

MAYOR OF LONDON

A photograph of Mayor of London Sadiq Khan kneeling in a grassy field. He is wearing a dark blue suit and a light blue shirt. He is holding a green shovel with a wooden handle. To his right, a young girl in a colorful floral jacket is clapping her hands. In the background, there are trees and a building under an overcast sky.

London Environment Strategy

**APPENDIX 4:
LEGISLATIVE AND POLICY BACKGROUND**

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Introduction

This document sets out the legislative and policy background to the London Environment Strategy (the ‘Strategy’). It covers the legal requirements for the strategy before outlining the legislative and policy background of the different environmental topics that are included in the strategy.

Requirement to publish a London Environment Strategy

The Mayor is required to prepare and publish a London Environment Strategy by the Greater London Authority Act 1999 (‘GLA Act’ as amended), under changes made by the Localism Act 2011.

What the London Environment Strategy must contain

Under section 351A of the GLA Act (as amended) the Mayor is required to bring together the following original six separate environmental strategies that were initially required:

- biodiversity (last published and revised in 2002)
- municipal waste management (last published and revised in 2011)
- climate change mitigation and energy (last published and revised in 2011)
- adaptation to climate change (last published and revised in 2011)
- air quality (last published and revised as the Mayor’s Air Quality Strategy (MAQS) in 2010)
- ambient noise (last published and revised in 2004)

The GLA Act contains detailed provisions dealing with all six subject areas listed above, which set out what must be included in the strategy under each subject area. These are described in the following sections of this document.

The London Environment Strategy must also contain a general assessment of London’s environment, as relevant to the Mayor’s and GLA’s functions.

What the London Environment Strategy may contain

Section 351A (5) of the GLA Act states: 'The Strategy may also include provisions dealing with the Mayor's policies and proposals in relation to any other matter relating to the environment in Greater London.'

This allows the Mayor to include in the strategy additional policies and proposals relating to any matter considered of importance and relevant to London's environment.

For example, waste is covered by sections 353 to 361 in terms of 'municipal waste management', which generally excludes waste collected and disposed by commercial operators. However, the strategy contains some policies and proposals on waste aimed at both statutory waste authorities and commercial operators generally. In addition, changes in national policy direction since the Localism Act 2011 have been reflected in the strategy by shifting from a narrow focus on 'biodiversity' to the broader concepts of green infrastructure and natural capital.

A table showing the structure of the strategy in relation to its legal requirements can be found in Appendix 4a.

Other Mayoral strategies

The Mayor is also required by the GLA Act to publish an additional seven strategies, which need to be kept up to date and regularly reviewed. The Mayor will make sure that the new thinking on environmental policy is reflected in these other strategies, where appropriate, and in developing the London Environment Strategy will have regard to the need to ensure consistency with these other strategies.

London Plan (Spatial Development Strategy)

The *National Planning Policy Framework (NPPF)* came into effect in 2012. This represents a commitment by the government to make the planning system more streamlined, localised and less restrictive in an effort to facilitate sustainable development. It provides guidance for local planning authorities in drawing up plans and is a material consideration in determining planning applications. A draft revised NPPF was published for public consultation in March 2018.

Under the GLA Act, the Mayor is required to publish a Spatial Development Strategy; the London Plan. The document brings together the geographical and locational aspects of the Mayor's other strategies, including those dealing with: Transport, Environment, Economic Development, Housing, Culture, and Health Inequalities. In preparing the London Plan, the Mayor has also had regard to the need to ensure consistency with national policies.

The London Plan is legally part of each of London's local planning authorities' Development Plans and must be considered when planning decisions are taken in any part of London. The draft London Plan was published for public consultation in October 2017.

Mayor's Transport Strategy ('MTS')

The Mayor is required to prepare and publish a transport strategy that sets out policies and proposals for the promotion and encouragement of safe, integrated, efficient and economic transport facilities and services to, from and within Greater London. The new MTS was published by the Mayor in March 2018 and outlines policies and proposals to reshape transport in London over the next 25 years. There are three key themes:

- **Healthy Streets and healthy people** – creating streets and street networks that encourage walking, cycling and public transport use to reduce car dependency and the health problems it creates
- **a good public transport experience** – encouraging a shift from car to public transport to dramatically reduce the number of vehicles on London's streets
- **new homes and jobs** – planning the city around walking, cycling and public transport use to unlock growth in new areas and ensure that London grows in a way that benefits everyone

The MTS provides the framework for TfL's activities.

Economic Development Strategy

The Mayor has a statutory responsibility to promote economic development in London and publish a strategy to set out his vision and priorities for the capital.

Housing Strategy

The Mayor's Housing Strategy:

- sets out the Mayor's assessment of housing conditions and the need for further housing provision, his policies to meet needs and improve housing conditions and measures that other bodies are to be encouraged to take to achieve the aims of the strategy
- makes recommendations on the amount of funding from the Regional Housing Pot in London made available to the Homes and Communities Agency (HCA) and how much should be allocated to London boroughs
- makes recommendations on the broad distribution of the HCA programme in London and on how London boroughs should use the Regional Housing Pot funding allocated to them

In addition to providing a London-wide housing policy framework, the Mayor is also responsible for strategic planning in the capital and for operating an affordable housing investment programme.

