

London Environment Strategy: Fourth Progress Report (2018-2024)

March 2024

Achievements from June 2018 to February 2024

COPYRIGHT

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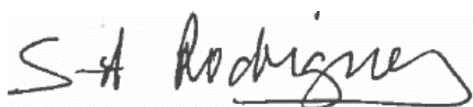
Deputy Mayor's Foreword

Nearly six years ago the Mayor of London, Sadiq Khan, made a promise to all Londoners when he published the London Environment Strategy. He promised to give Londoners the best air of any major city by 2050. He promised to make London the world's first National Park City. He promised to make London a zero carbon city by 2050. He promised to make the city resilient to climate change, tackling noise pollution, to get to a zero waste city empowered by a circular economy.

What this progress report shows is that our city is more than getting there. London is now the world's largest clean air zone of its kind. London became the world's first National Park City in 2019 and has seen a rewilding programme that has brought back beavers in Ealing, bees in Bexley and bats in Barnes. Sadiq saw the devastation from wildfires and flooding to our city in recent years and made the decision to move forward the deadline for London becoming a net zero carbon city from 2050 to 2030. With the same concerns in mind, he commissioned an independent review into London's climate resilience and the interim findings of that review can now inform us of the further changes we need to ensure London is more resilient. We have well over a thousand zero emissions buses and are the home of a third of the UK's electric charging points. Finally, only 0.1% of waste authority's waste now goes to landfill and London's 110 new drinking water fountains are helping to avoid the equivalent of more than 5.6 million half litre single-use plastic bottles.

The results are in and London is emphatically greener with half a million trees now planted by Sadiq. It's a healthier city, where children are able to breathe better air and explore wilder spaces that they get to on cleaner transport.

We can all take pride in the progress our city has made, but it's clear there is more to do. The Mayor's ambition for our city is clear that the London Environment Strategy remains the route map for reaching it. The progress we've made shows us what more is possible. So while we should and must take a moment to appreciate how far we've come to make London the greenest city in the world, and whilst there's more to do, I'd like to thank all those Londoners, boroughs, businesses and charities who've helped make this happen.



Shirley Rodrigues

Deputy Mayor, Environment and Energy

1. Introduction

The [London Environment Strategy](#) was published in May 2018. It sets out the Mayor's overall vision to protect and improve London's environment. It also sets a direction of travel for the Mayor and his partners who need to collaborate to achieve these ambitions.

The Strategy underlines the importance of the environment to the Mayor and his belief that every Londoner has the right to a quality environment, wild spaces, access to nature, and affordable energy¹.

This fourth progress report covers achievements from May 2022 to date and takes the opportunity to include key highlights from the London Environment Strategy publication in 2018 to February 2024.

London Environment Strategy background

For the first time in 2018, the strategy brought together approaches to all aspects of London's environment into one document, taking action that will improve the city's environment right away, and setting London on the path to creating a better future. Key areas of focus include:

¹ The Mayor also published an [Implementation Plan](#), which set out those actions that the Mayor has prioritised to take forward directly between 2018 and 2023 to help implement the policies and proposals in the strategy. The ['one year on' report](#) summarised the actions taken by the Mayor against the policies and proposals in the strategy, covering the period from the beginning of the Mayor's term (May 2016) to October 2019.

The ['second progress report'](#) covered the period from May 2016 to May 2021, with particular focus on achievements since the first progress report. That report covered the period of the COVID-19 pandemic which highlighted how the environment can have a disproportionate impact on Londoners, with those living in deprived areas most likely to experience poor air quality, cold, damp homes and limited access to green space. To address these challenges, the Mayor and the London Recovery Board, developed the [Green New Deal mission](#) to tackle the climate and ecological emergencies and improve air quality by doubling the size of London's green economy by 2030.

The ['third progress report'](#) summarises key actions taken by the Mayor against the policies and proposals in the strategy and Green New Deal during the first year of the second Mayoral term, covering achievements from May 2021 to May 2022

- **Climate Change and Energy:** To help tackle the climate emergency, London will be a zero-carbon city, with energy efficient buildings, clean transport and clean energy.
- **Air Quality:** The Mayor aims for the capital to have the best air quality of any major world city, going beyond the legal requirements to protect human health and minimise inequalities.
- **Green Infrastructure:** To ensure that London's green spaces meet their full potential for improving people's lives, the Mayor aims for London to be greener in the future than it is today and to increase tree canopy cover by ten per cent by 2050.
- **Waste:** The Mayor aims to make London a zero-waste city, helping conserve resources and reducing the city's impact on the local and global environment. By 2026 no biodegradable or recyclable waste will be sent to landfill and, by 2030, 65 per cent of London's municipal waste will be recycled.
- **Adapting to climate change:** London and Londoners will be resilient to severe weather and longer-term climate change impacts. This will include flooding, heat risk and drought.
- **Noise:** Londoners' quality of life will be improved by reducing the number of people adversely affected by noise and promoting more quiet and tranquil spaces.
- And for the first time the strategy also included policies and programmes on the **transition to a green economy** and how the GLA and other stakeholders could help to **lead by example** to achieve net zero.

About this report

This progress report contains updates on the London Environment Strategy. As the Mayor has limited direct powers over most environmental policy areas, the actions in this report also rely on efforts from partners, stakeholders and Government to deliver the objectives set in the strategy.

The GLA has also published a set of high-level environment measures to track how London's biggest environmental issues are changing over time. Find out more on the London Datastore [by clicking here](#).

2. Air Quality

The World Health Organization (WHO) states that the burden of disease attributable to air pollution is now estimated to be on a par with other major global health risks, such as unhealthy diet and tobacco smoking, and air pollution is now recognized as the single biggest environmental threat to human health². In 2016, two million Londoners, including 400,000 children, lived in areas that exceeded legal limits of air pollution³, with thousands of Londoners dying prematurely because of exposure to air pollution every year⁴.

Since 2016, when the current Mayor was elected, there have been dramatic improvements in London's air quality, especially for nitrogen dioxide (NO₂). In 2019 (the latest available data from the London Atmospheric Emissions Inventory), there were 114 hours exceeding the legal NO₂ hourly limits, a 97 per cent reduction on 2016. However, the majority of the city is still exceeding the WHO air quality guidelines for NO₂, particulate matter (PM₁₀) and fine particulate matter (PM_{2.5})².

The Mayor maintains his commitment to achieve legal air quality standards as soon as possible, as well as meeting WHO health-based guidelines by delivering ambitious action to rapidly reduce emissions of key pollutants in the city, as well as by empowering Londoners to reduce their own exposure to poor air quality.

Ultra Low Emission Zone (ULEZ)

Successive emissions-based charging schemes have been implemented in London, aimed at reducing the health impacts associated with high pollution levels. The Mayor introduced the world's first 24-hour ULEZ in central London in April 2019. This was then expanded in October 2021 to cover inner London, an area 18 times its original size, covering land within the North and South Circular Roads and the four million residents within.

On 29 August 2023, the Mayor further expanded the ULEZ to cover all London boroughs. The London-wide zone measures 1,500 km² and covers nine million people, making it the largest zone of its kind in the world. As of September 2023, 95 per cent of vehicles seen

² WHO (2021). Global air quality guidelines: particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. Available at: [WHO global air quality guidelines: particulate matter \(PM_{2.5} and PM₁₀\), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide](#)

³ GLA and TfL (2023) London Atmospheric Emissions Inventory 2019 (LAEI 2019). Available at: [London Atmospheric Emissions Inventory \(LAEI\) 2019 - London Datastore](#)

⁴ Imperial College London (2021) London Health Burden of Current Air Pollution and Future Health Benefits of Mayoral Air Quality Policies. Available at: [Health burden of air pollution in London | London City Hall](#)

driving in London met the emission standards, up from 39 per cent in 2017. On an average day there were 77,000 fewer non-compliant vehicles and 48,000 fewer vehicles overall seen driving in London compared to June 2023 (before the ULEZ expanded London-wide).

The Mayor supported Londoners by providing a total of £271 million of GLA funding for a number of scrappage and retrofit schemes. These schemes have supported Londoners, particularly those impacted by the soaring cost of living crisis, transition to cleaner vehicles and greener forms of transport. The Government has provided scrappage funding for other cities, including Birmingham, Bristol and Portsmouth, but has not extended the same support for London.

