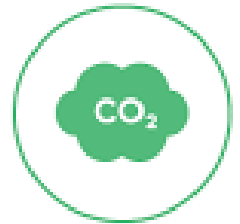
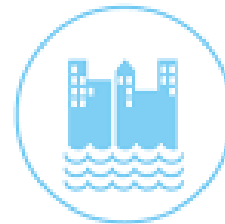


2019-2024

London Borough of Harrow Climate Change Strategy

Incorporating the Air Quality and Climate Change Action Plans



Contents

Foreword

1. Introduction

- 1.1 What is Climate Change

2. Impacts of Climate Change

- 2.1 The Impacts
- 2.2 Global Climate Change Agreements
- 2.3 Reference to London Policy
 - 2.3.1 London Policy
 - 2.3.2 National Policy
 - 2.3.3 Policy Context

3. Harrow Council Climate Change Strategy

- 3.1 Overview of the Strategy
- 3.2 Harrow Climate Change Operation and Objectives
- 3.3 The Council's Sustainable Energy and Climate Change Road Map
 - 3.3.1 The Council Foot Print and Carbon Reduction Strategy
 - 3.3.2 Domestic Energy
 - 3.3.3 Sustainable Transport and Air quality
 - 3.3.4 Planning and development
 - 3.3.5 Natural Environment and Biodiversity
 - 3.3.6 Sustainable Resource Management Waste Management Strategy
 - 3.3.7 Flood Risk Management and Strategy
 - 3.3.8 Working with businesses
- 3.4 Air Quality and Pollution in Harrow
 - 3.4.1 UK government Air quality Strategy
 - 3.4.2 Air quality in London
 - 3.4.3 Air quality in Harrow

4. Risk Management Implications

5. The Storing and Disclosure of Information

6. Monitoring and Review

7. Amendments to this Strategy

Appendix A - Climate Change Action Plan

Our Commitments, Actions and Targets

Executive summary

This strategy sets out our plan to do our bit as a Council to tackle climate change, whilst also cutting down on our energy bills, improving the health and wellbeing of our residents and saving our precious environment.

The GLA reports that Harrow's total carbon emissions in 2015, were around 770 kt CO₂e, which represented 2.4% of London's total emissions. For Harrow to help deliver London's zero carbon ambitions, it will need to reduce carbon emissions by over 30% from the 2015 level by 2025 and nearly 90% reduction by 2050.

Harrow's main emissions sources are domestic heat and road transport. While Harrow council has limited direct control over these, this Climate Change Strategy identifies key areas and interventions that the Council can take to contribute towards London's emissions reductions targets.

The key improvement areas which are relatively low and medium costs and provide meaningful benefits include; measures that target:

- Energy efficiency improvements in existing buildings,
- Decentralised generation of heat or electricity such as renewables and investment in high quality district heating networks,
- Electric Vehicle charging infrastructure,
- Sustainable planning and development, ensuring new developments are highly efficient and incorporate low carbon heating solutions,
- More efficient waste management

The accompanying Action Plans outline specific high-priority actions that need to be taken to reduce emissions from all sources in order to meet the council's objectives for a cleaner and greener borough and to support London's overall zero carbon target.

1.0 Introduction – Climate Change

1.1 What is Climate Change?

Climate change is a global issue and tackling global warming is the biggest challenge facing the world today.

Climate change is happening because of an increase in greenhouse gases – predominantly carbon dioxide – caused by human activity, such as the burning of fossil fuels, deforestation and reliance on landfill. The greenhouse effect occurs when gases trap the sun's energy and warm the planet. The main gas which causes this effect is carbon dioxide, (CO₂).

Using fossil fuels is unsustainable as they are finite resources and will eventually run out. Burning fossil fuels releases carbon dioxide into the atmosphere and this is a significant driver behind climate change. Economically, fossil fuels such as oil and gas will also increase in price as world demand increases and capacity either lags behind or falls. Changes in the way we source energy are therefore inevitable and we also need to prepare for a future where fossil fuel is expensive and its use restricted.

2.0 Impacts of Climate Change

2.1 The Impacts

It is now accepted that if we do not address this issue, the Earth's climate will change significantly, resulting in adverse changes locally and globally.

Mitigation

Mitigation of climate change is those actions which reduce fossil fuel emissions and thereby reduce the overall impact we have on the environment. A significant part of this Strategy deals with mitigation. I.e. improving thermal insulation of our buildings, their space heating and domestic hot water controls and invest in renewables.