Health Inequalities Strategy

The Health Inequalities Strategy:

- identifies any issues that appear to the Mayor to be major health issues where there are health inequalities between persons living in Greater London
- identifies those inequalities

- specifies priorities for reducing those inequalities
- describes the role to be performed by any relevant body or person for the purpose of implementing the strategy

Culture Strategy

The Culture Strategy sets out the Mayor's vision, objectives and work programme for culture, media and sport in London. Although the GLA has strategic responsibility for culture, no single agency for culture exists in London, nor is the GLA a major direct funder of culture. The role of the GLA and the Mayor, therefore, is to work in partnership to set priorities, provide leadership, encourage innovation, pilot projects and deliver long-term improvements for:

- the arts, tourism and sport
- ancient monuments and sites
- buildings and other structures which are of historical or architectural interest or which otherwise form part of the heritage of Greater London
- museums and galleries
- library services
- archives
- treasure, and antiquities of a movable nature
- broadcasting, film production and other media of communication

Police and Crime Plan

The Mayor, in his capacity as the Mayor's Office for Policing and Crime (MOPAC), must by virtue of the Police Reform and Social Responsibility Act 2011 produce a Police and Crime Plan that sets out the following:

- MOPAC's police and crime objectives, which are:
 - the policing of London
 - crime and disorder reduction in London
 - the discharge of the Metropolitan Police Service's (MPS) national and international functions
- the policing of London that the Commissioner of Police of the Metropolis (the Commissioner) is to provide; the financial and other resources that MOPAC is to provide to the Commissioner; the means by which the Commissioner will report to MOPAC; the means by which the Commissioner's performance in providing policing will be measured; the services that are to be provided by virtue of section 143 of the Antisocial Behaviour, Crime and Policing Act 2014; any grants that MOPAC is to make under that section, and the conditions (if any) subject to which any such grants are to be made

The latest Police and Crime Plan, *A Safer City for All Londoners*, was published in 2017 and covers the period 2017-2021.

The government's 25 Year Environment Plan

Following the 2011 publication of the Natural Environment White Paper (the Strategy takes the White Paper into account where relevant), the government committed to publish a 25 Year Environment Plan. Published in January 2018, it sets out the government's goals for improving the environment within a generation. The Plan's broad 25 year goals are:

- clean air
- clean and plentiful water
- thriving plants and wildlife
- a reduced risk of harm from environmental hazards such as flooding and drought
- using resources from nature more sustainably and efficiently
- enhanced beauty, heritage and engagement with the natural environment
- mitigating and adapting to climate change
- minimising waste
- managing exposure to chemicals
- enhancing biosecurity

Air Quality

International

Most air quality legislation in Europe and the UK is derived from health-based evidence provided by the World Health Organisation (WHO). The WHO has published various guidelines for both global air quality and European air quality based on the latest research from around the world. These guidelines are neither standards nor legally binding criteria; they are designed to offer guidance in reducing the health impacts of air pollution based on expert evaluation of current scientific evidence. Nevertheless, many administrations use these guidelines as the basis for their own air quality standards.

The European Union Air Quality Directive (2008/50/EC) sets standards for a variety of air pollutants that are considered harmful to human health and the environment. These standards are informed by WHO guidelines but reflect a wider range of factors so are not necessarily the same. Limit values are legally binding and must not be exceeded. These limit values comprise a concentration value for the pollutant, an averaging period over which it is measured, the date by which the limit values are to be achieved, and in some cases an allowable number of exceedances of the limit value per year. The Air Quality Directive also includes target values, which are set out in the same manner as limit values, but which are to be attained where possible by taking all measures that do not entail disproportionate costs.

In addition to the Air Quality Directive, the EU also sets National Emissions Ceilings which are designed to help tackle transboundary pollution that travels across member states.

National

The Air Quality Directive, including the concentration limit values, has been transposed into English law as the Air Quality Regulations 2010 ('the 2010 Regulations'). These Regulations include criteria for determining how progress against the limit values should be assessed, including consideration of locations and length of exposure in relation to the averaging period of the limit values. In particular, the Regulations state that compliance with limit values does not need to be assessed at:

- any location situated within areas where members of the public do not have access and there is no fixed habitation
- on the carriageway of roads and on the central reservations of roads, except where there is normally pedestrian access to the central reservation

In addition, the 2010 Regulations state that sampling points directed at the protection of human health must be sited to provide data on areas where the highest concentrations occur to which the population is likely to be exposed for a period that is significant in relation to the averaging period of any limit value.

This strategy seeks to meet the requirements of the 2010 Regulations and conforms to the assessment criteria set out in them.

The government has committed to publish a Clean Air Strategy for public consultation in 2018. This will seek to tackle pollution from all sources, not just transport. In addition, the revised Air Quality Plan it published in 2017 to deal with transport-related nitrogen dioxide emissions has been found to be unlawful by the courts in relation to areas outside London that exceed limit values. The government has been ordered to consult on and implement a supplement to address this issue by October 2018.

London

The Mayor has a legal responsibility to prepare and to keep under review an Air Quality Strategy for the Greater London area. This is contained within the London Environment Strategy.

The GLA Act originally required the Mayor to include in his Air Quality Strategy policies and proposals:

- for the implementation in Greater London of the policies contained in the strategy prepared and published by the Secretary of State in accordance with section 80 of the Environment Act 1995 (National Air Quality Strategy)
- for the achievement in Greater London of the air quality standards and objectives prescribed in regulations made under section 87(2)(a) and (b) of that Act; this is done in the Air Quality (England) Regulations 2000 ('the 2000 Regulations') – the limit values under the 2010 Regulations are the same as air quality standards and objectives prescribed under the 2000 Regulations.

These requirements still stand for the London Environment Strategy and its air quality provisions. The Strategy may also contain such other policies and proposals relating to the improvement of air quality in Greater London as the Mayor considers appropriate. The Strategy must contain information about the following matters: Greater London's current air quality and its likely future air quality; the measures which are to be taken by the Mayor, Transport for London and other bodies for the purpose of implementing the air quality provisions of the Strategy; and the measures which other persons or bodies are to be encouraged by the Mayor to take for the purpose of its implementation.

In addition, under the Environment Act 1995 the Mayor has supervision in the Greater London area of the Local Air Quality Management (LAQM) process. This requires that London boroughs monitor and review pollution, and where exceedances of the standards are found, they are required to declare an Air Quality Management Area (AQMA) and put in place an action plan detailing remedial measures to tackle the problem. Boroughs must have regard to the air quality provisions in the London Environment Strategy when exercising their LAQM functions and the Mayor has separately established a London LAQM System. The Mayor has the power to issue directions to require boroughs to take action to address local air pollution. Local authorities are also duty bound to consider the health impacts of air pollution in their borough as the fraction of mortality attributable to particulate air pollution is one of their Public Health Outcome Framework indicators.

