium is dependent on the Bereavement Services review, with the option for electric cremators being considered. This would enable the Council to significantly reduce emissions from the Crematorium.

4.6 The three leisure centres account for around 33% of the Council's total carbon footprint, with Perdiswell alone being responsible for 28% of emissions (18% from gas usage and 10% from electricity usage).

4.7 Emissions from gas usage at the Guildhall and Museum and Art Gallery contribute around 4-5% each to the Council's footprint, and the most likely pathway to reducing emissions from these buildings is the development of a zero-carbon city centre heat network.

4.8 Further analysis of potential ways in which emissions can be reduced or eliminated from Council buildings and operations is included in Appendix 1.

Worcester Emissions

- 4.9 A carbon emission report for Worcester is provided as Appendix 2. This report details the sources of carbon emissions, the remaining carbon budget for the city and some potential carbon emission reduction projections from the national 'SCATTER' tool.
- 4.10 The emissions profile for Worcester shows that emissions come from a range of sources. The largest source of emissions is where we live, the domestic sector. Transport is the next largest source, being responsible for 27% of emissions in 2020. Industry, commercial and public sectors account for 12%, 7% and 8% respectively.

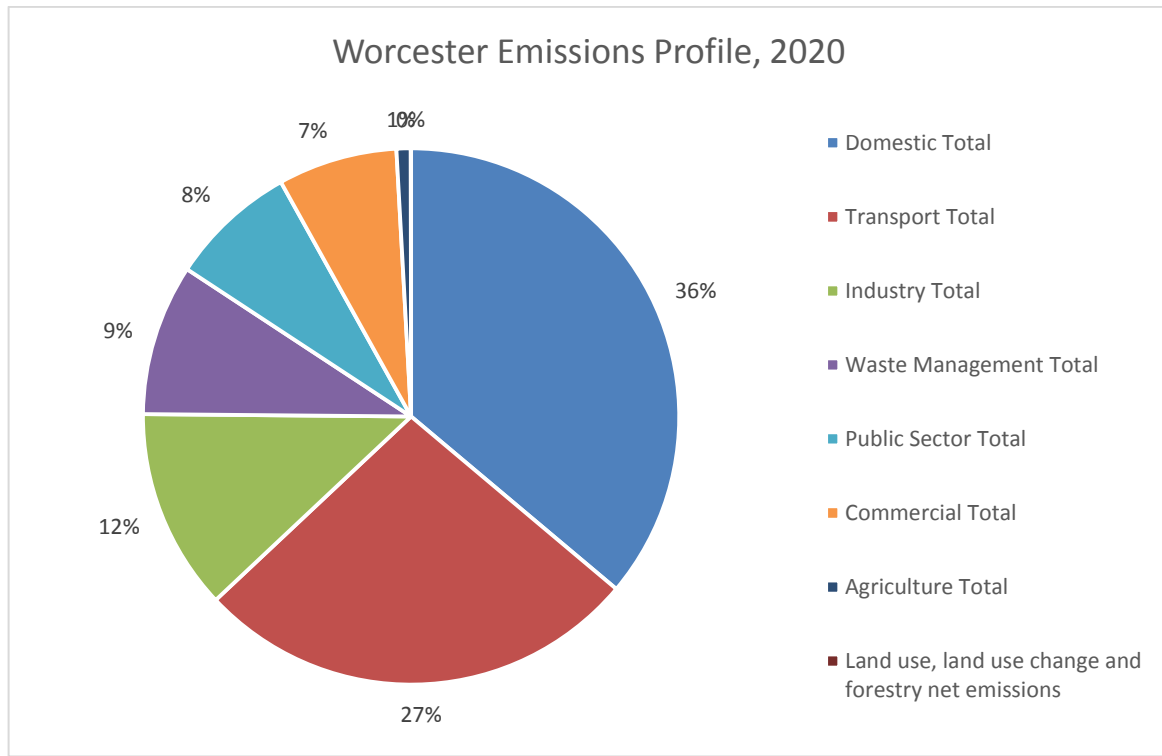


Figure 2. Worcester Emissions Profile, 2020

- 4.11 The report shows that there has been a 45% reduction in Worcester's greenhouse gas emissions between 2005 and the latest data, 2020 (2021 data should be published imminently, due June 2023).