The GLA has published a series of monitoring reports for these schemes. The Inner London ULEZ One Year Report⁵ analysed the impact of the ULEZ and the tighter emissions standards for the LEZ. The analysis showed that between 2019 and 2022, emissions of NO_x, PM_{2.5} and CO₂ had reduced. This has led to roadside NO₂ concentrations being 46 per cent lower in central London and 21 per cent lower in inner London than they would have been without the ULEZ and its 2021 expansion. Carbon emissions from vehicles have also reduced. Cumulatively since 2019 it is estimated the ULEZ has led to a reduction of around 800,000 tonnes of CO₂ emissions from vehicles across London over the four-year period compared to without the ULEZ, a saving of three per cent. Within the ULEZ area this is a saving of 290,000 tonnes, a reduction of 4 per cent over the same period.

Improvements to London's fleets

The Mayor and TfL have continued to accelerate improvements in London's fleets. Big strides in emissions reductions have been achieved since January 2021, when TfL upgraded the entire bus fleet to meet the ULEZ standards (alongside delivering 12 Low Emission Bus Zones between 2017 and 2019). This was achieved by replacing old buses with new ones and retrofitting mid-life buses to meet the Euro VI emissions standards, helping to reduce NO_x and PM across the capital.

In August 2023, TfL reached the milestone of 1,000 electric buses in the fleet, increasing to over 1,300 in January 2024. London has the largest zero-emission⁶ bus fleet in western Europe with more than one in seven now zero-emission at the tailpipe⁷.

⁵ GLA (2022) Inner London Ultra Low Emission Zone Expansion One Year Report. Available at: <https://www.london.gov.uk/programmes-strategies/environment-and-climate-change/environment-and-climate-change-publications/inner-london-ultra-low-emission-zone-expansion-one-year-report>

⁶ When classifying as "zero-emission" this refers to zero-emission at the tailpipe

⁷ C40 Cities (2023) London powers ahead with zero-emission buses. Available at: <https://www.c40.org/case-studies/london-powers-ahead-with-zero-emission-buses/>

The Mayor also aims to establish London's taxi fleet as the greenest in the world, with TfL introducing strict licensing requirements to help enact this step change. As of December 2023, 54 per cent of the almost 15,000 black taxis on London's roads were zero-emission capable (ZEC). This progress is significant given that taxis were responsible for 29 per cent of the NO_x emissions from central London road transport in 2019. London's iconic and historic taxi trade is now leading the way in the early adoption of ZEC technology.

The Mayor and TfL have taken the same approach with private hire vehicles (PHVs). Since 2018, emissions-based licensing requirements have been introduced. The latest requirement, since January 2023, means all first-time licensed PHVs need to be ZEC and meet Euro 6 emissions standards. As of December 2023, over a third (35.8 per cent) of the PHV fleet were ZEC, while less than a third were solely fuelled by petrol or diesel.

Electric Vehicle (EV) Charging Infrastructure

The Mayor has overseen a dramatic increase in the provision of public charging infrastructure to support London's switch to zero-emission vehicles. In 2018, the Mayor established the world's first Electric Vehicle Infrastructure Taskforce, bringing together key representatives to unlock barriers to expanding charging infrastructure. In 2019, the taskforce published a Delivery Plan with recommendations on increasing London's EV infrastructure up until 2025.

In December 2021, London's Electric Vehicle Infrastructure Strategy was published by TfL, setting out how the public sector could support the delivery of infrastructure and remove barriers for private sector delivery. Current forecasts show that London will need between 40,000 and 60,000 public charge points by 2030, of which up to 4,000 will need to be rapid charge points. The key commitment in the strategy is to unlock GLA land for EV charging.

As of January 2024, London had around 18,600 public charge points, over one third of the UK's total⁸ and the highest number of charge points for any geographical area in the UK. This is a threefold increase from October 2019, the earliest point at which reliable public numbers are available. Of these charge points, over 1,000 are rapid or ultra rapid. TfL has supported the delivery of over 300 of these, including through three rapid charging hubs in Stratford, Woolwich and the City. To build on this, TfL continues to work to deliver rapid and ultra rapid charging. In 2023 they awarded contracts to operator Zest for at least 100 rapid EV charging bays, with installation of these starting in early 2024. Places for London, TfL's commercial property arm, is also looking to deliver ultra-rapid charging hubs on TfL land, starting with 5 initial sites with the potential to deliver up to 50 by the end of the

⁸ ZapMap (2023) EV charging statistics 2023. Available at: <https://www.zap-map.com/ev-stats/how-many-charging-points>

project. Each site will have a minimum of 6 ultra rapid charging bays, capable of delivering 150kW charge, as well as an accessible bay. Work continues to identify future locations for public EV charging.

Mayor's Air Quality Fund

The Mayor's Air Quality Fund (MAQF) is a £27 million fund to support projects by London boroughs to improve air quality. The MAQF helps boroughs trial local measures to cut pollution and exposure and encourages shared learning.

Round 2 of the Fund helped cut pollution by introducing 25 new clean air routes in some of London's busiest and most polluted neighbourhoods, reducing pedestrian exposure to pollution by up to 60 per cent between 2016-2019. With the Mayor and TfL's support, boroughs in rounds 1-3 have:

- installed and upgraded over 400 electric vehicle chargers
- supported 5,300 businesses to reduce their emissions
- created over 3,000 square meters of new green spaces
- planted more than 250 trees
- installed over 1,300 cycle parking spaces
- repaired more than 750 bikes
- provided 17,000 school pupils with resources and materials on improving air quality

Round 4 of the MAQF, commencing April 2024, will offer £5.3 million to help boroughs reduce harmful PM_{2.5} emissions, deliver projects to protect vulnerable Londoners from pollution exposure in locations such as schools, and improve indoor air quality.

The London Plan

The latest [London Plan](#) introduces significant new protections for local and regional air quality. The Plan puts a focus on PM_{2.5} as one of the key pollutants in the city. In February 2023, world-leading Air Quality Neutral and Air Quality Positive guidelines were published.

The Air Quality Neutral guidance expects all new developments in London to not contribute to air pollution beyond specified limits. These benchmarks make it harder to use the most polluting fuels, meaning new and refurbished properties in London will be unable to use wood or other solid fuels for heating.

The Air Quality Positive guidance is a ground-breaking new approach that requires developers of large-scale developments to consider their impact on air quality from the earliest design stages. This means developers and their architects, planners and air quality experts must consider air quality from the beginning, in addition to demonstrating what measures or design features will be put in place to reduce exposure to pollution.

Breathe London

Critical to tackling air pollution in London is a comprehensive understanding of air quality by enhancing our monitoring and modelling capabilities. This has been achieved through the Breathe London network, launched as a pilot by the Mayor in January 2019; the world's most advanced and comprehensive network of air quality monitors at that time.

After a successful first pilot phase, the Mayor committed to further funding for four years from January 2021 and launched a new delivery partnership with Imperial College London and Bloomberg Philanthropies to focus on providing data to community groups. Breathe London started with 136 sensors deployed at priority locations such as schools, hospitals, residential communities and reference sites. The programme now comprises over 400 monitoring sites across London.

Wood Burning

The Mayor is supporting the Defra-backed London Wood Burning Project which aims to improve awareness around the impacts of domestic burning and advice for how residents can burn less and burn better. He is also supporting Global Action Plan's 'Clean Air Night' campaign.

There is still a long way to go in tackling pollution from domestic wood burning, however. The Mayor and local authorities still don't have the powers they need to tackle effective action against wood burning in London. He has and will continue to lobby for further powers and resource to tackle this key issue.

Air Quality Alerts

Access to air quality alerts and forecasts can be incredibly useful for Londoners, particularly individuals who suffer from certain health conditions who can make decisions based on alerts which can help protect their health.

The Mayor has continued to promote [AirText](#), as well as the Mayoral alert system which provides air quality alerts at bus stops, Tube stations and road-sides across the capital to notify Londoners during the worst incidents of air pollution.

Schools and Nurseries

To tackle the impact of poor air quality on children, the Mayor launched the School Air Quality Audit Programme. This audited 50 primary schools and later 20 nurseries, reviewing ways to lower emissions and reduce children's exposure. Under this £250,000-programme, 50 primary schools received detailed air quality audits carried out by an experienced transport and environment consultancy, WSP. The audits reviewed ways to lower emissions and reduce exposure of London's primary school children to harmful pollution, including on their journeys to and from school.

The Mayor has made support available through the Mayor's Air Quality Fund and Greener City Fund for schools and boroughs to take forwards the recommendations of these audits.