Green Infrastructure

International

The United Nations 2030 Agenda for Sustainable Development was adopted in September 2015. It contains a set of seventeen goals to protect the planet and ensure prosperity for all. This will require an integrated approach to ecosystem management, recognising the growing pressure on natural resources, and reconciling competing demands and interdependencies between humans and the natural environment.

Cities across the world have adopted a variety of strategies to increase their green cover to meet a number of objectives including: improving public health, adapting to the effects of climate change, and conserving biodiversity. The Organisation for Economic Co-operation and Development (OECD) published its *Green Growth Strategy* in 2011. This in turn resulted in a *Green Growth for Cities* strategy in 2013 which, amongst other things, recognises the importance of protecting, improving and managing a city's natural capital and green infrastructure.

At the Nagoya UN Biodiversity Summit in October 2010, 192 countries and the European Union agreed to an ambitious conservation plan to protect global biodiversity. This new 'Strategic Plan' provides a flexible framework for all 193 Parties to the Convention of Biological Diversity to drive action on biodiversity. It established a new global vision for biodiversity: 'By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.' The EU *Biodiversity Strategy to 2020*, published in 2011, sets how member states should implement the Nagoya agreement to inform their own national plans.

The EU has established a Research and Innovation policy agenda on *Nature-Based Solutions* that promotes an integrated approach to ecosystem management; using and deploying the properties and services of the natural environment in a smart, 'engineered' way. The aim is to position Europe as a leader in innovating with nature for more sustainable and resilient societies, including in urban areas.

The *Final Report of the EU Horizon 2020 Expert Group on 'Nature-Based Solutions and Re-Naturing Cities'* identifies urban natural capital as a priority area for investment. The report identified four principal goals that can be addressed by nature-based solutions:

- stimulate economic growth as well as improving the environment, making cities more attractive, and enhancing human well-being
- improve the resilience of ecosystems, enabling them to deliver vital services that help to meet other societal challenges
- provide more resilient responses to climate change
- lead to greater benefits than conventional methods and offer synergies in reducing multiple risks

The EU Birds Directive (2009/147/EC) and Habitats Directive (92/43/EEC) provide a legal framework for the protection of wild birds, habitats and other species of animals and plants. In particular they provide for the:

- designation and protection of protected areas for migratory birds and the most important habitat types
- provision of sufficient area and diversity of habitats and an ecologically coherent network (including urban environments)
- protection of certain species from hunting

National

The Wildlife and Countryside Act 1981 (as amended) provides the primary legislative framework for the protection of wildlife in Great Britain. It includes provisions that outlaw the killing of birds or destruction of their nests, and certain other protected species including bats, reptiles and certain mammals. It is also the legislation that provides for the designation of nationally protected sites, such as Sites of Special Scientific Interest (SSSI).

The Natural Choice: securing the value of nature, the government's Natural Environment White Paper was published in 2011. It shifted the focus from nature protection and management to a focus on a healthy natural environment as the foundation of sustained economic growth, prosperous communities and personal wellbeing. It set out how the value of nature can be mainstreamed across society by strengthening the connections between people and the natural environment; developing new approaches to articulating the economic value of the natural environment; and facilitating broader partnerships and local action.

In 2011, the government established the Natural Capital Committee (NCC); an independent, time-limited committee providing advice to the government on the sustainable use of natural capital in England (the elements of the natural environment that provide valuable goods and services to people, such as clean air, clean water, food and recreation). The Committee advised the government that if it was serious about protecting and improving natural capital in England, a clear long term strategy was needed, involving public, private and third sectors and covering:

- the important role of accounting, valuation and clear approaches to prioritisation
- specific investment actions, such as woodland planting in the urban fringe, for which there is significant supporting economic evidence of the net benefits to be obtained
- new approaches to financing, which is central to delivering improvements in natural capital at scale

The Natural Capital Committee was re-established in 2016 with a mandate to advise the government on the development of its 25 Year Environment Plan (see the Introduction for more information) and to report on progress towards its delivery. The Committee recommended that the Plan should include: assigning institutional responsibility for monitoring the state of natural capital; creation of registers of natural capital by responsible landowners and land managers; and recommendations on improving decision support tools. These tools include the government's Green Book and the national natural capital accounts.

The Biodiversity 2020: A strategy for England's wildlife and ecosystem services published in 2011 sets out strategic government proposals to halt overall biodiversity loss, support healthy well-functioning ecosystems, and establish coherent ecological networks. It draws upon the EU Biodiversity Strategy to 2020.

In autumn 2016, a Public Parks Inquiry was established under the auspices of the Communities and Local Government (CLG) Committee. This investigated how public parks and green spaces should be supported now and in the future, including exploring alternative management and funding models. The CLG Committee's 2017 report highlights considerable challenges for the sector, including:

- reduced council spending
- the need for parks and green spaces to compete with other services for funding
- planning policy not giving them enough weight, particularly as a result of pressures to increase housing supply

The report recommends that local authorities should publish strategic plans that should set out how green spaces could be managed to maximise their contribution to wider local authority agendas, such as promoting healthy lifestyles, tackling social exclusion, and managing flood risk. The report recommends that the government should issue guidance to councils to work with Health and Wellbeing Boards, and other relevant bodies, to publish joint plans and consider making this strategy a legal requirement if the guidance proves ineffective.