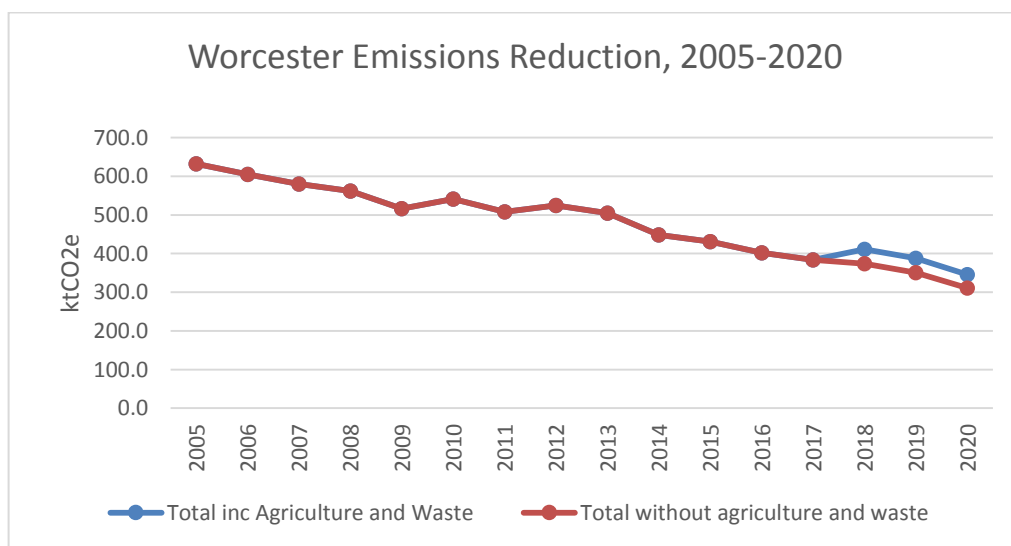


Figure 3. Worcester Emissions Reduction, 2005 to 2020 (latest available data)

- 4.12 The carbon budget research shows that to stay within the recommended carbon budget Worcester needs to achieve an average reduction of CO₂ of around -12.6% per year.
- 4.13 The SCATTER tool outlines and assess the impact of a wide range of actions to reduce emissions, such as greater deployment of solar PV on buildings, widespread use of heat pumps in domestic, industrial and commercial settings, significant reductions in demand for electricity use by lighting and appliances and cars, buses and rail to all be electrified.

5. Global outlook: IPCC report summary

- 5.1 In March 2023, the Intergovernmental Panel on Climate Change, the United Nations body for assessing the science related to climate change, published its sixth synthesis report¹. This latest report is based on the content of the three Working Groups Assessment Reports and three Special Reports.
- 5.2 This latest Synthesis report states that 'human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020'.
- 5.3 Widespread and rapid changes have already occurred, with human-caused climate change affecting many weather and climate extremes in every region across the globe. This is leading to widespread adverse impacts and related losses and damages to nature and people, with vulnerable groups who have contributed the least to current climate change being disproportionately affected.
- 5.4 Looking ahead, the report states that 'some future changes are unavoidable and/or irreversible but can be limited by deep, rapid and sustained global greenhouse gas emissions reduction. The likelihood of abrupt and/or irreversible changes increases with higher global warming levels.'

6. Progress of actions within the Environmental Sustainability Action Plan

- 6.1 Details for each action within the action plan are provided in the performance report at Appendix 3. The following sections of this report provide a commentary on a theme-by-theme basis.

7. Environmental Sustainability Strategy Theme: Carbon Neutral City Council

Emissions from buildings

- 7.1 The City Council uses green zero-emission rated electricity across all of its sites, meaning that it has recorded no emissions from electricity usage (using market-based emission factors) for the last three consecutive years (2022-3, 2021-2 and 2020-1).

¹ [AR6 Synthesis Report: Summary for Policymakers Headline Statements \(ipcc.ch\)](https://www.ipcc.ch/report/ar6/synthesis/)

Emissions from fleet

- 7.2 A trial of an electric Refuse Collection Vehicle (RCV) took place in 2022. Unfortunately, the trial showed that battery technology is not yet sufficient to make these vehicles a viable option for Worcester, with the location of the Energy-from-Waste plant, EnviRecover, some distance outside of the city in Hartlebury. The Council has committed to further investigations as technology improves and is hoping to purchase the first electric RCV in 2025/26.
- 7.3 Activities are taking place to encourage employees to use active transport where possible to reduce the emissions from grey fleet. The Council's e-bikes are now in regular use with an established booking system and regular communications encouraging staff to make use of these. The now-common use of video conferencing through Teams has reduced the need to travel for many meetings, and this is supported by the Council's hybrid working policy of a mix of home and office-based working.