Indoor Air Quality

Indoor air quality remains a key but under addressed issue. Londoners spend around 90% of their time indoors where they can be exposed to numerous sources of pollution.

While the Mayor and local authorities continue to have few powers to address air quality in buildings, he is doing what he can to reduce the impact that poor indoor air can have on health.

Building on the school and nursery audit project, The Mayor recently announced that £2.7m of funding would be put towards improving air quality in 200 schools, including the installation of indoor air quality filters, as well as school engagement, educational materials, monitoring the impact of the programme and maintenance of the filters. Filters will start being delivered by the end of 2024. This pilot project, if successful, could then be expanded to cover every school in London.

3. Green Infrastructure

Protecting, restoring, and increasing London's green infrastructure, and the wildlife it supports, is central to the Mayor's commitment to ensure that more than half of London is green, to make London greener by 2050 than it is today, and to improve Londoners' access especially those who have least access to green space or who have historically been excluded from this area.

A greener London is a healthier London, with benefits for both physical and mental wellbeing. Making London greener is also essential to limit the devastating impacts of climate change: our green infrastructure - including trees, parks and green streets - help to make the city cooler and manage flood risk. London was confirmed as the world's first National Park city in 2019, in recognition of the ambitious policies, programmes and actions the Mayor has taken forward to make London even greener, healthier and wilder.

The Mayor has continued his mission of enhancing and expanding green spaces, including across London with his 2021 London Plan whilst safeguarding the Green Belt and green areas from development. The Mayor has also funded greening and rewilding projects across London, targeted at areas of the city where they are most needed.

Green Infrastructure Projects

Since 2016, the Mayor has made more than £30m available for green space and tree planting projects improving and/or creating some 1,035 hectares of green space between 2017/18 and end of 2023.

- enabling 500 hectares of green space improvements in his first term and more than 400 hectares in his second term, equivalent to over 2,000 football pitches in total.
- the creation or restoration of over 366 hectares of habitat for London's wildlife - the equivalent of almost 15 St James' Parks;
- restoring over 26 kilometres of rivers since 2016, investing £1.4 million to clean up the water and improve habitat for wildlife with meadows, wetlands and reedbeds;
- funding more than 315 projects led by community groups to make their local areas greener and wilder, with green space like allotments, parks and community gardens.

These projects have included:

- creation of a swimming lake in Beckenham Place Park, providing an important new habitat for wildlife and a leisure resource for park visitors as part of a comprehensive park restoration scheme
- transformation of Albany Park in Enfield by naturalising the Turkey Brook, bringing the river into the park, creating new wildlife habitat, a diverse landscape for park users to enjoy and reducing flood risk to over 200 properties

- connecting 18 hectares of underused and disconnected green space between Greenford Town Centre and Gurnell Leisure Centre in Ealing, with new footpaths, improved wayfinding and biodiversity.

They have also improved biodiversity in London, including releasing a family of 5 beavers into Paradise Fields in Ealing – the first in west London for 400 years, alongside Citizen Zoo, London Wildlife Trust and other partners.

Tree Planting

Trees are essential to delivering the Mayor’s vision of a greener London. Since 2016, he has funded the planting of more than 500,000 trees across the city, significantly more than the previous Mayor achieved over two terms. In the 2022-23 planting season, almost 47,700 trees were planted, and we expect to reach a further 70,000 planted in the current 2023-24 planting season. Table 1 below shows the type of tree planting projects funded.

Table 1: Number of Trees funded by the Mayor of London by borough and type of planting 2016-2023

	Community spaces	Free Trees	Street Trees	Woodland	Mixed and other	Total GLA funded 2016-2023
Total GLA funded	16,049	155,399	21,812	124,000	158,743	476,003

Note: figures do not include more than 70,000 trees being planted in the current 2023-24 planting season which takes the total to over 500,000.

Our tree planting programmes support a ‘right tree, right place’ approach, to help ensure new tree planting is both impactful and sustainable. Data, such as the [Climate Risk mapping, developed by the GLA and Bloomberg Associates](#), and our [canopy cover prioritisation tool](#) are helping us target planting in communities at highest risk of the impacts of climate change.

Projects supported include:

- Two major woodland creation projects in Hainault and Enfield, creating an additional 85 hectares of publicly accessible green space in the Green Belt.
- Mayoral funding to coordinate and match fund two rounds of the Forestry Commissions Urban Tree Challenge Fund for Street Trees. This enabled London boroughs to access more than £4m to plant almost 12,600 street trees.
- Over 150,000 free trees to enable community and faith groups, housing associations and schools to enhance their local areas.

- The Mayor was able to secure nearly £500,000 from Defra's Trees Call to Action Fund (TCAF) to support the delivery of the London Urban Forest Plan over 3 years. Since the project commenced in 2022, nearly 26,000 trees have been planted, over 1,000 children and young people have been involved in community events, and 14 training workshops have been delivered.
- To increase tree canopy cover in London and in response to the extreme heat event in the summer of 2022, the Mayor announced Trees for London, a funding package of £3.1m focused on tree planting for shade, on streets, and in playgrounds and green spaces – especially in areas with low canopy cover and high levels of deprivation. So far it has delivered 95,000 trees supporting boroughs to plant more street trees, free trees for Londoners, and exemplar planting projects including two town centre grey-to-green projects and an extension to the Enfield Chase woodland.

To support collaboration to protect, manage and enhance the capital's trees and woodlands the Mayor works with the Forestry Commission to co-ordinate London Urban Forest Partnership (LUFPP), a network of stakeholders working towards increasing tree canopy cover. The LUFPP published a Plan setting out goals and actions in 2020 and meets regularly to drive forward action. This collaboration has helped secure additional funding and resource for tree planting across London.

Currently 21 per cent of London is under tree canopy cover, with an aim to increase by 10 per cent (up to 23.1 per cent) by 2050. Further updates on our progress towards this target will be provided later this year, noting even a five-year interval may not detect change based on variables such as, age of the tree when planted, time of year imagery is collected, type of tree, impact of drought or dry weather, and maintenance.

Rewilding Taskforce

In December 2021, the Mayor announced the establishment of the London Rewilding Taskforce to explore potential opportunities for rewilding in London.

Three main recommendations from the Taskforce were:

1. Enable development of large-scale rewilding projects in London to support nature recovery and greater resilience of biodiversity, identifying 11 opportunity zones for sites over 100 hectares;
2. Create a network of stepping-stone projects to support London's nature network and create connections between large-scale rewilding sites; and
3. Promote opportunities for Londoners to engage with rewilding and the capital's nature to the benefit of people and wildlife.

Since then, the GLA has established an Action Group to support the development of a large-scale rewilding pilot from the 11 zones the taskforce identified. The GLA has also opened a third round of the Rewild London Fund, and launched a communications campaign to help Londoners engage more with wildlife and green spaces.

The first two rounds of the Rewild London Fund have awarded over £1.4 million to projects with an additional £710,000 allocated for a third round of projects yet to be announced. Projects supported by the Fund have helped to create or restore around 350 ha of wildlife habitat - the equivalent of nearly 310 football pitches - bringing nature back into the city for all to enjoy. The fund is increasing biodiversity and creating more habitats for wildlife and plants to thrive in, making the city more resilient to the impacts of climate change.

Urban Greening Factor

The Urban Greening Factor (UGF) has been a key policy implemented in London under the environment strategy, supporting high quality greening through the 2021 London Plan.

It requires all new major developments to make greening a fundamental element of site and building design. It also requires Boroughs to develop UGF scores and sets target scores for different development types make an appropriate contribution to the greening of London, improving both climate resilience and biodiversity.

It has now been formally in place for a couple of years, and feedback indicates that it is already having a positive effect. Meeting UGF targets in most cases also delivers a biodiversity net gain⁹ of at least 10 per cent, and in some cases substantially more, well ahead of the new Government rules on biodiversity net gain introduced in February 2024.

Mapping and data

Since the publication of the LES, [several maps and tools](#) have been developed and published to help organisations and individuals in London understand, explore and improve London's green infrastructure. The maps provide baselines that will allow the monitoring of progress against LES targets and data that provide context for decisions about protecting, improving or creating green infrastructure. The Mayor has used canopy cover data to prioritise areas for new tree planting for example, and tools such as the *10-Minute Walk Map*, and *GI Focus Map* to help prioritise applications to grant funds such as *Grow Back Greener*, and the *Green and Resilient Spaces Fund*.

