

Carbon Management Plan 2022-25

Draft v10 – 5.5.2022

Introduction

Oxfordshire County Council committed to reaching net-zero carbon emissions in our estate and operations by 2030 and to embed climate considerations into all our decision making. In 2020, we published our Climate Action Framework, setting out how we are going to reduce our emissions, transform into a climate active organization and play our part in Oxfordshire’s transition to net zero.

Since then, addressing the climate and ecological emergency became the council’s number one priority. The Climate Action Framework is being complemented by the Climate and Ecological Policy, in development.

The Carbon Management Plan 2022-25 sets out the approach to reducing the emissions from our buildings, highway assets (streetlighting, traffic signals and signage), fleet, and staff business travel in their own vehicles. These are the emissions that we committed to reduce to net zero this decade. The Plan is part of a wider Climate Action Programme that also includes our actions to embed climate and ecological considerations into the organizational DNA and importantly to enable Oxfordshire’s transition to net zero across transport and connectivity, buildings, schools, energy systems, waste and consumption, and the natural environment.

Putting our own house in order

While our emissions represent only 0.22% of Oxfordshire’s total¹, we are conscious that we all need to play our part in the transition to net zero, adopting more efficient ways of working, travelling, and consuming. By leading the way and seeking to become net zero significantly ahead of the national 2050 timeline, we hope to demonstrate what can be achieved and inspire residents and local businesses to join us on this rewarding journey.

The Carbon Management Plan 2022-25 outlines the decarbonisation approach taken for each area of our ‘net-zero by 2030’ target, as well as short-term and longer-term actions that add up to the council’s emissions trajectory to 2024/25.

¹ Oxfordshire total 2018 emission as provided by SCATTER

Progress so far

In the decade between our baseline year of 2010/11 and 2020/21, our emissions have decreased 60%².

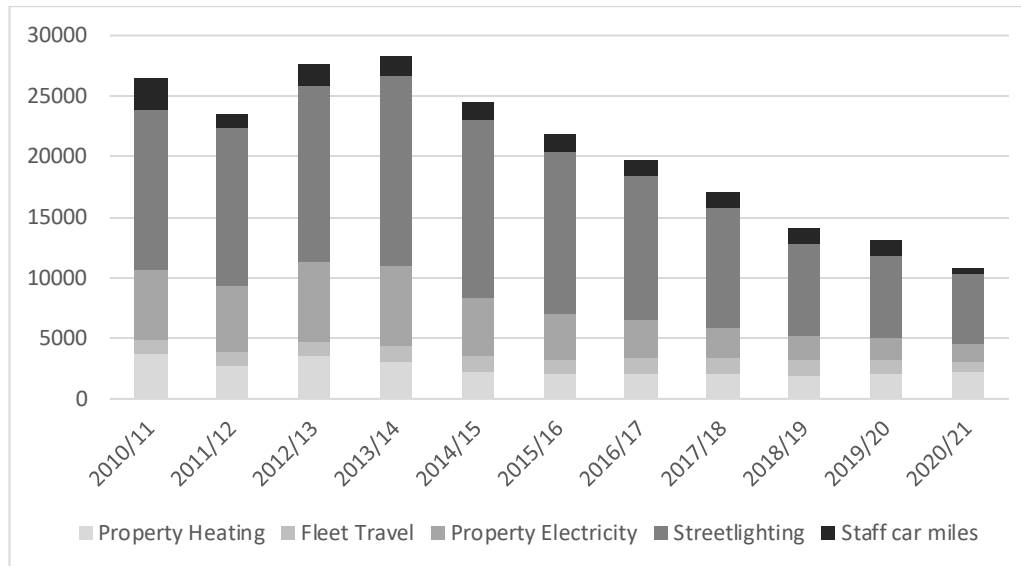


Figure 1 Evolution of emissions included in the 'net-zero by 2030 target'

Key past projects and initiatives to decarbonise our estate and operations:

- 38 per cent of street lighting replaced with LEDs

² Total figures per year might change as internal data review has identified the following issues:

- OCC Highways fleet being reported in Scope 3 along with Skanska; this should have been included in our scope 1
- New bunkfuel data from Wallingford depot
- Business mileage being done by agency staff

- £2.1m for heat decarbonisation and energy efficiency measures at 7 corporate buildings and 4 schools funded by Public Sector Decarbonisation Scheme
- 23 electric vehicles and 44 charge points on council sites
- Virtual meetings and agile working policies
- Benson Library off the gas grid with solar panels, battery storage and heat pump
- 42 solar panels at Ron Groves House in Kidlington
- LED and Building Management System upgrades in corporate buildings

Our emissions

About half of our emissions come from streetlighting and 30% from our buildings. Fleet and staff travel emissions represent about 20%.

In 2020/21, due to COVID restrictions and changes in work practices, fleet and staff travel emissions dropped by 27% and 67% respectively. We expected that, in 2021/22, emissions from highways assets and electricity usage in buildings will continue to decline, while fleet and staff travel emissions are likely to show a degree of bounce back as services resume.

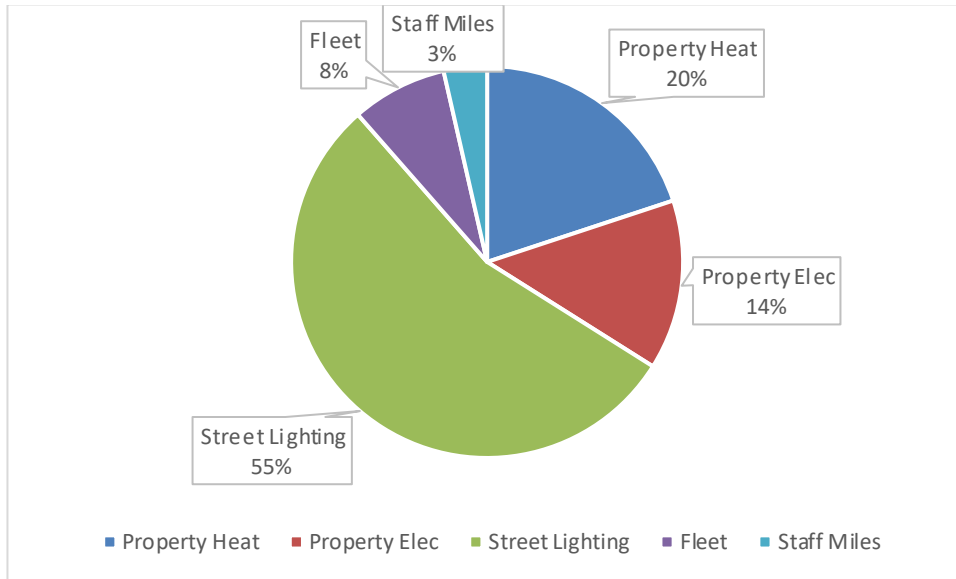


Figure 2: OCC emissions 2020/21 Source: 2020/21 Greenhouse Gas report

Scope 1, 2 and 3 emissions

This carbon management plan covers the following emissions, as described in our annual greenhouse gas report:

Scope 1	direct emissions from fuel use on council estate and fleet
Scope 2	indirect emissions from purchased electricity
Scope 3	indirect emissions from staff travel and electricity distribution

Tackling our Scope 3 emissions

Due to data availability, we currently report on a limited subset of our Scope 3 emissions. However, we are aware of their importance – supply chain emissions typically account for more than 80 per cent of a local authority’s total carbon footprint. Consequently, we have committed to consider the climate and carbon implications of our key investment decisions and working with suppliers to reduce the emissions associated with the delivery of council contracts.