The government's 25 Year Environment Plan endorses a natural capital approach to managing the environment and sets out a number of objectives and proposals for the natural environment and green infrastructure, including:

- embedding an 'environmental net gain' principle for new development, including strengthening national planning policy
- replacing the Common Agricultural Policy within a new environmental land management system based on the principle of public money for public goods
- publishing a new strategy for nature and developing a nature recovery network to more effectively link protected sites and landscapes, as well as urban green and blue infrastructure
- launching a three-year 'Natural Environment for Health and Wellbeing' programme, and a 'Nature Friendly Schools' programme
- reviewing and updating standards for green infrastructure by summer 2019
- planting more trees in and around towns and cities, working towards a target of 1 million more urban trees in England by 2022, and supporting Community Forests so that they can play a leading role in urban tree planting

London

The GLA Act originally required the Mayor's Biodiversity Strategy (published in 2002) to contain information on:

- the ecology of Greater London
- the wildlife of Greater London and its habitat
- any proposals for the conservation and promotion by the Mayor of biodiversity within Greater London, which have been agreed between the Mayor and any person or body he is required to consult in relation to the London Biodiversity Action Plan
- any commitments as to the conservation and promotion of biodiversity within Greater London made by any person or body who is required to be consulted by the Mayor in relation to the London Biodiversity Action Plan

These requirements still stand for the London Environment Strategy and its biodiversity provisions. However, in line with the shift in emphasis in national policy on the natural environment signalled by the government's Natural Environment White Paper, the policy base in London was broadened to encompass the concept of green infrastructure. This addressed the more integrated and holistic thinking required by ideas of ecosystem management, nature-based solutions and natural capital.

This evolution of the policy framework is set out in *Natural Capital: Investing in a green infrastructure for a future London*. The report argues:

- the purpose of both individual spaces, and the network as a whole, must be designed and managed to address current and future urban challenges, rather than only reflect historic design and use
- those who own and manage London's green infrastructure should value it for the full range of benefits it provides. Decisions on funding and investment should be made on the basis of properly valuing the benefits that green infrastructure provides
- the need for improvements in local and sub-regional governance structures, to help raise the profile of the importance of green infrastructure in London and to improve the coordination of green infrastructure planning and funding
- the services and benefits provided by green infrastructure need to be understood in terms of their economic value (as well as their environmental and intrinsic value) in order to make a more compelling business case for investment and maintenance

Climate Change Mitigation and Energy

International

The United Nations Paris Climate Agreement is a climate change accord agreed by nearly 200 countries in December 2015. The historic agreement commits world leaders to keeping global warming below a threshold of 2°C, and pursuing a tougher target of 1.5°C. The agreement also has a long-term goal for net zero greenhouse gas emissions, which would effectively phase out fossil fuels. The UK government ratified the Paris Agreement in November 2016 and must now show its commitment to this target, beyond the ambitions of the 2008 Climate Change Act.

The Energy Performance of Buildings Directive (2010/31/EU) and the Energy Efficiency Directive (2012/27/EU) are the EU's main legislation covering the reduction of buildings' energy consumption of. They promote the production of Energy Performance Certificates and aim to drive all new buildings to be nearly zero energy by 31st December 2020 (public buildings by 31st December 2018). EU Member States must set minimum energy performance requirements for new buildings, for the major renovation of buildings, and for the replacement or retrofit of building elements (heating and cooling systems, roofs, walls, etc.). This was transposed into the UK National Energy Efficiency Action Plan in 2014.

National

The Climate Change Act 2008 commits the UK government to reducing greenhouse gas emissions by at least 80 per cent of 1990 levels by 2050. It sets legally-binding 'carbon budgets' capping the amount of greenhouse gases emitted in the UK over a five-year period. The budgets are designed to reflect a cost-effective way of achieving the UK's long-term climate objectives. The first five carbon budgets have been put into legislation and run up to 2032.

The government's Clean Growth Strategy (CGS) was published by the Department for Business, Energy & Industrial Strategy on 12th October 2017 as the most recent emission reduction plan for the UK. It is intended to set out how the government will deliver the greenhouse gas emission reductions required to meet the fourth and fifth carbon budgets, spanning 2023-2027 and 2028-

2032. As a legally binding target established by the Climate Change Act by 2032, the UK must cut its greenhouse gas emissions to 57 per cent below 1990 levels.

The UK government has a legal obligation to tackle fuel poverty. The 2014 Fuel Poverty Regulations set a target 'to ensure that as many fuel poor homes as is reasonably practicable achieve a minimum energy efficiency rating of Band C, by 2030'. Although the government has provided a strategic framework for tackling fuel poverty, what is 'reasonably practicable' has not been defined and regional targets have not been set.

Energy efficiency measures will be critical in tackling fuel poverty and reducing greenhouse gas emissions. Energy efficiency regulations are being strengthened. To require any properties in the private rented sector to have a minimum energy performance rating of E on an Energy Performance Certificate. The regulations came into force for new rentals and renewals of tenancies on 1st April 2018 and will come into force for all existing tenancies on 1st April 2020. Guidance for landlords is available on the government's website.

London

Under the climate change mitigation and energy provisions of the London Environment Strategy, the Mayor must set out policies and proposals with respect to Greater London's contribution towards climate change mitigation, and the achievement of any objectives specified or described in national policies relating to energy.

Waste

International

The EU Landfill Directive 1999 (1999/31/EC) sets targets for Member States to reduce the amount of biodegradable municipal waste sent to landfill. It applies to household waste and other waste similar in composition to household waste.

The EU Circular Economy Action Plan, 2015, aims to help businesses and consumers transition to an economy where resources are used more sustainably and their full value is considered across all lifecycle stages.

The EU Waste Framework Directive 2008 (2008/98/EC) sets the basic concepts and definitions related to waste management, and includes:

- definitions of waste, recycling and recovery
- a waste management hierarchy
- the 'polluter pays principle' and 'extended producer responsibility'
- recycling and recovery targets
- a requirement for waste to be managed without:
 - endangering human health
 - harming the environment (focusing on water, air, soil, plants or animals)
 - causing a nuisance through noise or odours
 - adversely affecting the countryside or places of special interest

National

UK waste policy is built upon the waste hierarchy in the EU Waste Framework Directive 2008 (2008/98/EC), which has been transposed into UK law. All EU Landfill Directive requirements relevant to municipal waste have been transposed into UK law, except for the EU Circular Economy policy package approved by the European Parliament in March 2017. The Waste Strategy for England 2007 incentivised recycling and diversion from landfill. It includes a target for household waste recycling of 50 per cent by 2020. The National Waste Prevention Plan, 2013, encouraged the reduction of waste through demonstrating the money saving potential and the value of resources.

The UK Waste Regulations 2015 require all businesses and households to fully segregate their waste into general and recyclables. This splits dry mixed recyclables such as plastics, metals, paper and glass.