The Greater London Authority carries out research to assess the amount of green and tree canopy cover in London, working with partners to create data tools and support better data stewardship. Tree canopy cover and green cover maps were first published in 2018

⁹ Biodiversity net gain is an approach to development and/or land management that aims to leave the natural environment in a measurably better state than it was beforehand. It has become a national requirement for certain new developments as of February 2024.

indicating and are in the process of being updated to assess change over time. 2018 data indicated green cover between 48-51%, with new figures due to be published in May 2024.

4. Climate Change Mitigation and Energy

The Mayor has demonstrated leadership by setting an ambitious target for the city – net zero by 2030 – and becoming the Chair of C40 Cities. London was the first global city to declare a climate emergency, producing a 1.5C aligned Climate action plan and have now brought forward London's net zero target from 2050 to 2030. London has maintained its 'grade A' status since the Mayor declared a climate emergency in 2018 for climate action by CDP cities, placing it as one of the leaders globally. The GLA scored the joint highest score for climate action across all English local authorities.

Focused on decarbonising homes and workplaces while safeguarding the most vulnerable, the Mayor's initiatives also champion clean and smart energy systems. These programmes aim not only to reduce energy demand and carbon emissions, but also to alleviate the impact of soaring energy costs on London's residents and businesses.

As we strive for a greener and more sustainable future, the Mayor remains committed to supporting London's journey toward a cleaner, greener future by delivering the following achievements:

Net Zero 2030 and Pathway

- London continues to drive down its carbon emissions and are reducing faster than the rest of the UK. In 2021, London's CO₂e emissions were 28.7 million tonnes. Emissions are 37 per cent lower than 1990 levels and are 44 per cent below the peak of emissions in 2000. Despite a 29 per cent increase in population since 1990 and significant economic growth over that period, London's per capita emissions have reduced by 51 per cent, from 6.7 tCO₂e in 1990 to 3.3 tCO₂e in 2021. Compared to the rest of the UK, London has the lowest per capita emissions of any region.
- However, there is increasing urgency to act and do more to avoid catastrophic impacts from climate change, which is why, in 2020, the Mayor brought forward his net zero target from 2050 to 2030. The Mayor has published analysis setting out four potential pathways to net zero by 2030 and adopted an 'accelerated green pathway' as his preferred approach which outlines examples of potential policies and measures that he should consider in achieving a net zero carbon London by 2030.

London Plan

- The Mayor has placed net zero at the centre of his approach to the London Plan, which requires all strategic developments in London to be net zero carbon. Where this cannot be achieved on-site, developers must pay a contribution into a local

authority offset fund for the remaining carbon emissions; over £145 million is currently available to the London boroughs to support decarbonisation through this policy, as of 2021 reporting.

- In 2022, [London Plan climate policies](#) led to proposed emissions reductions from strategic developments being over 50 per cent greater than national building regulations equating to a saving of over 59,000 tonnes of carbon dioxide (CO₂). As well as 96 per cent of referable developments including solar PV (116,000 m² of solar panels), the policies ensured 31,000 new homes and 3.69 million m² of non-residential floor space will be supplied via heat pump-led heating systems. London Plan policies also apply to new social housing development in the city, to help ensure that the energy efficiency standards of these buildings are amongst the highest in the UK.
- London is also the first city in the UK to require whole lifecycle carbon assessments for all new building developments, which requires developers to consider the embodied carbon in their development as well as operational ensuring a development's total carbon impact is accounted for.

Future Neighbourhoods 2030

- The Future Neighbourhoods 2030 programme, a £7.7 million initiative, supports local communities to develop and lead projects that tackle the environmental and social issues that are important to them in their neighbourhoods. There are 12 Future Neighbourhoods, all located in some of London's most disadvantaged and climate vulnerable areas, or where residents were most impacted by the pandemic. Ten projects received funding to help support the development of visionary strategies and plans to reach net zero by 2030.
- Two projects have been supported to implement the strategies delivering projects across the programme's core themes of retrofitting homes and public buildings, decarbonised energy systems including the extension of heat networks, improvements to air quality, climate-adapted, resilient and green neighbourhoods with new publicly accessible green space, and zero-waste & circular economy with tonnes of surplus food per month being redistributed. For example, one project in Notting Dale Future Neighbourhood (Kensington & Chelsea) is installing heating efficiency measures at local schools, delivering a Youth Training Programme for 16-19 year olds to gain qualifications in green skills and supporting active travel. In Somers Town Future Neighbourhood (Camden) a project to decant and repurpose the plants and infrastructure of the extensive Story Garden after the area is developed will create a mosaic of urban, biodiverse green spaces for the local community.

Business Climate Challenge

- 95% of London's economy are made up of SMEs. The Mayor's Business Climate Challenge (BCC) has supported 225 businesses since 2021 to tackle their energy use emissions and contribute towards London's net-zero target, with the primary

aim of reducing energy emissions from commercial workplaces by 10 per cent in one year.

- By September 2023, supported businesses already achieved average savings of four per cent and median savings of nine per cent compared to January-September of 2022. Overall, BCC businesses have reduced their average and median energy use by approximately 3% through September 2023. This equates to an average cost savings of almost £1,300 and carbon savings of 2 tCO_{2e} in nine months. Over one year across all BCC workplaces, these average savings rates would result in a cumulative cost savings of almost £400,000; 638 tCO_{2e} carbon emissions avoided, and nearly 3.3 million kwh saved.

Divesting pension funds from fossil fuels

- The Mayor committed to work with the London Pensions Fund Authority to divest pensions from their investments in extractive fossil fuels. At the start of the Mayor's first administration, the LPFA held direct investments of £43.6 million in extractive fossil fuels. By January 2022, the LPFA confirmed that they had removed all listed extractive fossil fuel companies from their equity portfolio, meaning they were now 100% divested. This included divesting from Exxon Mobil, Shell, BP, Coal India and others. London now leads the C40 Divest / Invest network, encouraging cities to make similar commitments to remove city investments in fossil fuels, and increase investments in climate solutions.

Warmer Homes Programme

- To help deliver a net zero London whilst tackling London's shocking numbers of fuel poor homes, the Mayor's Warmer Homes programme has been running since 2018. Since 2018, a total of 5,112 homes have been upgraded with investments of up to £25,000 to improve heating, insulation and ventilation.

Energy Accelerators

- The Mayor's Energy Accelerators for Homes, Workplaces and Local Energy Accelerators are turning buildings into eco-friendly spaces by promoting retrofitting and renewable energy adoption. They help public bodies develop business cases for net zero projects and help to unlock additional financing.
- The Mayor's Energy Accelerator initiatives have led to the installation of 13 MW of renewable energy capacity, projected to increase to 19.6 MW in 2024.
 - Launched in November 2020, the GLA's £6 million Local Energy Accelerator Programme has offered funding and expertise to public sector entities, schools, and social housing providers, facilitating the development of their clean energy projects. Supported projects are on track to save approximately 7,538 tonnes of CO_{2e} per year by 2024. With £6 million allocated to 31 projects since 2020, anticipated savings are expected to reach 15,417 tonnes by 2024 and 28,800 tonnes by 2025.

- The Retrofit Accelerator – Homes (RA-H) aimed to help build a technically and financially viable approach to “whole house” retrofit in the social housing sector as opposed to light-touch measures like light bulbs or draught-excluders). Through working with the supply chain and housing providers it has supported the development of some innovative approaches to decarbonising homes which act as proof of concept for scaling up delivery and the supply chain. The programme gave social housing providers technical advice and support to help them retrofit 130 homes in London, due for completion this year. Works have supported 200 jobs, across 9 retrofit projects in London.
- Since 2016, 770 public sector buildings have been supported through the Mayor’s Retrofit Accelerator – Workplaces programme (formally RE:FIT London), saving over 38,000 tonnes of carbon and 178 MWh of energy each year. The programme offers schools, universities, hospitals and local authorities fully funded support to enable them to retrofit their building, improving energy efficiency, lowering carbon emissions, and saving money on public sector bills. For example the programme supported Epsom and St Helier University Hospital Trusts in procuring and installing a variety of energy reduction measures, including LED lighting retrofit and pipework insulation, Building Management System optimisation, and external building fabric upgrade. The Energy Performance Contract provides guaranteed energy savings of around £1m annually and 5,000 tCO₂ (around 30% of total carbon emissions).
- The Retrofit Accelerator-Workplaces programme has also supported public sector organisations to gain an additional £250m funding from Government through phases of the Public Sector Decarbonisation Scheme.
- The £6m Local Energy Accelerator Programme (launched in November 2020), continues transforming the way London generates, supplies, integrates and uses clean local energy in buildings and transport. This programme was part-funded by ERDF until the end of September 2023. However, LEA has been extended until end March 2024 with £3m of the Mayor’s funding only.
 - The scheme provides funding for public sector, educational establishments and social housing providers to utilise expertise from consultancies, as well as additional capacity and capability via a Programme Delivery Unit to develop their clean local energy projects.
 - To date about 7,538 tonnes CO₂e per year (using ERDF methodology of 2017 carbon factors) is estimated to be saved in 2024 (from supported projects which were installed and operating by end July 2023).
 - About £3.68m was committed to 31 projects since 2020 (and 44 projects via the predecessor programme DEEP), which once installed

should save about 15,417 tonnes CO₂e in calendar year 2024, rising to over 28,800 tonnes CO₂e by 2025.