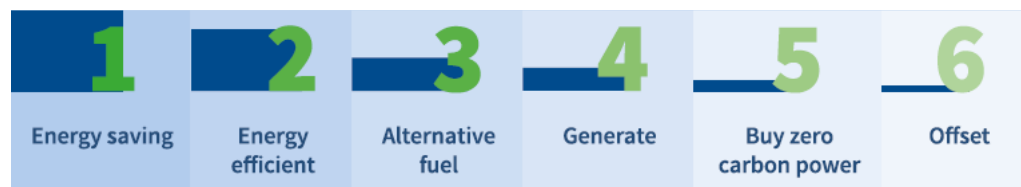
Building on the progress that has already been made in understanding emissions of specific contracts and capital projects, we will expand our capacity to develop a comprehensive view of the council’s supply chain emissions. We will work collaboratively with the supplier base to design and implement measures to inform, support and encourage suppliers to deliver contracts that are increasingly aligned with science-based targets on net-zero emissions.

Our approach

Guiding principles

Our decarbonisation approach is guided by the following principles:

Demand reduction (avoid-shift-improve). Our actions embody the ‘energy hierarchy’ to reduce demand and ensure best value. We prioritise actions that avoid energy consumption, such as avoiding unnecessary journeys, and actions that save energy, such as replacing streetlighting with LEDs. Saving energy not only reduces the amount of carbon emitted but protects against price increases. Once energy demand has been minimized, fossil fuels are replaced with cleaner energy, ideally locally produced renewables. Offsets are only used as a last resort.



Inclusive transition. We consider the potential impacts of our decarbonisation measures on local communities. We take a participatory approach, ensuring communities are engaged and supported to take action, particularly those most vulnerable to the impacts of the climate and ecological emergency.

Innovation. Our estate is a ‘living lab’ to trial new ideas and accelerate innovation. We share our learning and are actively seeking new business models to make investment for zero-carbon viable.

Decarbonisation approach

Buildings

The buildings decarbonisation strategy is based on the following principles:

- Adhere to the new design standard in any new buildings to minimise consumption and use renewable energy e.g., using low-carbon heating systems instead of gas boilers
- Encourage staff behaviours that save energy in our buildings
- Improve the way we manage energy consumption in our buildings, drawing on the data provided by our energy management systems to identify savings opportunities and move towards smart buildings
- Focus upon rationalisation of our estate to minimise travel and consolidate assets to support service delivery in light of the growth in population.
- Deliver low carbon retrofit measures in our properties:
 - carry out investment grade energy building audits and condition surveys to identify a full suite of measures
 - determine which measures offer a viable invest-to-save payback and which require external funding
- Explore opportunities to buy renewable energy for our estate via a power purchase agreement in order to support local generation and a resilient local energy system
- Identify an offset threshold above which alternative investment options will be considered (aligned with the council's offset strategy to be developed).

Highway assets (streetlighting, traffic signals and signage)

OCC's highways assets include streetlighting, traffic signals and signage (signage includes illuminated bollards, illuminated signs and miscellaneous other).

The approach to decarbonisation involves delivery of the £40m, six-year streetlighting LED conversion programme that started in 2018. To decrease energy usage and support biodiversity, the possibility of reducing illumination at night when appropriate is also being explored.

The approach for traffic signals currently involves the conversion of eight traffic signals a year to LED and delivery of the Department for Transport-funded project to convert a further six sites in 2022/23. A business case for the conversion for an additional 40 sites is awaiting funding approval.

The approach for signage involves reviewing opportunities to convert bollards to solar when replacing the LED traffic signals.

Fleet

OCC's fleet include 382 vehicles³, with the largest fleets in Fire and Rescue Service, Supported Transport, Community Support, and Highways.

Type of vehicle	Total	EVs
Car	56	10
SUV/4x4	27	-
Car-derived van	4	-
Large van	11	11
Multi-purpose vehicle	43	1
Large minibus	89	2
Fire appliance	56	-
Other HGV	1	-
Other machinery	5	-

The approach to fleet decarbonisation will prioritise avoidance of emissions by rationalising the fleet, encouraging sharing of resources, and replacing fossil fuels with zero emissions alternatives.

The first step will be putting in place an integrated fleet management system and a dedicated team to centralise all fleet information. The 'One Fleet' system, which will be up and running by March 2023, will rationalise fleet usage and support the development of a fleet replacement plan.