Adaptation

Climate change is already happening. These following effects are expected to increase in severity despite our efforts at mitigation,

- An increase in the risk of flooding and erosion
- Increased demand for summer cooling
- Air quality impact
- Greater pressure on drainage systems
- Increased likelihood of winter storm damage
- Summer water shortages and low stream flows
- Loss of habitat for wildlife / changes to wildlife and biodiversity
- A range of health issues associated with temperature changes

2.2 Global Climate Change Agreements

Greenhouse gas emissions have global consequences, regardless of where they come from. Internationally, targets and frameworks have been established to tackle the issue starting with the United Nations Framework Convention on Climate Change (UNFCCC) in 1994. Next the Kyoto protocol, was agreed in 1997 and came into force in 2005. This was an important step forward in the effort to tackle global warming because it included binding, quantified objectives for limiting and reducing Greenhouse Gas GHG - emissions, with each country assigned a reduction target, according to its level of industrialisation.

In the World climate change conference held in Paris¹ 195 countries adopted the first-ever universal, legally binding global deal. The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2 °C.

2.3 Reference to London Policy

According to the Met Office, nine of the 10 hottest years, and four of the six wettest years, in south-east England since records began in 1910 have occurred from 2000 onwards. This means the risks to London from heat waves and flooding, in particular, are increasing².

2.3.1 London Policy

The Mayor's London Environment Strategy was published on 31 May 2018. The strategy aims for London to be a zero carbon city by 2050. London's green house gas emissions are around 38 megatons today. This strategy establishes some key aims for London to meet the ambitious target of fully decarbonise London, underpinned by three high-level objectives:

- Decarbonise London's homes and work places while protecting the most Vulnerable by tackling fuel poverty
- develop clean and smart, integrated energy systems using local and renewable energy resources
- Deliver a zero emission transport network by 2050

The new strategy brings together approaches to main aspect of London's environment, integrating the following areas:

Climate change mitigation and energy - London will be a zero carbon city by 2050, with energy efficient buildings, clean transport, green energy, reducing waste and tackling climate change.

¹ - (http://ec.europa.eu/clima/policies/international/negotiations/paris_paris_en)

² - The London School of Economics – Grantham Research Institute on Climate Change – 23 July 2015

Waste - 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. A tougher food waste target, with plans to cut food waste by 50 per cent per person by 2030

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.

Low carbon circular economy - It aims to deliver the benefits to London and its cluster partners by tackling the challenges of climate change and supporting the development of London's low carbon circular economy.

Air quality - The transport system will become zero emission through reduced car dependency and the use of new clean technologies. London's transport system will be 'zero emission' by 2050, aiming to make all taxis and private hire vehicles 'zero emission capable' by 2033 and buses by 2037. This will include delivering central London and town centre zero emission zones from 2025, creating a zero emission zone in inner London by 2040 and a London-wide zone by 2050.

Green infrastructure - The strategy supports London's critical infrastructure and services to be better prepared for flooding, drought and extreme heat, using the latest data to identify where better planning is needed.

Noise Pollution: Londoners' quality of life will be improved by reducing the number of people adversely affected by noise and promoting

London emission target

Under the plan London will adopt its own version of carbon budgets to help keep the city on target to de-carbonise by 2050. The first aims for a 40 per cent reduction in CO2 emissions from 1990 levels between 2018 and 2022. This is compliant with the Paris climate agreement to limit global climate change to 1.5 degrees.

Mayor of London's funding opportunities

The Mayor's Energy Efficiency funding initiatives offers a wide range of funding options mainly for public-sector organisations and small businesses that want to install energy-efficiency measures, but often can't access the necessary finance.

Some of these funding opportunities include:

- **Energy efficiency fund:** £500m

To help public sector organisations and small businesses invest in low carbon measures such as, electric vehicle, battery storage, charging infrastructure and small-scale renewable energy generation.