- To date about 13 MW of renewable energy capacity has been installed, increasing to about 19.6 MW in 2024 and 48 MW by 2025.
- The London Plan has continued to support heat networks and reduce gas-based heating solutions and in the latest Energy Monitoring Report for 2022 there are over 46,000 new dwellings (96 per cent of all new dwellings in planning applications that are referred to the Mayor) are expected to connect to either communal heat networks or area-wide district heat networks (DHN). This includes over 8,500 expected to connect to existing DHNs, and over 80% of remaining developments to connect to communal networks, future-proofed for connection to local DHNs once available. This supports London's progress towards the estimated 460,000 new heat network connections needed for the Mayor's 'Accelerated Green' Pathway to net zero by 2030. London Plan policy prioritises DHNs connection to promote an affordable and flexible low carbon energy system that's needed to help London reach net zero.

Energy Advice Services

- The Warmer Homes Advice Service has helped over 24,000 vulnerable and low-income households with small energy measures and energy bill saving advice since 2018. Working with Londoners who are most in need of support and advice, home visits can be arranged to support on individual circumstances and identify areas of support.
- Launched in November 2022, Energy Advice London has helped over 14,000 Londoners. This online and telephone advice service was the first London-wide service to help all Londoners for a decade. Run by Energy Saving Trust and supported by Mayor of London, free and impartial advice is available to help all Londoners manage their bills and make their homes more energy efficient, tackling the fuel poverty crisis.
- The Mayor's Warmer Homes programme has upgraded over 5,100 homes since 2018 with improvements to heating, insulation and ventilation.

London Power

- Launched in January 2020, London Power, the GLA's first commercial venture, provides Londoners with affordable green energy. London Power had built up to 6,300 customers by Autumn 2021, despite marketing activity being paused during the pandemic. Since then, its customer base has remained broadly steady, reflecting the changes in the energy market due to reduced switching levels, and the high quality of customer service provided by London Power.

- Each London Power customer has saved 940 kg of CO₂ annually on average - equivalent to planting 470 trees. Cumulatively, London Power has contributed to a significant 15,500 tonnes of CO₂ savings, akin to removing 9,400 cars from the road for a year.
- Beyond environmental benefits, London Power customers enjoyed energy bill savings prior to the energy crisis, contributing to a collective £2.5 million in savings for customers who switched from their previous energy providers.

Solar Together London

- Solar Together London is a group buying scheme, which has helped thousands of Londoners take-up solar PV at a discounted rate. It has supported the installation of more than 24,000 solar panels across over 3,200 London homes since 2018. Householders have been able to get 20-30 per cent reductions on the cost of measures and the programme has leveraged in around £20m of private investment. While successful overall, the programme has been affected by the insolvency of one installation company; the GLA has worked closely with its delivery partner to resolve issues for the individual customers affected.
- This programme was complemented by the Mayor's Solar Skills London programme. This offered support to people and organisations at all stages of their involvement in the solar installation sector. This included the development of a solar careers hub and bootcamp sessions for people at the start of their career, through to apprenticeship placements and training grants for businesses looking to increase their skills. 26 trainees joined onto the introductory workshops, with 11 joining the bootcamp.
- In line with the Mayor's Solar Action Plan, [a report was published and disseminated](#) to boroughs and other key stakeholders to ensure planning policies do not unnecessarily restrict solar installation on existing properties across London especially for rooftop solar in conservation areas.

Community Energy

- The Mayor's London Community Energy fund has made over 168 grant offers through six rounds of funding since 2017 totalling over £2.1million of grants. Buildings to have benefitted so far include schools, community centres, GP surgeries, churches, and sports centres. The majority of enabled solar PV installations, alongside energy efficiency retrofit and renewable heating. To date the fund has supported the installation of over 2.6 MW of community owned solar PV, the equivalent of covering the Wembley Stadium pitch, twice.
- Up to another 30 grant offers will be offered through LCEF phase 7, where projects will be delivered throughout 2024 working closely with Community Energy London.

5. Waste

The Mayor wants London to become a zero-waste city and believes that eliminating waste and driving up recycling is a key part in developing a just and green transition to a low carbon, circular economy.

Through ReLondon, a statutory partnership with London Councils the Mayor works with the London boroughs, businesses and authorities to achieve his goal of no biodegradable or recyclable waste sent to landfill by 2026 and for there to be recycling of 65 per cent of all municipal waste by 2030.

London now sends only 0.1 per cent of its total Local Authority Collected Waste to landfill (2022/23)¹⁰, compared to England's average of 8.1 per cent^[66]. This is down from 72 per cent in 2000/01 and from 12.5 per cent since 2016/17 when the Mayor was elected.

London's household waste recycling rate was 32.7 per cent in 2022/23. Between 2021/22 and 2022/23 London was the only region in England not to see a drop in its recycling rate. However, national and regional recycling levels have stagnated which is also compounded by the fact that urban areas like London include a high proportion of flats, up to 80 per cent in some London boroughs, and a transient and diverse population, with over 100 languages spoken in London, making communications and maintaining awareness of recycling services challenging.

London is unique in England and the UK, with having 33 collection authorities with different collection methods and some authorities are tied into inflexible contractual arrangements which delay the introduction of new services until expiry. Compared to other cities London's dry recycling rate is comparable with the biggest difference being having less garden waste to contribute to the recycling rate.

The Mayor has and continues to support cutting waste and building a green circular economy with the following key achievements:

Waste and Recycling:

- The Mayor required boroughs to draft Reduction and Recycling Plans (RRPs) (covering 2018 to March 2023, and April 2023 to the end of March 2025 respectively). Through these plans, boroughs are required to set out how they are working to deliver the Mayor's London Environment Strategy commitments and deliver effective action to; move waste up the waste hierarchy, boost recycling, minimise the environmental impact of their waste operations and adopt circular

¹⁰ In 2022/23 London sent 5,000 tonnes of waste to Landfill, representing just 0.1 per cent of London's total waste

practices in their local communities. The 2023 to 2025 RRP's collectively include over 850 actions and commitments from boroughs.

- As of October 2023, all 33 boroughs now meet the minimum service level for dry recycling, as set out in the LES, by collecting the six main dry recyclable materials (glass, cans, paper, card, plastic bottles and mixed rigid plastics), up from 28 boroughs in 2016. 28 boroughs now provide weekly food waste collections or trials to kerbside properties, up from 23 in 2016, with three of these boroughs having introduced food waste trials as part of plans to roll-out full food waste collections borough-wide.
- The London Plan now includes a pioneering Circular Economy Statement policy in March 2022, whereby all referable developments are required to demonstrate how they will incorporate circular principles by reusing demolition materials, utilising at least 20 per cent recycled materials and incorporating circular design to allow for flexible use and refurbishment. Over 310 Circular Economy Statements have already been submitted to the GLA up to the end of the 2022 calendar year.

Food waste:

- The Mayor supported the Food Connect project, working with the environmental charity Hubbub to redistribute surplus food to those who need it most and avoiding unnecessary waste. The project is linking the local community fridge network with businesses to streamline and increase food redistribution in Southwark and Lambeth. The project created eight new green jobs and prevented over 200 tonnes of edible food from being wasted and saved 18 tonnes of carbon emissions by using electric vehicles for collections.
- The Mayor provided over £2 million in funding to the Felix Project during the Covid-19 pandemic to support Londoners suffering from food insecurity. This resulted in 7 million meals being provided to vulnerable Londoners; 13,594 tonnes of food being diverted; and 34,000 tonnes of CO₂e saved per year.
- In response to the ongoing impact of the cost-of-living on levels of food insecurity, the Mayor launched the Free Holiday Meals programme in April 2023. The programme provides £3.1m to deliver nutritious pre-prepared, recipe-based meals. More than 7.9m meal equivalents were delivered during 2023-24, surpassing their target of 6.9m holiday meals.
- The Deputy Mayor for Environment and Energy convened businesses from across the food supply chain in September 2023, to discuss ways of partnering with the Mayor and cross sector collaboration to reduce food waste and food related emissions in line with Mayoral targets. Businesses attending committed to supporting the Mayor's work on food waste reduction being led through the Food Flagship Initiative by partnering on the delivery of projects to reduce waste in the household; increase the redistribution of edible surplus food; drive innovation in circular food systems; and reduce emissions linked to the production and supply of food to London across the food system.