In the UK, the definition of 'municipal waste' has changed over the years. Traditionally, municipal refers to waste in the possession or control of local authorities, commonly known as 'Local Authority Collected Waste' ('LACW'). Waste is defined as 'any substance or object which the holder discards or intends or is required to discard' and includes waste from households, street waste, waste delivered to household waste and recycling centres, and business waste collected by the local waste authority.

The government's 25 Year Environment Plan aims to eliminate all avoidable waste by 2050, and all avoidable plastic waste by the end of 2042. This is expected to be achieved through a range of different actions, including:

- extending producer responsibility to plastic products
- supporting water companies, high street retailers and others to offer new refill points for people to top-up water bottles for free
- ensuring that a consistent set of waste materials are collected by all local authorities
- reducing carbon dioxide emissions from Energy from Waste facilities by managing the amount of plastics in the residual waste stream
- curbing emissions from combustion plants and generators

The 25 Year Environment Plan also commits the government to publishing a new Resources and Waste Strategy in 2018 aimed at making the UK a world leader in resource efficiency. It will set out the government's approach to reducing waste, promoting markets for secondary materials, incentivising producers to design better products and ensuring that materials can be better managed at the end of life by targeting environmental impacts.

London

The London Environment Strategy is required by the GLA Act 1999 (as amended) to contain provisions dealing with the Mayor's policies and proposals relating to municipal waste management, i.e. the recovery, treatment and disposal of municipal waste and such other proposals relating to such waste as he considers appropriate.

In 2011, Defra changed the definition of municipal waste to align with the EU definition, which defines municipal waste much more broadly to be *household waste or waste similar in composition to household waste*. Applying this definition brings an additional 3.3 million tonnes of non-household (mainly commercial) waste into scope regardless of who collects it. This change was made to make sure that the UK is correctly reporting its performance for meeting its landfill diversion targets under the European Landfill Directive.

The Mayor's previous two municipal waste management strategies applied the definition of municipal waste as set out in the GLA Act - to be waste in the control or possession of waste authorities. The Mayor has the power to include in this Strategy policies and proposals in relation to other matters relating to the environment of Greater London he considers important and relevant. Given the significance of municipal waste collected by commercial operators and Defra's guidance in relation to the new agreed terminology, the Mayor has decided to adopt the broader EU definition of municipal waste.

Adapting to Climate Change

International

The Paris Agreement of the United Nations Framework Convention on Climate Change, adopted in December 2015, established an adaptation goal of ‘enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change,’ and an aim to strengthen societies’ ability to deal with the impacts of climate change, to engage in national adaptation planning processes, and to provide continued and enhanced international support for adaptation in developing countries.

Flood Risk

The EU Floods Directive (2007/60/EC) requires Member States to assess their rivers and coastlines for flood risk and to produce flood maps that, among other things, assess risk to the population, and to take measures to reduce this risk.

Drought

The EU Urban Wastewater Treatment Directive (91/271/EEC) aims to protect the water environment from being damaged by urban waste water and certain industrial discharges.

The EU Water Framework Directive (2000/60/EC) creates a single system of water management, based around a natural river basin. Greater London is part of the wider Thames river basin, which spans many local authority areas. The Directive sets objectives and deadlines for improving water quality. It looks overall at both the ecology of the water and its chemical characteristics. Water supply companies are required to consider the Water Framework Directive when abstracting water from the environment.

Heat Risk

The EU Energy Performance of Buildings Directive (2010/31/EU) includes a focus on measures that avoid overheating, such as shading and enough thermal capacity in the building construction, as well as the development and application of passive cooling techniques.

National

The Climate Change Act 2008 put in place a policy framework in the UK to promote adaptation in five-yearly cycles. This includes:

- a Climate Change Risk Assessment setting out the major risks and opportunities from climate change
- a National Adaptation Programme to be produced within 18 months of the risk assessment, setting out how the major risks will be addressed
- the Adaptation Reporting Power, which grants the Secretary of State the authority to direct organisations to report on their understanding of climate risks and their action to address the risks

The Greater London Authority reported under this provision in 2010. The Committee on Climate Change scrutinises the whole UK adaptation program, including the reports submitted under the Adaptation Reporting Power and the National Adaptation Program, to provide an assessment of the UK's progress in adaptation.

The current National Adaptation Programme (2013-2018), developed in response to the 2012 UK Climate Change Risk Assessment, sets out the actions that will be taken by organisations in seven sectors: built environment, infrastructure, healthy and resilient communities, agriculture and forestry, natural environment, business, and local government.

The Civil Contingencies Act 2014 defines an emergency as an event or situation that threatens serious damage to human welfare, and/or event or situation that threatens serious damage to the environment. Such events or situations can include heatwaves, flooding and major water pollution incidents.

Flood Risk

The Flood & Water Management Act 2010 aims to provide a simpler and more effective approach to management of flood risk for people, homes and businesses. The Act considers wider water management issues to help with sustainability of resources and security of supply. The Act requires flood and coastal erosion risk management authorities (that did not previously have such a duty) to work in a coordinated way when managing flood risk and aim to contribute towards the achievement of sustainable development when exercising their flood and coastal erosion risk management functions.

Drought

The Water Act 1989 paved the way for the privatisation of the former water authorities.

The Water Industry Act 1991 set out the main powers and duties of the water and sewerage companies, replacing those set out in the Water Act 1989, and defined the powers of what is now the Water Services Regulation Authority.

The Water Resources Act 1991 set out the functions of what is now the Environment Agency, and introduced water quality classifications and objectives for the first time.

The Water Industry Act 1999 made amendments to the 1991 Act, including removing water companies' right to disconnect domestic customers for non-payment of bills, limiting circumstances where water companies can meter, and ensuring that water companies could continue to charge on the basis of rateable value.

The Water Act 2003 made changes to water abstraction licencing, amendments to the scope for industry competition, and extended competition to larger users.

The Flood & Water Management Act 2010 encouraged the use of sustainable urban drainage systems, amended the Water Industry Act 1999 to modernise the list of activities that can be restricted by water companies in a drought, and made it easier for water companies to offer lower tariffs to certain groups.