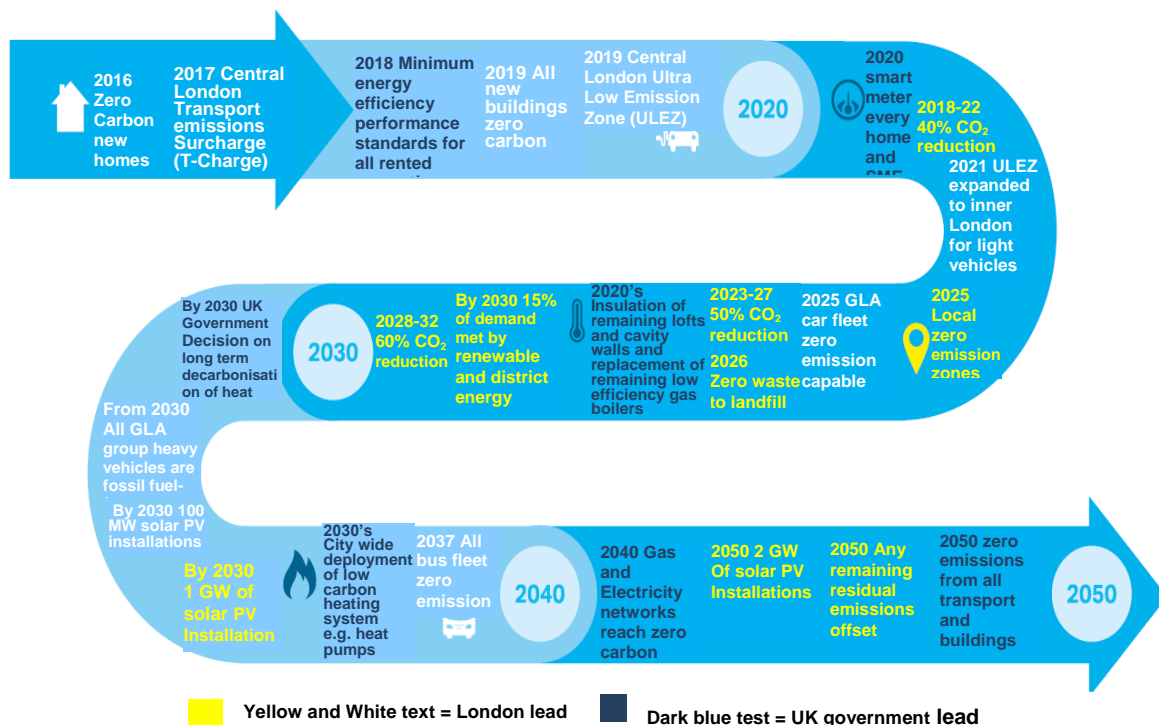
- **Energy for Londoners scheme:** £34m.

Free boilers & home insulation, heating controls etc. offered to home owners struggling with fuel bills.

- **Greener City Fund:** £12 million which includes,
 - a) Strategic green infrastructure projects: £3 million to major projects
 - b) London's urban forest: £3 million, including £1.5 million to help create new woodlands
 - c) Community engagement: £1 million
- **Boiler scrappage scheme:** £10m for small businesses (30 and 40% cashback on new clean heating systems)
- **Better Boiler Scheme:** to help Londoners living in fuel poverty
- **Solar Together London (pilot):** Frame work contract agreement, which offers competitive prices for the private sector

The figure below from the Mayor's London strategy shows what is needed to put London on track to zero carbon by 2050

London on track to zero carbon by 2050



Yellow and White text = London lead Dark blue text = UK government lead

Sours: Mayor of London's new Environmental Strategy - May 31, 2018

2.3.2 National Policy

The Climate Change Act of 2008³ legally obliges the UK government to reduce carbon levels from 1990 levels, by 80% by 2050 with an interim target of a 57% reduction by 2032. It sets legally-binding 'carbon budgets' capping the amount of greenhouse gases emitted in the UK over a five-year period.

Following the Paris Climate Change Agreement and the vote to leave the EU, the government doesn't seem to have an immediate review on its existing commitment. The Committee on Climate Change (CCC)⁴ in its Carbon Budgets Progress Report (2016) recommended that "The vote to leave the EU does not alter UK's commitments – nor does it change the risk that climate change poses". Therefore we are not expecting an immediate change to the government existing climate change policy.

2.3.3 Policy context

The council signed the Nottingham Declaration⁵ in 25 July 2007. By signing it the Council acknowledged "that evidence shows that climate change is occurring and that it will continue to have far reaching effects on the UK's people and places, economy, society and environment." We signed the Climate Local Commitment from the LGA (Local Government Association) in March 2013 using it as an opportunity to reiterate/reinvigorate our existing commitments and the previous climate change action plan.

3. Harrow Council Climate Change Strategy

We as a Local Authority are committed to play our part to meet the challenge to ensure that development is sustainable and the well-being of future generations is safeguarded. This is important to identify the risk and opportunities we face from climate changes and to prioritise the options to manage the risks and opportunities by developing, delivering and monitoring pre-planned actions in a regular basis.

To meet the Council's environmental objectives, we realise the need for a strategic approach that provides a comprehensive response to the environmental impact of climate change and global warming addressed in this report.

3.1 Overview of the Strategy

This strategy sets out Harrow Council's climate strategy and action plan over the period 2019 - 2024, providing a clear framework of action for the council and its partners. The strategy builds on Harrow Council's previous Climate Change action plan 2013⁶ that sets out key priorities and actions by the Council.