- The Mayor supported the Eat Like a Londoner (ELAL) campaign along with 26 of London's boroughs. The campaign is seeking to reduce household food waste and empower Londoners to eat more sustainable, climate friendly diets. To date ELAL has generated 4.5 million social media impressions with a reach of over 3.7 million and driven 50,000 visitors to the online campaign hub.
- As part of the EU funded Food Wave programme the Mayor engaged with 78,000 young Londoners in spring 2022 to promote more sustainable choices when purchasing food.
- Through ReLondon the Mayor partnered with the London Borough of Bexley to measure the impact of targeted local promotion of the food waste minimisation apps Kitche and Olio. The project resulted in an increase of 1,500 users across the apps, 7,000 food items being listed with 65% being reshared, and 8.78 tonnes of CO₂e being diverted.
- Working with the Chartered Institute of Environmental Health and Hackney Council, the Mayor provided training to Environmental Health Practitioners to support hospitality businesses to reduce their food waste. The programme resulted in over 200 businesses across the borough being provided with assistance to reduce their food waste.
- Through ReLondon the Mayor has been providing circular food businesses with support to enable them to grow. Through the programme businesses have saved 28,000 tonnes of food waste and 56,000 tonnes of CO₂e.

Single use plastics:

- The Mayor, in partnership with Thames Water and Zoological Society of London's (ZSL) #OneLess initiative has installed 138 public water fountains across London between 2018-2022. The Mayor has also installed 40 drinking fountains in London schools, to help increase the number of water-only schools in the capital. To date, the fountains installed with Thames Water have dispensed water equivalent to avoiding over 5.6 million half-litre single use plastic bottles.
- The Mayor launched City to Sea's global Refill initiative in London in March 2018. The Refill London initiative promotes reusables and maps where people can go into shops and businesses and ask for a free water refill instead of buying one. Since the campaign was launched, the number of water refill points have increased from 200 to over 4,600.

Circular Economy

- Through the Mayor's Green New Deal fund, and with ReLondon the Mayor has delivered a successful business support programme to catalyse London's circular economy. The programme has enabled a diverse community of nearly 200 businesses to access £630,000 in grants and 1,200 hours of expert advice to explore, pilot and scale circular economy business models. Over a 6-month period,

the programme helped divert at least 11,500 kg of waste from traditional waste streams through reuse or other strategies, while supporting the creation or safeguarding of 630 'green' jobs.

6. Climate Change Adaptation

Ensuring Londoners are more resilient to the future impacts of climate change is a high priority for the Mayor of London.

The Mayor continues to work hard to prepare London for the upcoming challenges of climate change. The past years have seen multiple occurrences of record-breaking floods, storms, heatwaves and droughts, reminding us that London needs to adapt to future changes through strong action. In the record-breaking 40°C heat of 2022, schools were closed, hospital operations were cancelled as systems crashed and wildfires caused the busiest day for the London Fire Brigade since the Second World War. By aiming for a net zero London, and at the same time ensuring Londoners understand and are better prepared for the risks, we will ensure that Londoners are safe and resilient, and not disadvantaged by the impacts of climate change.

London Climate Resilience Review

- During his second term, the Mayor of London commissioned an independent review, led by Emma Howard-Boyd CBE to take stock of actions underway since he was elected and make further recommendations to guide London's preparations for more extreme weather. The London Climate Resilience Review has now published [an interim report with 20 key recommendations](#) directed to stakeholders across London, including the Mayor of London, UK government, local authorities and the community and voluntary sector.
- The Mayor has, in his budget, made provision of an additional £1m every year for three years to support the recommendations of the Review and the London Resilience Partnership has committed to run a heat scenario exercise, Exercise Helios, later this year.
- The Review's full report will be published later in 2024 and will include the Review's full findings and complete set of recommendations.

Climate Resilient Schools Programme

- In March 2022, the Mayor of London announced a £1.5 million Climate Resilient Schools Programme with the Department for Education and Thames Water. The partners worked together to enhance the climate resilience of 95 of the most climate vulnerable schools that the programme was targeted at.
- The Programme was completed in 2023, installing 564 planters in 72 schools to help reduce flood risk, as well as installing water efficient measures that resulted in 558,892 litres of water saved per day – the equivalent of 1 Olympic swimming pool saved per week. In addition, bespoke Climate Adaptation Plans were completed for

60 schools to provide practical actions that schools can do to prepare and respond to climate impacts and risks.

- A network of 24 weather stations have been installed on the schools. This dense, London-wide network of weather stations measuring rainfall, wind and temperature extremes in greater detail than any other network in London, whilst providing education benefits to those schools.

Surface water flooding

- Whilst the Mayor has no formal powers related to flooding in London, he has made use of his strong convening powers to bring together the London Surface Water Strategic Group (LSWSG) to better manage the risk in London. This group includes senior representatives from all London authorities with legal duties for surface water flooding, including the boroughs, Environment Agency, Thames Water and TfL.
- The LSWSG has now published an update on the [GLA webpages](#) highlighting the progress against the various recommendations within the review that have been undertaken since the 2021 flooding. The LSWSG is also developing the first London-wide surface water strategy due in 2024, which will highlight and prioritise key flooding locations and help drive investment in reducing risk across the capital.
- The group has worked closely with the Mayor and London Climate Change Partnership including at London Flood Awareness Week - to deliver events on surface water flooding and community resilience workshops with sector partners to help build community resilience to climate risks.
- The Mayor also produced and distributed 90,000 leaflets over two campaigns to urgently raise awareness of flash flooding to those living in basements. The leaflet offers practical advice and guidance to residents about how to prepare for and deal with a flash flood.

Tidal flood risk from the Thames

- London currently benefits from a high standard of protection from tidal flooding but, even in a net zero world, sea level rise is 'locked in' for many decades to come. We need to plan for this future.
- The Mayor supports the Environment Agency in ensuring their Thames Estuary 2100 (TE2100) plan is delivered to protect Londoners as sea levels continue to rise and GLA teams have supported work to update the plan. The updated plan using the latest evidence confirms that a new Thames Barrier will be needed by 2070. It has brought forward the deadline for adapting flood defences upstream (west) of the existing Thames Barrier by 15 years to 2050, confirmed that all options for replacing the Thames Barrier (end-of-century options) should remain open until a decision is made and that the deadline for deciding the end of century option is brought forward from 2050 to 2040.

- The Mayor has also supported the Environment Agency and will continue to work with the relevant councils along the Thames Estuary to protect land for a future new Thames Barrier and support work to adapt flood defences west of the barrier by 2050.

London Flood Awareness Week

- The GLA organises London Flood Awareness Week (LFAW), on behalf of partners including the Environment Agency, Thames Water, London Fire Brigade, London Resilience, London Councils and London Boroughs. The annual campaign aims to make Londoners more aware of and prepared for flooding, focusing on surface water flooding (or flash flooding) in particular. The 2023 campaign was social media focused directing Londoners to a number of assets including our [Flash-flooding web pages \(see here\)](#).

Water Resources

- Two integrated water management strategies have been published in opportunity areas across London, Royal Docklands and the Sub regional Lee Valley in 2023.
- The pilot Subregional Integrated Water Management Strategy (SIWMS) for the Lower Lea is a leading example of IWMS delivered in partnership. The strategy has found the delivery of isolated programmes will not be enough to offset risks, and enable the desired economic growth, climate resilience and environment improvement.

Water Quality

- Officers have been working with Thames 21 to deliver Phase 2 of a water quality project highlighting the issues with road run off. A new tool 'Road Pollution Solutions' was published in 2023. It identified the opportunities to break out old watercourses and restore wetlands in parks that would benefit road run off.