³ 2018/19 data, adjusted to know changes in 2020

The council has an ‘electric by default’⁴ policy that stipulates that we will work to phase out petrol and diesel vehicles in our own fleet, ensuring where operationally feasible all new vehicle acquisitions are zero tailpipe emission by default. We will consider other ultra-low emission alternatives where zero emission is not feasible. To minimise the cost on the public purse we will undertake this transition as vehicles come up for renewal.

Electric alternatives for different vehicle types are at a variety of stages of maturity. Currently, the upfront costs of most electric cars and vans are compensated by lower lifetime running and maintenance costs, making electric the preferred option. For larger vehicles, such as heavy goods vehicles and specialist vehicles such as fire engines, there is still an innovation and/or a viability gap. We will actively explore alternatives and innovative solutions, bringing forward business cases as they become financially and operationally viable.

Fleet electrification

OCC has been transitioning to a net-zero fleet and increasing its charging infrastructure, with 24 EVs and 44 charge points currently in place.

By mid 2023/24, a pipeline for a full EV fleet will be developed by Property, Procurement and Finance, which will inform the expansion of council’s EV charging infrastructure.

OCC aims to electrify all cars and vans by 2028.

Fleet innovations

The council’s specialist vehicles fleet, such as fire engines are a challenging area to decarbonise by 2030. Working with partners to explore options for these challenging assets is an important step on our journey to net zero.

An example is Innovate UK-funded project HySPERT (Hydrogen Special Purpose Electric Vehicle Platform for Refuse Collection and Fire Trucks). Oxfordshire County Council is currently working with technology partner ULEMCo on a feasibility study for a hydrogen fuel cell fire engine. The first phase of the project will create a full specification and detailed engineered design for a prototype vehicle to be completed by 31st March 2022. We will then seek to secure additional funding for second phase to physically build a prototype hydrogen fuel cell vehicle in 2022/23.

Staff business travel (in staff’s own vehicles)

The decarbonisation approach for staff business travel prioritises avoiding travel (e.g., by meeting online when possible), reducing miles (e.g., by optimising routes), and replacing travel in cars with walking and cycling (e.g., using one of the pool e-bikes available). When needing to use a car, staff will be

⁴ Ultra-Low Emission Vehicle (ULEV) Policy Statement 2019

encouraged to use pool EVs. An electric car benefit scheme is also available for staff looking to get a new electric or plug-in hybrid car, with payments deducted from gross salary and consequently savings in income tax and national insurance contributions.

The approach involves retaining some of the mileage-saving initiatives put in place due to Covid-19 restrictions and new ways of working. In 2020/21, staff business travel mileage and associated carbon emissions decreased by almost 70% compared to 2019/20 (from over 4.2 million miles to 1.4 million miles).

To maintain a low level of travel-related emissions while ensuring service provision, the following CO2e reduction targets were agreed (from 2019/20 baseline):

- Environment and Place: 10% reduction by 2022/23 and 40% by 2024/25
- Commercial Development, Assets & Investment: 10% reduction by 2022/23 and 30% by 2024/25
- Cultural Services: 10% reduction by 2022/23 and 30% by 2024/25.

The remaining directorates and services are in the process of defining their targets.

The targets allow for post-Covid bounce back and are reductions in carbon emissions associated with business travel, not necessarily reductions in the number of miles. This way, services are not restricted in their ability to travel, but encouraged to use low-carbon modes of transport.

Staff business travel targets will be reviewed next year following analysis of the 2021/22 mileage data, which will provide a more realistic post-Covid picture of carbon emissions.