The Strategy will identify key improvement areas to reduce our environmental impact and to help us in monitoring and recording our progress. This represents the core

3- www.legislation.gov.uk/ukpga/2008/27/contents

4- www.gov.uk/government/publications/committee-on-climate

5- <http://webarchive.nationalarchives.gov.uk/20100710140341/http://www.energysavingtrust.org.uk/nottingham>

6- London Borough of Harrow Climate Change Strategy April 2013 Onwards

target areas for activity to tackle climate change and the Council's strategic approach to reduce its environmental impact. In addition the strategy will help to raise awareness of key sustainable issues across Harrow and inspire others to take action.

The document is aligned to and responds to the Harrow Core Strategy 2012⁷ long term vision and priorities for the borough. The targets of this strategy are therefore aligned with the local principles of the community plan and of sustainability. In particular issues of climate change and lifestyle have impacts upon Harrow that need to be responded to.

3.2 Harrow Climate Change operation and objectives

The Strategy identifies the need to manage the Borough's action to address climate change by:

- Promoting energy efficiency initiatives and investing in sustainable energy
- Making improvements to transport infrastructure and delivering behaviour change campaigns to encourage more sustainable travel and reduce reliance on private vehicles
- Achieving sustainable design and construction in all new development
- Reducing waste generation and increasing recycling rates
- Directing development away from areas of high flood risk and increasing natural and sustainable drainage; and
- Raising awareness of sustainability and pro-environmental options amongst Harrow residents and businesses

The associated Climate Change Action Plan focuses on a series of actions that outline our aspirations for addressing climate change in Harrow across these delivery areas:

- Energy Management and Operation
- Domestic Energy
- Transport and Air quality
- Planning and Development
- Water and Flooding
- Biodiversity and the Natural Environment
- Waste Management

[7 - Harrow Core Strategy Feb 2012](#)

3.3 The Council's sustainable energy and climate change road map

3.3.1 The Council Foot Print and Carbon Reduction Strategy

The associated Carbon Reduction Strategy is the Council's strategic sustainable energy "Roadmap" that provides a long-term vision of the Council's central role in development of a green, clean and environmentally sustainable borough.

This Strategy will provide a focus for carbon reduction development and applies to all energy use within buildings operated and managed by the Council including Harrow State Schools.

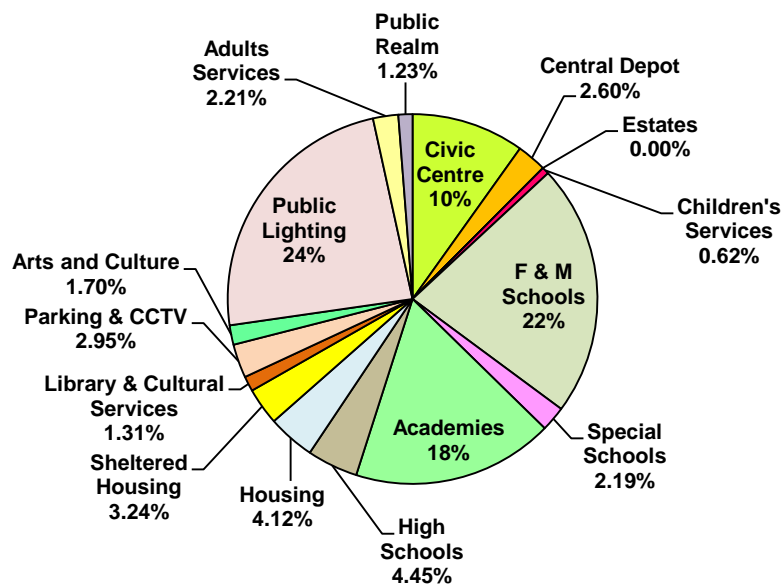
For the Council, the need to adopt a sustainable approach in delivering its carbon reduction objectives is an essential part of its strategic journey towards being a green council. This will include:

- Setting up an investment plan associated with an effective policy for implementation of energy saving measures and upgrading infrastructure of existing old and inefficient heating and hot water pipe distribution systems
- Investment in sustainable and decentralised energy generation locally i.e. Renewables and Heat Network
- Improving the efficiency and performance of Harrow's street lighting