Outsourced emissions

- 7.4 For the first time last year, the emissions from the outsourced leisure centres were included within the Council's emission figures. These emissions account for 33% of the Council's carbon footprint. Perdiswell is the biggest contributor to this, as expected as the largest leisure centre and the only one with a swimming pool within the Council's portfolio (the swimming pool alone is responsible for one third of the leisure centre emissions).
- 7.5 In February 2023, a capital allocation of £550,000 was agreed in order to fund energy efficiency improvements and renewable energy installations on all three leisure centres. Freedom Leisure have produced a list of recommended measures which would reduce the carbon footprint of the leisure centres by around 10%. Solar PV on all three leisure centres, along with replacement lighting and variable speed drives, are part of the recommendations.
- 7.6 A feasibility report has been produced assessing the opportunity to increase the size of the solar PV array at St Martin's Gate car park.
- 7.7 PV projects which were previously assessed as being uneconomic due to the extremely long pay back periods may be worth reassessing in light of the higher energy prices.

8. Environmental Sustainability Strategy Theme: Carbon Neutral Worcester

Emissions from housing

- 8.1 We are continuing to deliver energy efficiency improvements to privately owned housing under the LAD3 and HUG1 schemes (Sustainable Warmth Competition). The Department for Energy Security and Net Zero (DESNZ) extended delivery of both elements of the scheme, with HUG1 being extended to end of May and LAD3 until the end of September 2023.
- 8.2 Under HUG1, 14 properties were completed. Under LAD3, 12 properties have been completed and a further 14 are in progress. Exact carbon savings figures are not available but savings can be around 0.5tCO₂e per home for retrofit measures.

Emissions from transport

- 8.3 Car Clubs offer an attractive alternative to car ownership and are ideal for people who only need access to a vehicle for a few hours a week. As vehicles have to be pre-booked, Car Clubs can also reduce the number of spontaneous trips typically made by car owners which are under two miles in length and could have been walked.
- 8.4 Enterprise Cars located its first Car Club vehicle in Arboretum in Autumn 2022. The City Council worked closely with Enterprise to promote availability of the vehicle within the area and take up has gradually increased.
- 8.5 Enterprise now wishes to expand its Car Club offer in Worcester and will be operating two Car Club parking spaces at Tallow Hill car park (WR5 1BL) on a twelve-month trial basis. Worcester Community Trust has also agreed to allocate one permanent Car Club parking space at Warndon Community Centre (Shap Drive, WR4 9NX). It is anticipated that the Car Club vehicles will be available at both sites by the end of July 2023.
- 8.6 An Active Travel Action Plan was agreed by the Health and Wellbeing Committee on 12 June, setting out the Council's plans to encourage walking, wheeling and cycling as a preferred mode of transport for short journeys around the city.
- 8.7 Work to set up a bike share scheme for the city, one of the Towns Fund projects, has started with the first stage of the procurement process going live in June. This project is expected to realise carbon savings through enabling cycling for journeys across the city, however, estimating the value of the carbon savings is difficult at this stage without knowing the proposed number of bikes and therefore journeys expected in the city.
- 8.8 This committee approved an Electric Vehicle Charging Strategy for the city in June, setting out the Council's role to accelerate the transition to electric vehicles by local residents and businesses. As well as provision of electric vehicle charging points on the Council's own land, the Council will work with partners to encourage the installation of charging infrastructure.
- 8.9 The number of electric vehicles in the city is growing rapidly, as outlined in the Electric Vehicle Charging Strategy. It is expected that by 2025, there will be 7,600 electric vehicles in the city (14% of the total number of registered vehicles).
- 8.10 A match funding award of £68,500 from the Government's On Street Residential Charging Scheme has enabled a project to install chargers at Tallow Hill and King Street car parks, both near residential areas with high numbers of households without off street parking.
- 8.11 An allocation of £140,000 remains in the Council's capital programme for further investment in electric vehicle chargers. Following the completion of the installations at Tallow Hill and King Street car parks, investigations will take place regarding the financial business case to install chargers at leisure and community facilities in the city.

- 8.12 The rapid and fast chargers at St Martin's Gate remain very popular, with a total of over 15,000 uses since they went live in the autumn of 2021, to the end of May this year.

Emissions from industrial, commercial and other public sector organisations

- 8.13 The Council has been awarded £230,000 to develop a detailed techno-economic feasibility study and project development proposal, which will examine the potential and practical implications involved with creating a Heat Network for Worcester.
- 8.14 This work builds on the initial feasibility study for a city-centre based heat network which was completed in 2021 and showed that by use of water source heat pumps in the River Severn, heat could be provided to a range of commercial and public sector buildings. The potential scheme had a heat load to be generated from the River Severn of around 3MWh/year which would have a carbon saving of around 550tCO₂e.