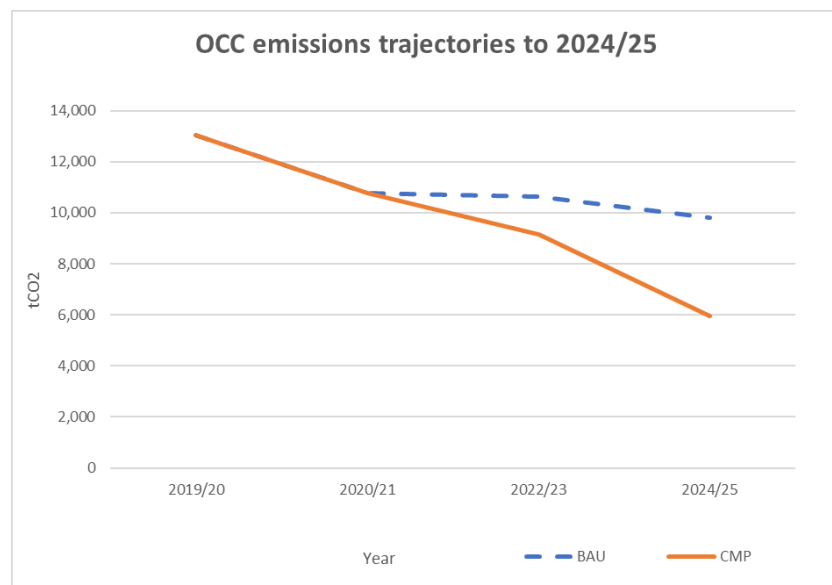
Implementation of the **staff business travel programme** will support services to meet their targets:

Year	Staff business travel programme activities
2022/23	<ul style="list-style-type: none"> • Promote uptake of electric car benefit scheme • Continue ‘digital by default’ policy for training and internal meetings • Enforce the travel hierarchy and encourage active travel • Explore opportunities for service-specific electric pool cars and/or vans
2023/24	<ul style="list-style-type: none"> • Encourage better route planning • Offer driver training
2024/25	<ul style="list-style-type: none"> • Promote car sharing

Estimated emissions reduction

The actions set out in this plan, combined with the decarbonisation of the electricity supply, are likely to put the council emissions on a trajectory to reduce emissions to about 6,000t CO₂e by 2024/25, which is equivalent to a 75% reduction from our 2010/11 baseline. An estimated 8,500 t CO₂e will be saved over this period, equivalent to 3,447 return flights from London to New York or the amount of CO₂ absorbed by 1.4 million trees over the 3-year period.

The annual carbon savings from each action will only be realised in full in the following year and reflected in that year's greenhouse gas report.



Financing the transition

Some elements of the transition to net zero are likely to deliver financial savings. For example, the ongoing replacement of streetlighting with LEDs, which represents an investment of £40m, has a payback period of 9.7 years and will deliver £77m savings over 20 years. It will also reduce streetlighting energy consumption by 75% and carbon emissions by 95% (from 2019/20 baseline).

On the other hand, retrofitting our buildings and replacing specialist vehicles will require significant investment that is unlikely to generate a financial return within the council's normal payback period.

Activities planned for 2022/23 will provide the data to assess the level of investment required to transition our buildings and fleet to net zero. An invest-to-save programme will be developed, and business cases will be put forward for funding, including from grant sources such as the Public Sector Decarbonisation Scheme.

Carbon Management Plan 2022-25

Types of actions

The carbon management plan includes **direct actions** that generate measurable emissions reductions – e.g., replacing lighting with LEDs – and **enabling actions** that create the conditions for future reductions – e.g., putting in place a fleet management system.

Monitoring and reporting

A Delivery Group formed by the Officer Leads (see table below) will be accountable for delivery of the Carbon Management Plan to the Climate Action Programme Board.

When possible, progress will be monitored using the council's Carbon Neutrality dashboard, which displays the latest data on energy and fuel consumption, carbon emissions, and progress on key projects, along with KPIs and targets agreed with services.

Progress on the actions will be reported to:

- Climate Action Programme Board quarterly
- SLT and Members quarterly via Corporate Performance report
- Cabinet annually.