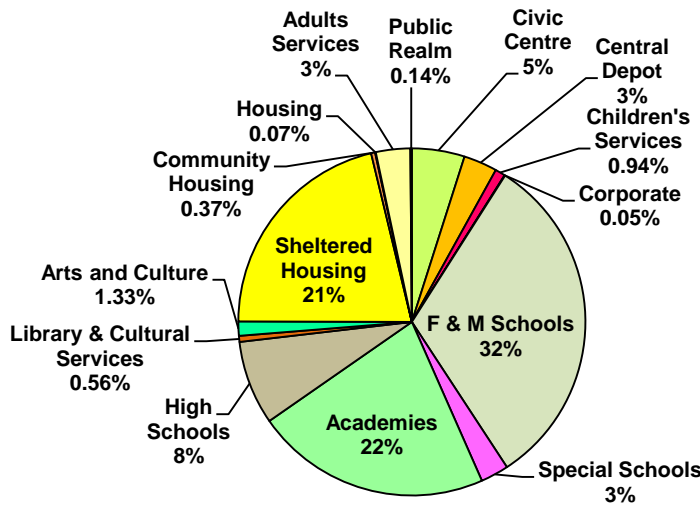
Energy Management Operation

The Council's footprint consists of 20,453.27 tonnes CO2 emissions from 463 sites including 60 state Schools and Academies across the borough. In total for all our corporate buildings including Schools and street lighting our annual energy bills are between £5 million to £5.5 million, depending on the global energy prices, weather condition and our energy saving activities and investments. Harrow Schools share is 46%. The distribution of electricity and gas are shown below.

Distribution of Harrow's Electricity Consumption (%) 2017-18)



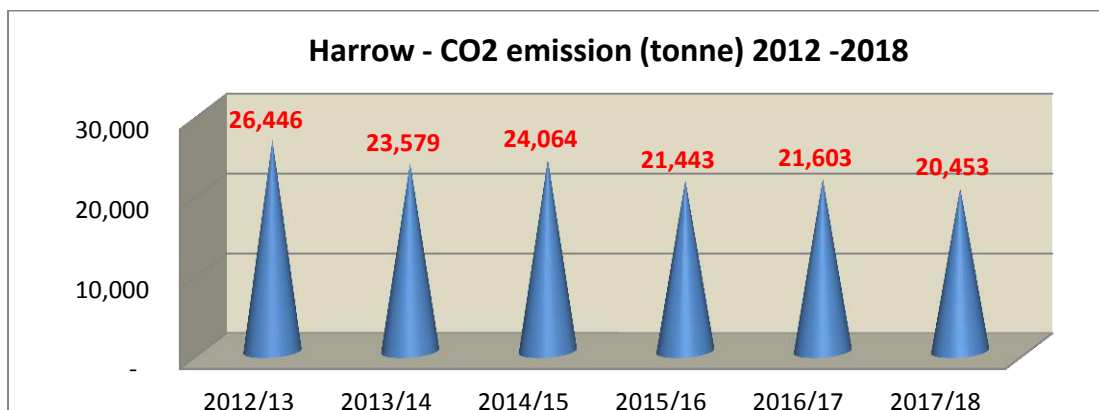
Distribution of Harrow's Gas Consumption (%) 2017-18



As a large energy user, we always try to make effective use of resources and minimise CO2 emissions by reducing energy wastage, improving the efficiency of our buildings and diversifying our energy supply. Harrow state Schools including Academies receive comprehensive energy performance reports including their energy performance and benchmarking in a regular basis. However in terms of energy saving investment and house keeping the council has limited authority to enforce its annual set carbon reduction target to the Schools.

In the past few years about £1.2 m have been invested in improving energy efficiency in corporate buildings and State Schools through various energy saving schemes such as RE:FIT programme. In three phases of RE:FIT in Harrow, 11 Schools and 4 corporate buildings including the Civic Centre benefited significantly from this programme and also the Salix funding opportunities⁸. This has led to a reduction of 1,038 tonnes CO2 emission per annum. Meeting our energy goals could save at least £160,000 on Harrow's overall annual energy bills, which in terms of CO2 emissions would be equivalent to saving 990 tonnes for the same period of time.

Following spreadsheet shows Harrow's CO2 emission/year in the past 6 years.



8 - Salix Finance Ltd. provides interest-free Government funding to the public sector to improve their energy efficiency, reduce carbon emissions and lower energy bills - salixfinance.co.uk

What we aim to do

Our aim is to improve the energy performance and reduce emissions from the council's corporate buildings, estate and schools.

To meet the Council's carbon reduction objectives and our 4% annual carbon footprint set target, we need to deliver consistent improvement in our energy uses and increase our energy saving investment in a way that maximises benefits and minimises costs.

Using modern and innovative technologies to upgrade our existing old and inefficient heating systems, hot water distributions, lighting infrastructures, controls, power plants and investment in sustainable energy generation lies at the heart of our clean and green approach.

Setting up an investment plan associated with an effective policy for implementation of complex energy saving measures is a more sustainable approach than taking a reactive approach in this respect.