Finally, the Water Act 2014 opened up competition in the non-household retail water market, allowing other companies into the market place.

Heat Risk

The National Resilience Capabilities Programme aims to increase the capability of the UK to respond to and recover from civil emergencies. It does this by building capability to deal with consequences that are common to most types of emergency, regardless of whether these emergencies are caused by accidents, natural hazards or man-made threats.

The NHS Heatwave Plan for England provides support to the NHS, social care and local authorities to prepare and respond to heatwave affecting everyone's health, in particular the most vulnerable.

The National Institute for Health Research is funding the Health Protection Research Unit in Environmental Change and Health. Its Theme 2: Sustainable Cities is developing the evidence base to enable effective adaptation to promote sustainable development policies in the urban and built environment, including housing policy. Improved quantification of the health benefits and harms of mitigation and adaptation policies is a key part of this work.

London

Under the GLA Act, the provision of London's Environment Strategy dealing with adapting to climate change shall contain:

- the Mayor's assessment of the consequences of climate change for Greater London

- the Mayor's proposals and policies for adaptation to climate change, so far as relating to Greater London

In 2001 the GLA, the Environment Agency, the UK Climate Impacts Programme, and other partners set up the London Climate Change Partnership (LCCP) to be the centre of expertise on climate change adaptation and resilience to extreme weather in London. LCCP's mission is to coordinate public, private, and community sector organisations to prepare London for extreme weather today and climate change into the future by collecting and sharing high quality research and evidence, informing policy, monitoring London's climate resilience, and supporting champions within partner organisations who drive forward action.

London Resilience coordinates institutions and communities to prevent, handle, recover from, and learn from disruption, and adapt to change. They work on behalf of the Mayor of London, the Greater London Authority, local authorities, and London Fire Brigade to support the work of the London Resilience Partnership. The Partnership brings together more than 170 organisations (fire, police, local authorities, utilities, transport, etc.) that have specific responsibilities for preparing for, and responding to, emergencies. This is achieved by assessing risks, working to reduce the likelihood or impact of those risks, and, where risk can't be eliminated, preparing arrangements to respond, recover, and learn from emergencies.

London Resilience has prepared the London Risk Register, which is designed to provide a summary of the main risks affecting Greater London. Figure 1 shows the risks that London faces, with blue rings to show the climate-related risks that are considered within the London Environment Strategy.

Ambient Noise

International

Ambient noise is rarely tackled on an international scale. With the exception of international noise guidelines developed by the WHO, noise is mostly legislated at a European or National Level. However, noise sources are increasingly controlled by international standards. The WHO produces guidelines which incorporate thresholds for the lowest level considered to affect health and wellbeing. These usually apply to aircraft, road vehicles and many types of equipment.

In 1999, the WHO developed guidelines for community noise. This provided research based information on the effects of noise and the lowest levels of noise that affect health. This set daytime noise guidelines at 50-55 dBA, the noise level where the majority of the population will be protected from moderate or serious annoyance.

The International Civil Aviation Organisation's priority is to limit the number of people affected by significant aircraft noise. Much of its effort to address aircraft noise over the past 40 years has been aimed at reducing noise at source. Aircraft built today are required to meet the noise certification standards adopted by the Council of the International Civil Aviation Organisation. These standards require large civil aircraft, from 2017, to be at least 7dB quieter than the current standard. Standards for smaller aircraft will be similarly reduced in 2020.

Over the years, the EU has adopted a number of measures, actions and Directives establishing permitted noise levels. These have been accompanied by various forms of guidance or sponsored research.

In 2009, the WHO produced night noise guidelines for Europe as a regional update to the WHO community noise guidelines developed in 1999. These guidelines propose a target limit of 40dB for outdoor night noise. However, as some countries may not be able to meet this target in the short term, an interim target of 55dB has been proposed.

In 2013, through Decision 1386/2013/EU, the EU's General Union Environment Action Programme to 2020 '*Living well within the limits of our planet*' was published. This document sets a target to safeguard EU citizens from environment-related pressures and risks to health and wellbeing. It aims to ensure that by 2020 noise pollution within the EU will be significantly decreased, moving closer to WHO recommended levels. There has been no comment on progress to date. However, a report outlining how the objectives were met is expected on completion of the Environment Action Programme in 2020.

Ambient noise, from the citizen exposure perspective, was first systematically tackled in the EU in 2002 with the advent of the Environmental Noise Directive (2002/49/EC). This was designed to reflect the assessment and management of environmental noise and is the main EU instrument for identifying noise pollution and triggering mitigation measures. To fulfil the requirements of the Environmental Noise Directive, Member States are required to prepare noise maps and Noise Action Plans for specified transport sources and agglomerations (large urban areas) every five years.

Environmental noise is also regulated at the source of the noise. Regulations fall under four broad categories:

- road traffic noise
- aircraft noise
- railway noise
- noise from equipment for use outdoors

European Commission regulation proposes to reduce the noise by targeting manufacturing processes for passenger cars, light commercial vehicles, buses, light trucks, coaches, and trucks. The Regulation was adopted in April 2014 and will help reduce noise by around 25 per cent by introducing lower limit values for vehicle noise, introducing requirements for noise labelling of vehicles, and new test methods that better reflect current driver behaviour.

National

The Environmental Noise Directive was transposed by the UK government into the Environmental Noise (England) Regulations 2006 (as subsequently amended).

This was put into action by the Department for Environment, Food and Rural Affairs (Defra) who published strategic noise maps and the following noise action plans:

- noise action plan for agglomerations
- noise action plan for roads (including major roads)
- noise action plan for railways (including major railways)
- guidance for airport operators (including major airports) to produce noise action plans

This has resulted in the identification of Important Areas in London, which represent areas where those that are affected by the highest noise levels are located (the top 1 per cent).

New noise mapping and exposure assessments are expected to be produced by Defra in 2018, followed by revised noise action plans. Directive 2015/996 has been adopted and implements a revision to the Environmental Noise Directive. Defra is also in the process of revising the implementation approach to the Environmental Noise Directive in England. The responsibility for this process is currently being passed from Defra to the Environment Agency.