Planned actions for 2022/23

Action	Type	Estimated investment	Status and source of funding	KPI	Estimated annual CO2e	Officer Lead	Cabinet Lead
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					savings ⁵		
Highway assets							
Continue conversion of streetlighting to LED	Direct	£41m total (£17m 22/23)	Approved funding – capital programme Delivery ongoing	% streetlights converted to LED	1,395 tCO2e	Head of Highway Maintenance	Cabinet Member for Highways Management
Convert 14 traffic signals to LED	Direct	£755k	Approved funding – revenue budget (£340k) and DfT (£415k) Delivery ongoing	Energy or carbon intensity (kWh or CO2e per asset)	5 tCO2e	Head of Highway Maintenance	Cabinet Member for Highways Management
Convert 40 traffic signals to LED	Direct	£104k	Approved funding – capital programme	Energy or carbon intensity (kWh or CO2e per asset)	18 tCO2e	Head of Highway Maintenance	Cabinet Member for Highways Management
Develop and implement policy for streetlight dimming to support Dark Skies	Direct	TBD	Pending funding	Energy or carbon intensity (kWh or CO2e per asset)	TBD	Head of Highway Maintenance	Cabinet Member for Highways Management

⁵ The full year carbon savings for actions implemented in 2022/23 will be realised in 2023/24 & reported in the 2023/24 GHG report

Action	Type	Estimated investment	Status and source of funding	KPI	Estimated annual CO2e savings ⁶	Officer Lead	Cabinet Lead
Buildings							
Complete the delivery of PSDS projects	Direct	£1.33m	Approved funding - Public Sector Decarbonisation Scheme grant	% CO2e reduction	176 t CO2e	Director of Joint Property Services	Cabinet Member for Finance
Develop and implement an Agile Working Strategy	Enabling	TBD	Pending funding – revenue (HR) and capital (Property)	--	--	Director of Joint Property Services	Cabinet Member for Finance
Recruit a Decarbonisation Manager	Enabling	£60k	Fully funded - revenue budget	--	--	Director of Joint Property Services	Cabinet Member for Finance
Implement active building energy management	Direct	£27-33k	Recycling fund – pending parameter setting	Energy or carbon intensity (kWh or CO2e per m2)	99 t CO2e	Director of Joint Property Services	Cabinet Member for Finance
Seek funding for works on 9 priority sites	Enabling	--	Capital bids and grants funding	--	--	Director of Joint Property Services	Cabinet Member for Finance
Carry out investment grade energy & condition audits	Enabling	£5-8k per site	Pending funding – Low Carbon Skills Fund, revenue budget, capital programme	--	--	Director of Joint Property Services	Cabinet Member for Finance
Release 1 leased building (estate rationalisation)	Direct	--	Revenue saving	% CO2e reduction	237 t CO2e ⁷	Director of Joint Property Services	Cabinet Member for Finance

⁶ The full year carbon savings for actions implemented in 2022/23 will be realised in 2023/24 & reported in the 2023/24 GHG report

⁷ Assumed release of Abbey House end 2022/early 2023

Delivery of heat decarbonisation measures at Hook Norton Fire Station	Direct	£20k	Funding approved – Public Sector Decarbonisation Scheme 3	% CO2e reduction	13 t CO2e	Director of Joint Property Services	Cabinet Member for Finance
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Action	Type	Estimated investment	Status and source of funding	KPI	Estimated annual CO2e savings ⁸	Officer Lead	Cabinet Lead
Fleet							
Set up One Fleet – integrated fleet management system	Enabling	c. £250k	Fully funded – ICT and Property	--	--	Director of Joint Property Services	Cabinet Member for Finance
Evaluate EV lease vs ownership model	Enabling	--	Staff time only (part of One Fleet work)	--	--	Director of Joint Property Services/ Head of Procurement	Cabinet Member for Finance
Procure electric vehicles to replace end-of-life/lease vehicles in Fire, Hard FM and Highways	Direct	TBD	Pending funding – Service revenue budgets	% fleet electrification	0 (EVs delivered in 23/24)	Head of Procurement	Cabinet Member for Finance
Shift diesel fire fleet to HVO subject to feasibility study	Direct	TBD	Feasibility – staff time only Implementation cost - TBD	% CO2e reduction	TBD	FRS Business Manager	Cabinet Member for Community Services and Safety