Our key areas of the strategic approach to reduce the Council's energy demands are:

- a) Identifying existing energy wastage,
- b) Identifying potential energy efficiency opportunities and investment within the council's corporate buildings, estate and Schools
- c) Monitoring the Council building's energy use and Benchmarking
- d) Encouraging investment in sustainable energy generation locally and low carbon infrastructure.
- e) Improving the energy efficiency of street lighting
- f) Developing an effective energy raising awareness, education and training initiatives to improve the general knowledge of energy end users

Full details of the Council's short, medium and long-term carbon reduction objectives and its sustainable plans have been addressed in further details in the Council's new Carbon Reduction Strategy⁹



New high Efficiency Condensing Boiler – Norbury School



Renewable investment - Solar PV in Stanburn primary School



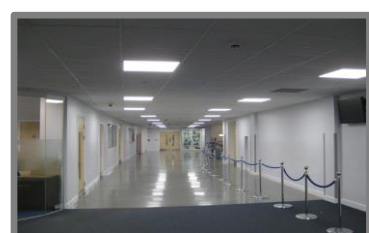
Education and Energy awareness West Lodge primary School



Shaftesbury High School – new LEDs



Whitchurch primary School – new LEDs



Whitmore High School – new LEDs

Investment in sustainable energy generation

Fossil fuels are a finite resource and will run out one day. For this simple reason their prices are expected to keep rising where the risk associated with their security of supply will be higher. Their continued consumption will also make them unavailable for use by future generations. Therefore there are many good reasons for investing in sustainable energy generation locally.

Decentralised generation of heat or electricity is one of the effective sustainable solutions, which can help to minimise our reliance on the fossil fuels. The most typical distributed generation includes heat networks, solar thermal and photovoltaic (PV), heat and air source pumps etc.

- **Heat Network:** District heating is one of the strategic and most effective solutions for reducing our demand for energy and becoming more resource-efficient. As part of the Council's long term climate change objectives, we have identified opportunities to deliver more local generation and generate part of our own energy demands by introducing Distributed Energy Resource (DER) systems locally particularly in the regeneration areas. This will help us to reduce our carbon footprint and to meet the future energy needs of our public buildings, education centres, residents and businesses across the borough in the longer term.

Heat Network activities in Harrow is at the stage where the technical feasibility work has been completed and network serving the Wealdstone area is considered technically feasible. A business case has been commenced and will be progressed subject to the broader Council Regeneration Programmes.

- **Renewables:** Renewable energy is one of the key solutions to help mitigate climate change and reduce the environmental impact of the operation of our services. Due to the environmental and educational benefits of generating renewable energy in our education centres, we assisted a number of Harrow Schools to introduce their first renewable technology. Our existing renewable systems generate about 50,042 KW/pa, green electricity and save over 27 tonnes/pa of carbon emissions, which represents 0.5% of our total annual electricity consumption.

We have been trying to increase our uptake on renewable technologies for which we have had several meetings with Schools governing bodies and solar investors in the past few months. Most Schools have expressed their interest in using this renewable opportunity. Solar installation works in two Schools has been scheduled for Schools February half term. There are currently a range of barriers, which limits our activities and ambitious plans for the installation of solar panels in all Harrow Schools and corporate sites. These include:

- Unsuitability of the present roof conditions for some Schools and corporate sites for installation of solar panels
- Issues relating to the warranties of the new or repaired roofs of a number of Harrow Schools
- Lack of awareness and expertise of decision makers on the saving potential of energy investment opportunities and perceptions of risk
- Uncertainty over the future of the building and whether it will be remodelled etc.

Working with Harrow's State School's:

The Council's Energy Management Team proactively engages with Harrow Schools including Academies and is responsible for managing and reporting the carbon emissions from Schools.

There are significant energy saving opportunities that can be found in most Schools in Harrow. Some Schools are taking active roles in reducing their carbon footprint by adopting some practical energy saving measures and working more closely with the Council's Energy team and some others are less interested.

The Council's annual Green House Gas (GHG) reports in 2018 compared to 2017 show 37/54 Schools in Harrow have had better energy performance in 2018 compared to previous year and 29 Schools have met the Council's 4% annual CO₂ emission reduction target in 2018.