The UK has a wide range of legislation for environmental noise, utilising a number of government departments and other bodies in its regulation. Outside of the documents produced to fulfil the requirements of the Environmental Noise Directive, there is a Noise Policy Statement for England, and noise provisions within the NPPF.

The Noise Policy Statement for England, produced by Defra, is a policy vision designed to facilitate decisions regarding what is an acceptable noise burden. It does this by providing clarity on policies and practices to enable noise management decision making. The statement, which came into force in 2010, applies to all types of noise, apart from noise in the workplace. The policy aims to:

- avoid significant adverse impacts on health and quality of life
- mitigate and minimise adverse impacts on health and quality of life
- where possible, contribute to the improvement of health and quality of life

The Environmental Protection Act 1990 outlines cases of statutory nuisance. This encompasses public and private nuisances, including noise. While the Act is applied across all of the UK, local authorities have a duty to detect statutory nuisances and take reasonable steps to investigate complaints. Where statutory nuisance exists, they can take action to abate it through Abatement Notices.

The government sets the overall national policy framework for aviation noise, Aviation Policy Framework (2013). In addition, the government has powers under the Civil Aviation Act 1982 to set noise controls at specific airports which it designates for noise management purposes. For many years, Heathrow, Gatwick and Stansted Airports have been designated for these purposes. The future designation of these airports is under consideration as part of the work of the Airports Commission. While airports are provided with guidance for their noise action plans through the Environmental Noise Directive, certain airports (including 'major airports' with over 50,000 movements per year) have to prepare their own Noise Action for approval by the Secretary of State.

London

The GLA Act originally outlined a duty for the Mayor to prepare a 'London Ambient Noise Strategy'. This should tackle the main, long-term, predictable sources of noise across London, relating to noise from transport, fixed industrial sources and any other sources the Mayor may consider appropriate. These requirements still stand for the London Environment Strategy and its ambient noise provisions.

Beyond this, the roles and responsibilities of the Mayor are limited in regard to noise. The Mayor has no direct role over policing noise emitted from construction works, loudspeakers in the street, noise under the control of an employer, noise emitted from premises, noise emitted from or caused by a vehicle in the street, noise emitted from or caused by machinery or equipment in a street, and noise from drones or other model aircraft. Responsibility for the policing and management of noise falls to local authorities and independent organisations.

The London Plan contains key noise policies intended to broadly align with government policy in the NPPF and Noise Policy Statement for England. It addresses the need to reduce and mitigate noise, improve and enhance the acoustic environments.

Appendix 4a GLA Act 1999 (as amended) and Localism Act 2011 Ready Reckoner

		Where in the LES different environmental topics are covered			Comment
		Policy Area	Objective	Policy	
The GLA Act 1999 (as amended) requires the publication of a single environment strategy for London, covering:	Biodiversity	Green Infrastructure and Natural Capital	4.2: Conserving and enhancing wildlife and natural habitats.	Policy 4.2.1 To ensure a net gain in biodiversity and improve access to nature by protecting a core network of nature conservation sites and enhancing the ecology of green spaces and the built environment.	All of the Green Infrastructure section's objectives and policies will ultimately contribute to enhancing biodiversity, through habitat creation and enhancement. However, the primary biodiversity objective is Objective 4.2.
	Municipal Waste	Waste	8.1: Significantly cutting London's waste – reduce food and drink waste arising by 20 per cent per person by 2025 and halving the proportion of local authority collected waste sent for disposal (landfill or incineration) by 2030.	Policy 8.1.1 The Mayor will work with Londoners, waste authorities, government, business and other stakeholders to cut waste, and divert surplus and unwanted items to useful purposes.	
			8.2: London will achieve 65% municipal waste recycling rate by 2030.	All policies in Waste section	
			8.3: London's municipal waste activities deliver continuous year on year lifecycle CO2eq emission savings.	All policies in Waste section	
			8.4: Achieving 100% net waste self-sufficiency - ensuring London has sufficient infrastructure to manage all the waste it produces by 2026.	Policy 8.4.1 Supporting waste authorities to procure waste and recycling services maximising local economic, environmental and social benefits.	This includes commercial, as well as municipal waste operators, as per section 225(5) of the Localism Act 2011.
	Climate Change Mitigation and Energy	Climate Change Mitigation and Energy	All objectives in Climate Change Mitigation and Energy section	All policies in Climate Change Mitigation and Energy section	The GLA Act 2007 section 361B (3a) requires that the Strategy considers "minimising emissions of carbon dioxide and other significant greenhouse substances from the use of energy in Greater London for the purposes of surface transport". This is covered broadly in Objective 6.3: A zero carbon transport network by 2050, but policies and proposals are primarily located in the Air Quality section.
	Adaptation to Climate Change	Adapting to Climate Change	All objectives in Adapting to Climate Change section	All policies in Adapting to Climate Change section	The main topics in this policy area are flood risk and heat risk.
Air Quality	Air Quality	All objectives in Air Quality section	All policies in Air Quality section		
Ambient Noise	Ambient Noise	All objectives in Ambient Noise section	All policies in Ambient Noise section		
Additional topics, as per s 351A(5) GLA Act 1999 (as amended)	Water Supply	Water	All objectives in Water section	All policies in Water section	
	Non-Municipal Waste	Waste	Objective 8.1 not only covers local authority collected waste but also business waste.	Policy 8.1.1 The Mayor will work with Londoners, waste authorities, government, business and other stakeholders to cut waste, and divert surplus and unwanted items to useful purposes.	This includes commercial, as well as municipal waste operators, as per s 351A(5) and also s 30 generally (the power to do anything that furthers the environmental improvement of Greater London).