Support for community projects

- 8.15 The successful Environmental Community Grants scheme has continued through the first half of 2023 and has now allocated the full amount of £20,000.
- 8.16 The types of projects which have been supported recently include a recycling waste pop up shop, recycling workshops, a beekeeping project and a supermarket food redistribution project.

9. Environmental Sustainability Strategy Theme: Sustainable Economy

- 9.1 Measures to boost the low carbon economy in Worcester will be included within the wider Strategy review and will potentially form part of an overarching economic development strategy to include a number of areas of work.
- 9.2 Worcestershire County Council's existing clean growth business support programmes, the Business Energy Efficiency Programme and Low Carbon Opportunities Programme have now supported 54 businesses in the city, with grants of around £150,000 received. These grants have supported the installation of renewable energy systems and clean growth innovations in these small to medium enterprises.
- 9.3 There is an agreement with Worcestershire County Council for them to deliver the new Shared Prosperity funded-decarbonisation business support programme on behalf of Worcester City Council. The programme will offer both grants and business advice. It is expected that there will be a launch event in early autumn.
- 9.4 Worcester BID invited the Economic Development and Sustainability teams to run a Sustainability-themed BID Breakfast for members in March. 16 businesses attended and heard about opportunities to calculate and reduce carbon emissions and improve recycling rates.

10. Environmental Sustainability Strategy Theme: Natural Environment

- 10.1 The City Council's biodiversity action programme underpins all work in this area and will be reported separately to this committee twice yearly.

- 10.2 The new action, 'Tree planting and management - Queens Green Canopy', has seen over 770 trees planted, with a variety of fruit trees and native woodland whips.
- 10.3 Environment Committee agreed in November 2022 to provide funding to support the development and launch of the Wild about Worcester Way, a new wildlife corridor and walk encouraging communities to engage with nature around the city. The launch event in May attracted around 100 people and engagement with the initiative has been positive.
- 10.4 The project to investigate opportunities to enhance biodiversity on the city's waterways has started with the procurement of consultants to assess and report on the options and costs available.
- 10.5 A biodiversity management plan for all land managed by the City Council has been drafted and will be subject to further consultation before adoption. This includes the establishment of existing and improved practices to maximise the biodiversity benefit of the Council's land management.

11. Environmental Sustainability Strategy Theme: Preparing for Climate Change

- 11.1 Work continues to promote flood resilience and to work with residents. The Diglis Flood Action Group has met and resident feedback on flood response has been reviewed. The Environment Agency have started works at Toronto Close.
- 11.2 A new project to review the Council's business continuity plans to ensure the impact of heatwaves and droughts has been assessed has not yet started, however services delivered successfully through heat event of summer 2022. A new system of Heat Health Alerts has been launched by the Government and the Met Office and following the first alert being issued in June, the Council was able to ensure employees and the public were aware of the guidance.

12. Environmental Sustainability Strategy Theme: Resource Efficiency

- 12.1 Nationally, household recycling rates have quadrupled in the UK since 2000. However, since 2010 these rates have levelled off, and the average amount of household waste recycled in England now fluctuates around 44%. The most recent figures indicate that Worcester's household recycling rate is 36.6%.
- 12.2 In 2019 the Government ran an in-depth consultation on the potential standardisation of household recycling across England. A full government response is expected to be published this year.
- 12.3 The delivery of the actions under the Resource Efficiency theme have remained focused on the basics of encouraging residents to reduce, re-use and recycle more, and in January 2023 a new communications campaign was created to achieve this.
- 12.4 A leaflet has been produced which Worcestershire Regulatory Services distributing to affected businesses such as take-aways, regarding the Government's ban on single use plastic items, due to come into force in October 2023.

13. Environmental Sustainability Strategy Theme: Engagement

- 13.1 As outlined above a programme of community engagement has been carried out through face-to-face visits, alongside the Council's usual communication channels.
- 13.2 The calendar of sustainability campaigns has been established and this is being used to inform our public communications. An Instagram account ([@SustainableWorcester](#)) has been recently established to provide insight into the work of the sustainability team and inspire residents and others with actions they can take to reduce carbon emissions and improve their local environment. It is hoped that this account will reach new audiences, with Instagram known for attracting a younger audience than Facebook and Twitter. The account will be monitored to assess levels of engagement.

Ward(s): All
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Background Papers: Worcester City Council Environmental Sustainability Strategy 2020-2030