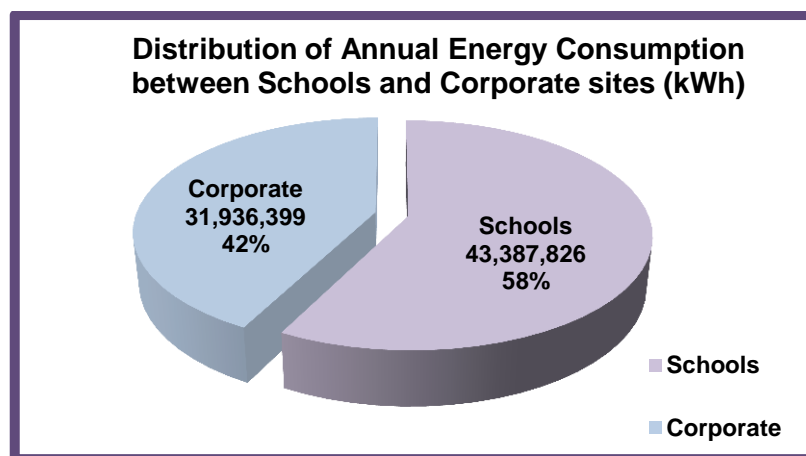
Harrow's public Schools are responsible for over 50% of the Council's total CO₂ emissions (chart below). Therefore the individual Schools are expected to adopt a more proactive approach to minimise their energy wastage and carbon footprint in line with the Council's carbon reduction target and objectives.

Increase in operation hours of Harrow Schools resulted from evening and weekend lettings of their facilities have a significant impact in the council's total foot print.

The Council may need to consider some practical solutions leading to a mutually agreed carbon reduction commitment policy through which all public Schools will be clear about their environmental role and responsibilities.

Reducing energy use has many advantages for schools. It saves money by reducing their energy bills freeing up valuable resources for teaching and learning. It also improves the learning environment, cuts CO₂ emissions and can enhance a school's reputation.

Distribution of energy consumption between schools and corporate sites (kWh)



Impact of Council owned building closures and new build on carbon footprint

Any change to the floor area of existing Council owned buildings will have an impact on the Council's total CO2 foot print depending on the building's occupancy, use, construction type, installations and size. For instance five Libraries in Harrow make up about 1% of the Council's total CO2 foot print of 20,453.27 tonnes.

Harrow Libraries: Gas & Electricity Annual Consumption - kWh's	789,537
Harrow Libraries: Gas & Electricity CO2 (tonnes)	200.899

To that extent closure of libraries will have a 1% reduction in the Council's CO2 footprint.

Harrow Schools expansion programme in 24 Schools in 2016/17 has resulted in an increase of 17,559 sqm to the Schools total floor area, 9% increase in total annual electricity consumption of Harrow Schools and 7% increase in their gas consumption. This amounts to about 3% increase in the Council's total CO2 foot print.



Vaughan Primary School building expansion



Stanmore Library – New LEDs

● Street Lighting

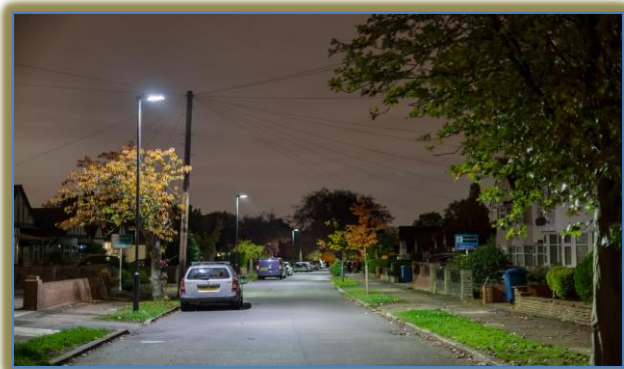
Harrow has a lighting stock of 16,090 street lights and 3,900 various items of illuminated street furniture and is responsible for upgrading the design, installation and maintenance of all street lights, lighting columns and lampposts across the borough.

Street lighting accounts for 8% of the council's overall electricity consumption and 13% of its carbon emissions. To improve the efficiency and performance of Harrow's street lighting, the Council has approved an investment plan to upgrade and replace the borough's old and inefficient street lights with energy efficient and Eco-Friendly LED lighting¹⁰.

The Council has invested up to £3m per annum over the last 4 years to support the upgrading of both the lanterns and the lamp columns. In 2018/ 19 this was reduced to £1.5m and will reduce further to £1m in 2019/ 20 before increasing again to £1.5m in 2020/ 21.

This significant investment in infrastructure has enabled the Authority to improve its existing lighting stock and remove life expired columns and less energy efficient lanterns. Approximately 9200 street lights have already been converted to LED from 2012 to 2018, with annual savings of 11 to 20% in electricity consumption based upon a commencement date of 2012/13.

The Authority has also implemented a Central Management System (CMS), which gives dynamic control over the street lighting infrastructure for future variable lighting options and possible reduction in consumption.