Appendix 4a GLA Act 1999 (as amended) and Localism Act 2011 Ready Reckoner

GLA Act 1999 section (as amended)	Requirement	Where it is addressed in this strategy
352 - Biodiversity	(2)The provisions of the London Environment Strategy dealing with biodiversity shall contain information about— (a)the ecology of Greater London, (b)the wildlife of Greater London and its habitat, (c)any proposals for the conservation and promotion by the Mayor of biodiversity within Greater London, which have been agreed between the Mayor and any person or body he has consulted or intends to consult in relation to those provisions of the London Environment Strategy, and (d)any commitments as to the conservation and promotion of biodiversity within Greater London made by any person or body who the Mayor has consulted or intends to consult in relation to those provisions of the London Environment Strategy.	This is covered in the General Assessment, the introduction to the Green Infrastructure and Natural Capital section, and the Evidence Base Objective 4.2 and its policies and proposals cover conservation This is covered in the introduction to the Green Infrastructure and Natural Capital section
353 - Municipal Waste	(2)The provisions of the London Environment Strategy dealing with municipal waste management — (a)shall contain the Mayor's proposals and policies for the recovery, treatment and disposal of municipal waste, and (b)may contain such other proposals and policies relating to municipal waste as he considers appropriate.	Objectives 8.1 and 8.2 cover the reduction of waste generated and sent to landfill Objectives 8.3 and 8.4 cover carbon emissions from waste and sustainability of waste infrastructure
361 B - Climate Change Mitigation and Energy	(2)The provisions of the London Environment Strategy dealing with climate change mitigation and energy shall contain the Mayor's proposals and policies with respect to the contribution to be made in Greater London towards each of the following— (a)the mitigation of climate change, (b)the achievement of any objectives specified or described in national policies relating to energy.	All policies and proposals within the Climate Change Mitigation and Energy section The UK Climate Change Act 2008 requires an 80% reduction in CO ₂ emissions by 2050 based on 1990 levels - this is addressed in all three objectives in the Climate Change Mitigation & Energy section
	(3)The provisions of the London Environment Strategy dealing with climate change mitigation and energy must include the Mayor's proposals and policies relating to each of the following— (a)minimising emissions of carbon dioxide and other significant greenhouse substances from the use of energy in Greater London for the purposes of surface transport, (b)minimising emissions of carbon dioxide and other significant greenhouse substances from the use of energy in Greater London for purposes other than those of transportation, (c)supporting innovation, and encouraging investment, in energy technologies in Greater London, (d)promoting the efficient production and use of energy in Greater London.	N/A Objective 9.3: A zero carbon transport network by 2050, but primarily located in the Air Quality section Policies and proposals within the Climate Change Mitigation and Energy section, with the exception of Objective 9.3 Objective 9.2: Develop smart, low-carbon, local energy systems Objective 9.1 deals with efficient use of energy, whilst Objective 6.2 deals with efficient production of energy
	(6)The provisions of the London Environment Strategy dealing with climate change mitigation and energy shall also contain information about— (a)the pattern of energy use in Greater London, (b)the levels of emissions in, or attributable to, Greater London of substances which contribute to climate change, (c)the number of households in Greater London in which one or more persons are living in fuel poverty, within the meaning of the Warm Homes and Energy Conservation Act 2000 (see section 1 of that Act), (d)the measures to be taken, for the purpose of implementing those provisions, by each of the following— (i)the Authority, (ii)Transport for London, (iii)the London Development Agency, (e)the measures which other bodies or persons are to be encouraged by the Mayor to take for the purpose of implementing those provisions.	Covered in the introduction to the Climate Change Mitigation and Energy section and the Evidence Base. The Warm Homes and Energy Conservation Act 2000 definition of fuel poverty is out of date and so this Strategy uses the definition currently used by the government. Each policy and proposal makes clear who is responsible for its implementation
361 D - Adaptation to Climate Change	(2)The provisions of the London Environment Strategy dealing with adaptation to climate change shall contain— (a)the Mayor's assessment of the consequences of climate change for Greater London; (b)the Mayor's proposals and policies for adaptation to climate change, so far as relating to Greater London.	Covered in the introduction to the Adapting to Climate Change section and the Evidence Base All policies and proposals within the Adapting to Climate Change section - focusing on flood risk, heat risk and water quality (water supply is covered in the Water section)
362 - Air Quality	(2)The provisions of the London Environment Strategy dealing with air quality shall contain the Mayor's proposals and policies— (a)for the implementation in Greater London of the policies contained in the strategy prepared and published by the Secretary of State in accordance with section 80 of the Environment Act 1995 (national air quality strategy), and (b)for the achievement in Greater London of the air quality standards and objectives prescribed in regulations made under section 87(2)(a) and (b) of that Act, and may contain such other proposals and policies relating to the improvement of air quality in Greater London as the Mayor considers appropriate.	Objective 5.2 covers how London will achieve compliance with UK and EU limits as soon as possible Objective 5.2 covers legal compliance, whilst Objective 5.1 covers exposure reduction and Objective 5.3 covers improved air quality targets
	(3)The provisions of the London Environment Strategy dealing with air quality shall also contain information about— (a)the air quality in Greater London and the likely future air quality in Greater London, (b)the measures which are to be taken by the Authority, Transport for London and the London Development Agency for the purpose of the implementation of the provisions of the London Environment Strategy dealing with air quality, (c)the measures which other persons or bodies are to be encouraged by the Mayor to take for the purpose of the implementation of the provisions of the London Environment Strategy dealing with air quality.	Covered in the introduction to the Air Quality section The policies and proposals in the Air Quality section make clear who is responsible for their implementation
370 - Noise	(2)The provisions of the London Environment Strategy dealing with ambient noise shall consist of— (a)information about ambient noise levels in Greater London and the impact of such noise levels on those living and working in Greater London, (b)an assessment of the impact of the Mayor's strategies specified in section 41(1) above on ambient noise levels in Greater London, and (c)a summary of action taken, or proposed to be taken, by the Mayor for the purpose of promoting measures to reduce ambient noise levels in Greater London and the impact of such noise levels on those living and working in Greater London.	N/A Covered in the introduction to the Ambient Noise section The Noise section references the other Mayoral strategies in terms of how they can contribute to reducing noise levels and exposure. Objectives 6.1 and 6.2 outline the proposed actions to reduce ambient noise levels and their impact

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