⁸ The full year carbon savings for actions implemented in 2022/23 will be realised in 2023/24 & reported in the 2023/24 GHG report

Trial of IHAT technology for fire engines subject to business case	Direct	TBD	Business case—staff time only Trial costs - TBD	% CO2e reduction	TBD	FRS Business Manager	Cabinet Member for Community Services and Safety
Launch HySPERT Phase2	Enabling	TBC	Pending funding— Innovate UK	--	--	Head of iHub	Cabinet Member for Corporate Services
Staff travel							
Implement staff business travel programme	Direct	--	Staff time only	% CO2e reduction % staff green miles	143 tCO2e ⁹	Director of Joint Property Services	Cabinet Member for Finance

⁹ Assumed directorates agree to carbon reduction targets. Actions to support this reduction include a 'digital by default' approach to meetings, engagement with high-mileage users, enforcement of the travel hierarchy, take up of the electric car benefit scheme, explore opportunities for electric pool cars and vans, and encouraging better route planning.

Later actions for 2023-25

Action	Type	Estimated investment	Status and source of funding	Estimated annual CO2e savings ¹⁰	Officer Lead	Cabinet Lead
Highway assets						
Complete conversion of streetlighting to LED	Direct	£41m total £6.8m 23/24	Fully funded – capital programme Delivery ongoing	384 tCO2e	Head of Highway Maintenance	Cabinet Member for Highways Management
Convert 16 traffic signals to LED	Direct	£500k	Fully funded – revenue budget Delivery ongoing	2 tCO2e	Head of Highway Maintenance	Cabinet Member for Highways Management
Buildings						
Deliver funded energy efficiency projects	Direct	TBD (pending audit results)	Pending funding – PSDS4, recycling fund, capital governance process and/or revenue bid	TBD (pending audit results)	Director of Joint Property Services	Cabinet Member for Finance
Deliver energy management programme (e.g., behaviour change, smart systems)	Direct	--	Staff time only	TBD	Director of Joint Property Services	Cabinet Member for Finance
Carry out investment grade energy & condition audits	Enabling	£5-8k per site	Pending funding – Low Carbon Skills Fund, revenue	--	Director of Joint Property Services	Cabinet Member for Finance

¹⁰ The full year carbon savings for actions implemented between 2023-25 will be realised in either 2024/25 or 2025/26 & reported in the 2024/25 and 2025/26 GHG report.

			budget, capital programme			
Submit business cases for funding	Enabling	--	--	--	Director of Joint Property Services	Cabinet Member for Finance
Release 4 leased buildings (estate rationalisation)	Direct	--	Revenue saving	237 tCO ₂ e ¹¹	Director of Joint Property Services	Cabinet Member for Finance
Fleet						
Replace end-of-life cars and vans with electric vehicles when suitable for service needs	Direct	TBD	Pending funding for cost difference of electric vehicles	110 tCO ₂ e ¹²	Head of Procurement/ Director of Joint Property Services	Cabinet Member for Finance
Expand EV charging infrastructure	Enabling	TBD	Partly funded - £400k available	--	Director of Joint Property Services	Cabinet Member for Finance
Staff travel						
Implement low carbon staff travel programme	Direct	--	Staff time	190 tCO ₂ e ¹³	Director of Joint Property Services	Cabinet Member for Finance

¹¹ Assumed release of Nash Court, Knights Court, Samuelson House and Speedwell House in either 2023/24 or 2024/25

¹² Assumed 50% of Hard FM and 75% of Highways fuel use can be electrified and 10 Fire & Rescue diesel cars to be converted to fully electric cars in 2023/24.

¹³ Assumed directorates agree to carbon reduction targets. Actions to support this reduction include continuation of a 'digital by default' approach to meetings, continued enforcement of the travel hierarchy, continued take up of the electric car benefit scheme, continued take up of electric pool cars and continued better route planning and from 2024/25 offer driver training and promote car sharing.