River Health

- Monitoring by the London Rivers Restoration Group shows that 5,805m of river were restored in 2020 and 5,742m in 2021 bringing the cumulative restoration total for 2000-2021 to more than 50km. The London Plan targets of 15km of river restoration by 2015 and 25km by 2020 have been met.
- The Mayor of London supports Catchment Partnerships in London and Green Space Information for Greater London to record and map river restoration works which recently (2023) published the London Rivers Week map showing where restoration has occurred and where there are opportunities to restore rivers.
- The Mayor's Greener City Fund and Green and Resilient Spaces Fund supported projects which have restored London rivers in Enfield and Brent and reduced their flood risk. Smaller-scale projects to improve rivers have been funded through the

Rewild London and Grow Back Greener funds, including the creation of new marginal habitats in the River Lea to link wildlife sites and improvements to the Hogsmill River to support a newly reintroduced population of water voles.

Extreme Heat

- The Mayor has established a Cool Spaces map and app which helps the public find places of refuge (indoor and outdoor spaces) during hot weather and summer heatwaves and provides health guidance. In summer 2023, there were 485 indoor and outdoor cool spaces available during the level 4 heatwave alert.
- During the Level 4 heat alert in July 2022, page views on the environment section of the GLA's website reached 36,000 on 19 July (up from the daily average of 2,200). Out of this, the Cool Spaces page received over 30,000 page views alone.
- The Mayor commissioned and published the '[Roofs Designed to Cool](#)' report, outlining how retrofitting the city's roofs with reflective materials or solar photovoltaic (PV) panels could help contribute to cooling existing homes and reducing carbon emissions by easing the demand for cooling and generating electricity.
- The Mayor commissioned and published a 'Properties Vulnerable to Heat Risk' report which maps London's heat risk across hospitals, care homes, residential properties and neighbourhoods, in the wake of climate change.

Overheating

- The Mayor is concerned about the impacts of hot summers on older people, and evidence shows that the older population residing in care homes are at the highest risk of heat-related premature death.
- The Mayor's Care Home Audit project took place in five care homes in London to assess overheating risks. Work was carried out by the Mayor, University College London (UCL) and Oxford Brookes University. The audits included simple recommendations to help care homes prepare for extreme heat events.
- As a result of this work, the Care Quality Commission now include 'environmental sustainability' in its assessment framework of care homes for older residents. The Mayor's leadership on this work resulted in further funding to scale up the approach to protecting the most vulnerable during extreme heat events.
- The Mayor's report on 'How Schools and Early Years can Adapt to Climate Change' sets out measures which schools and early years settings can take to better prepare for the impacts of climate change.

London Plan Policies

- The Mayor has strong policies in the London Plan on Climate Risks and in the London Environment Strategy published in 2021 which have secured water

efficiency measures for the residential development approved in 2022 which would save around 535 million litres of water per year when compared to the upper requirement of national building regulations, which would be enough water to fill 218 Olympic sized swimming pools.

- For managing London's heat risk and cooling demand: 101 out of 134 developments submitted a dynamic overheating assessment, up from 91 out of 138 in 2021 representing a 9.4 per cent increase. For cooling: 101 developments included some element of active cooling, up from 88 in 2021. Total cooling consumption also roughly doubled from 2021.

Tools

- The [retrofit SuDS map](#) was launched to show locations of sustainable drainage systems in London. It shows 60 hectares drainage to SuDs at 494 locations. This highlights the good work being delivered to tackle surface water flood risk by boroughs, TfL and other delivery organisations.
- The Mayor has developed a [Climate Risk Map for London](#), to identify areas of London that are most exposed to climate impacts with high concentrations of vulnerable populations. These maps are used by the GLA and other organisations to target projects and interventions in the areas most vulnerable to climate change.

7. Ambient Noise

As London's population grows, managing ambient noise becomes increasingly important, with a focus on promoting quiet and tranquil spaces. In 2019, an estimated number of 2,647,000 people in Greater London experienced noise levels above 55dB due to road traffic noise¹¹. The Mayor has taken steps to address noise pollution, including encouraging a shift away from cars towards walking, cycling, and public transport, aiming for 80 per cent of trips to use these modes by 2041. Efforts also include promoting quieter, low-emission vehicles and road surfaces, as well as reducing noise from freight activity.

Bus Network Decarbonisation

- TfL has continued to decarbonise the bus network, reducing emissions and ambient noise from vehicles. There are now over 1,300 electric vehicles on the road, meaning 1 in 7 buses are electric, and TfL is on track to deliver 1,400 electric buses by Spring 2024. TfL are working at pace to electrify the entire fleet - nearly 9,000 vehicles - by 2034 or by 2030 with further Government funding.

Tube Noise

- TfL remains committed to reducing noise and vibration on the Tube network for passengers, staff, and residents, despite funding challenges. It invests in London Underground track renewal and maintenance, including rail grinding and modernisation, while also removing redundant rail infrastructure and installing new rails to address noise. TfL has trailed various technologies like speed variation and acoustic barriers to further mitigate noise levels.

London Plan

- The 2021 London Plan emphasises noise pollution reduction, particularly in Policy D14, which recommends measures to prevent adverse noise impacts on health and quality of life. Policy D13 introduces the Agent of Change principle, holding new developments responsible for mitigating noise impact, not just during construction but also for noise-generating activities like schools and transportation. Additionally, noise reduction measures are integrated into various London Plan policies, ensuring quieter green spaces and incorporating noise levels into neighbourhood assessments before development.

¹¹ Defra (2019) Noise Action Plan: Agglomerations (Urban Areas) Appendix B: Detailed Agglomeration Data. Available at: <https://www.gov.uk/government/publications/noise-action-plans-large-urban-areas-roads-and-railways-2019>

Infrastructure Coordination Service

- The Mayor, with backing from the Mayor's London Infrastructure Group and the Lane Rental Surplus Fund, set up an Infrastructure Coordination Service to drive better collaboration in the planning and delivery of London's infrastructure.
- The Service has piloted approaches to achieve this, including facilitating collaborative streetworks projects that have avoided over 900 days of disruption on the road network, equating to over £10m of benefit for Londoners. Having secured additional external funding from industry, the service is now transitioning into a long-term function of the GLA to continue and expand this work.

8. Low Carbon Circular Economy

The Mayor is supporting London's transition to a low carbon and circular economy, which will bring opportunities for London's businesses and provide jobs, whilst reducing the impact of Londoners on greenhouse gas emissions and the environment.

The London Environment Strategy committed to creating market demand through its policies and programmes and help businesses to capture a share of the market through business support. London is leading the way towards a green low carbon circular economy, which is illustrated by the growth of the sector.

This transition to net-zero has to be equitable, and benefits of a greener, healthier city needs to be shared fairly. The GLA's work on a just transition supports this ambition, while also working with London's leaders that can help deliver a just transition for the city.

Measuring the Green Economy: Low Carbon & Environmental Goods & Services sector growth:

We measure the size of the Green Economy through the Low Carbon & Environmental Goods & Services (LCEGS) sector, which encompasses products and services dedicated to reducing carbon emissions and enhancing environmental sustainability. The Mayor has a Green New Deal target to double the size of the Green Economy by 2030.

- Sales in 2010/11 stood at £24.2bn, peaked at approximately £50bn pre-pandemic, and were reported at £42.9bn in 2020/21.
- In 2019/20, London's LCEGS sector contributed £50.0bn to the economy, employing over 300,000 people across 17,000 businesses in 2019/20 up from almost quarter of a million people in 14,000 businesses in 2017/18. The pandemic caused a dip to £42.9bn in 2020/21, with robust growth anticipated post-pandemic, exceeding 8 per cent by 2025/26.

Green skills is an important component that supports the growth of the green economy and achieving net zero. The Mayor is using his Adult Education Budget to fund a range of green skills. In 2021/22 academic year this was around £33m, with about 44,000 enrolments to these training courses. [Mayor's Green Skills Academies](#) and [Skills Bootcamps for Londoners](#) programmes also support good practice and innovation.

Capturing market share: Better Futures and Business Support:

- The Mayor's of London [Better Futures programme](#) is a partnership of leading organisations in London's public and private sectors. It helps to address London's sustainability and Net Zero challenges by supporting innovation in and for Small and Medium Enterprises (SMEs).

- Now in its third delivery phase under the UKSPF funding, the first and second phases; Better Futures European Regional Development Fund (ERDF) and GND projects supported 280 cleantech businesses and over 300 non-climate tech businesses in the transition to net zero.
- ReLondon's Business Transformation Programme (funded by the Mayor's GND Fund) worked with circular SMEs working to cut waste. This provided 54 grants to support their recovery from the pandemic and to enable businesses to trial new, circular business models. In addition, 51 SMEs have received bespoke expert consultancy support to build back from the pandemic using more sustainable practices. The total number of jobs safeguarded across the programme has been recorded as 532, based on available data about recipient SMEs.
- The Mayor supports the London-based organisation [Undaunted](#), formerly Centre for Climate Innovation, a collaboration between Imperial College's Grantham Institute and the Royal Institution. Undaunted aims to support 'cleantech' innovation to help deliver net zero, specialising in creating a wider ecosystem and network across London for cleantech. The home of Undaunted, the Royal Institution, is receiving £4.3 million from the Mayor's Strategic Investment Fund to retrofit their building and to help them achieve net zero.

Increasing Finance to meet London climate change challenges: London Climate Finance Facility

The Mayor has worked with partners to increase the flow of finance to support the delivery of large-scale projects that address the environmental challenges that London is facing.

- Through the Mayor's green finance programme since 2018, £1.1 billion of finance has been made available to support the decarbonisation of buildings, energy systems and transport.
- The Mayor's Energy Efficiency Fund was launched in 2018, established with European Regional Development Funds matched by the GLA. Projects funded to date include Zenobe energy's installation of electric vehicle charging infrastructure at Walworth Bus depot, a water source heat pump for 2,000 homes in Southwark and part finance of the Meridian Heat network, providing low carbon energy to 10,000 new homes in Enfield.
- The Mayor launched his London Climate Finance Facility in June 2023 to accelerate funding towards his net zero objective and wider environmental aims. As part of the Facility, the London Green Finance Fund will lend up to £500m to projects from public sector partners for energy efficiency, renewable energy and clean transportation projects. £185 million in funds have been committed so far, including work to deploy solar PV on the roof of the London stadium. The Facility is also providing £15 million to support the development of London's project pipeline, including through a new zero carbon accelerator.

- In December 2023, the Mayor announced the Edge Fund, providing further investment in decarbonisation projects, including to organisations not able to access the Green Finance Fund. It is initially supported by £50 million from the GLA and £50 million from SDCL, who are managing the fund.

Circular Economy

- The GLA, ReLondon and several other London organisations were consortium partners in an EU Funded Horizon 2020 CIRCulT project. CIRCulT (Circular Construction in Regenerative Cities) was a collaboration with four cities; Helsinki, Copenhagen, Hamburg and London. The four-year project (2019-2023) aimed to support the implementation of sustainable and circular construction practices across the four cities. The key outputs in London included demonstrator projects in building transformation and life cycle extension, urban mining and reuse, and design for disassembly and adaptability; a digital platform to support reuse of materials that would otherwise be discarded as waste.

Just Transition

- City Hall completed initial research in 2021 to understand the vulnerability of different sectors of London's economy to the transition to net zero. The report identified the sectors most at risk from the transition account for a smaller share of employment; and typically, those sectors most at risk also pay wages less than the London average. The report highlights the disproportionately large role that workers from ethnic minority backgrounds play in some of these sectors too. Over half of the workforce employed in transport and storage are from ethnic minority groups. A key focus of the Mayor is a focus on making sure that those who are most impacted can benefit from the transition.
- The Mayor has used programmes to provide support. For example, through the GND Fund the GLA has allocated £1.8m to Advance London and Better Futures programmes included targeted business support in West London where furlough and job losses have been high and aimed at sectors most affected. These funds are also focussed on supporting businesses in areas of deprivation and to support greater access to the sector for BAME and women led SMEs.

9. Leading by Example

The GLA Group¹² is leading by example to contribute to deliver the ambitions set out in the LES. Key actions include cutting carbon emissions and air pollution from vehicles, buildings and operations; procuring environmentally sustainable goods and services, as well as considering climate change when making decisions on new projects and budgets.

Since 2016, the GLA Group has delivered on this agenda, reporting their progress regularly. Key areas to highlight are include throughout this report but some key areas to note are set out below:

Responsible Procurement

- The GLA Group procures around £9.5bn of products and services each year. Its [Responsible Procurement programme](#) ensures this public spending improves the lives of Londoners and beyond by supporting a fairer and more environmentally sustainable city and supply chain.
- All suppliers of new contracts over £5m are required to produce a Carbon Reduction Plan, and have received these for the 100+ contracts that this applies to. This has provided a platform to work with our biggest suppliers to reduce emissions. The policy is aligned with national requirements for suppliers to produce equivalent statements when supplying the UK government, and has been designed to minimise the impact on businesses, with extra support offered to SMEs.
- TfL's Surrey Quays Station Upgrade cut its embodied carbon emissions by nearly 40 per cent. LLDC's £102m East Wick and Sweetwater development (Phase 1) achieved a 35.7 per cent reduction in embodied carbon compared with industry norms.
- TfL has trialled innovative zero-emission construction plant equipment, improving air quality by switching from diesel machinery to electric. This includes using battery-powered plant at the Old Street Roundabout and trialling electric lifting machinery.

GLA Group Estate Decarbonisation

- The GLA Group achieved a 45 per cent reduction in the carbon emissions from its buildings and vehicles between 2015-16 and 2023-24. This was a reduction from 1.7 million to 0.9 million tonnes CO₂e.

¹² The GLA Group comprises Transport for London, the Metropolitan Police Service, the Mayor's Office for Policing and Crime, the London Fire Brigade, the London Legacy Development Corporation and the Old Oak and Park Royal Development Corporation.

- All GLA Group bodies are implementing plans for their estates to achieve net-zero. The resources required to deliver this are summarised below ('Embedding climate in decision making').
- In 2023, Walthamstow Fire Station became London's first zero-carbon fire station, and England's second.
- GLA Group decarbonisation projects have secured £42.6m in government funding since 2022, supported by the Mayor's Low Carbon Accelerators.

Zero Emission Fleets

- London Environment Strategy proposed to improve the GLA fleet by making all cars in GLA support fleets being zero emission capable by 2025, and by making GLA group fleets fossil fuel-free by 2030.
- The TfL and GLA fleets are making significant progress to be cleaner and greener – with over 95% of the London Fire Brigade and Metropolitan Police fleets compliant with the ULEZ standards, despite their vehicles often being highly specialist and difficult to upgrade. 100% of the TfL fleet is ULEZ compliant, including all London's buses.
- There has been great progress in the electrification of GLA fleets, such as London Fire Brigade's trial of a zero emission capable pumping appliance, the roll out of zero emission vehicles used by the Metropolitan Police and the delivery of 1,300 zero emission buses on TfL's network, making it the largest zero emission bus fleet in Western Europe.

Embedding climate in decision-making

- The GLA Group's 2024-25 budget included a climate budget for the second year. The climate budget is a novel approach to mainstreaming responsibility for climate across the organisation and ensuring the Group's budget is delivering on the important task of delivering on the Mayor's target of net zero emissions by 2030.
- As in the 2023-24 climate budget, the 2024-25 climate budget outlined what the Group would be spending on climate measures across the GLA estate and fleet over the next three-year budget period, and the estimated emissions savings this would deliver. It also identified the further measures that would need to be taken to get to net zero by 2030 and measures to support climate change adaptation.
- Across the GLA Group, there is £443m in the climate budget for estate and fleet decarbonisation over the next three years. As the project pipeline is developed this estimate will be refined.
- The GLA has also developed a community of practice, in partnership with London Councils, to help 13 London Boroughs and 2 waste authorities to explore the

climate budget approach and adopting it in their organisations.

London Anchor Institutions Network

- Convened by the Mayor of London and Chair of London Councils via the London Recovery Board, the London Anchor Institutions Network (LAIN) was formed in March 2021 to tackle inequalities exacerbated by the pandemic, and address the climate emergency and its impacts on the city.
- LAIN's Green New Deal (GND) work strand was convened in 2022. It aims to help tackle the climate emergency by accelerating London's move to net zero. The GND LAIN members, who include Transport for London, London Fire Brigade and Old Oak and Park Royal Development Corporation, have:
 - saved over 2.15 million tonnes of CO₂e through decarbonisation projects ranging from developing new infrastructure and retrofit activities such as installing new low-carbon heating and power systems, to transitioning to electric vehicles and tackling food waste;
 - trained more than 5200 employees in carbon literacy or environmental sustainability;
 - identified 71 buildings from across their estates to retrofit;
 - secured over £130million of funding for decarbonisation projects across the city.

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