Newly installed Eco – Friendly LED Lighting

¹⁰ . Street Lighting Policy (Cabinet report 2012) www.harrow.gov.uk/www2/documents/s97229/Street

3.3.2 Domestic Energy

As the local lead on home energy conservation and environmental health, we recognise the importance of engaging our residents on issues of energy efficiency and supporting them in making improvements to increase wellbeing as well as reducing CO2 emissions.

Discussions are being undertaken with Housing Division to ensure the resource that has been transferred into that Division is available for the work required on fuel poverty efforts.

Fuel Poverty

According to the latest available data¹¹ about 335,000 low income households in London are facing the high energy costs and can hardly afford to heat their homes.

The Mayor's Fuel Poverty Action Plan for London¹² estimates that the inability to heat homes may have been a contributory factor in up to 4,000 Excess Winter Deaths in London, over a five-year period between 2011 and 2016.

To help eradicate fuel poverty in London, the Mayor has outlined a number of actions including:

- Ensuring Londoners in fuel poverty are able to access fairer energy tariffs by tendering for the delivery of an energy supply company as soon as possible.
- Earmark over £10m over four years (2017/18 – 2020/21) for new energy efficiency delivery programmes (this money will be split between action to drive carbon reduction, and to support fuel poverty reduction). This includes the Mayor's Warmer Homes scheme, launched in January 2018, which will provide heating and insulation and improvements for up to a thousand fuel poor households by 2020
- Provide a Fuel Poverty Support Fund of up to £500k over four years (2017/18 – 2020/21) to support the roll out of local advice and referral networks, including home visiting services, as a way of helping to improve the living conditions of fuel poor households.
- Deliver an energy supply company for London offering Londoners fairer energy tariffs by winter 2019/20
- Implement a programme to help Londoners, particularly the long-term ill and disabled, through ensuring that they are getting access to all of the income support they are entitled to, including Benefits Entitlement Checks

¹¹ - <https://www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics> via https://www.london.gov.uk/sites/default/files/fuel_poverty_action_plan.pdf

¹² - <https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/fuel-poverty-action-plan>

- Target support to households in, or at risk of, fuel poverty, particularly vulnerable households, such as those with long-term illnesses or disabilities, as part of a wider effort to generate whole house retrofit
- Create a new online database of landlords and letting agents who have been convicted of relevant criminal offences, the first phase of which was launched in autumn 2017 Fuel Poverty Action Plan for London 7
- Make available a new open-source pan-London Energy Performance Certificate (EPC) data model in 2018, to help boroughs drive better long-term planning of interventions at a property level
- Provide guidance and support to boroughs

£34m has been allocated towards Energy for Londoners programme¹³ aiming to make London's homes warm, healthy and affordable, its workplaces more energy efficient, and to supply the capital with more local clean energy.

The Council is exploring bids for these funding.

Mayor Action Plan to support Local Authorities

The Mayor's action plan to support Local Authorities include

- Support the rolling out of existing local authority and community advice and referral networks, as a way of helping to improve the living conditions of fuel poor households
- Support local authorities to target enforcement efforts at the worst quality and most inefficient properties in London, through the London Borough Private Rented Sector Partnership
- Support Gas Distribution Networks and other stakeholders to ensure gas connections targets are met in the capital, to support the significant number of homes using expensive electric heating
- Support an effective and inclusive smart meter rollout in London
- Urge and work with clinical commissioners and Health and Wellbeing Boards to implement national public health guidelines on excess winter deaths and cold homes and in improving discharge procedures to address housing conditions
- Improve identification of vulnerable energy and water consumers and ensure that they are aware of support available to them.

What we aim to do

We are very keen to participate in the Mayor of London's plans, which have been set up to help Londoners living in fuel poverty by mobilizing our current resources, which will be needed for delivering the full range of mayoral-backed projects such as: Energy for Londoners scheme, Solar together and Boiler scrappage scheme

13 - <https://www.london.gov.uk/what-we-do/environment/energy/energy-londoners>

Harrow is currently preparing to start working with Local Energy Advice Partnership (LEAP) who is working with Local Authorities to promote the Mayor's initiatives locally.

This programme has been set up to facilitate the funding and implementation of the Energy Leap Project¹⁴ in order to deliver the Mayor's commitment, as part of the Energy for Londoners programme.

We are keen to make best use of the Mayor's initiatives for our residents and fuel-poor home-owners across the borough partly through our community engagement role. With this in mind we intend to take the following action:

- Forming a fuel poverty action group made up from three council's services including Energy management, Housing and Public health, to review key targets and outcomes
- Extend our partnership working with independent domestic energy suppliers to use their experience and expertise to support vulnerable residents in Harrow who are living in cold home
- Launch Warm Homes Campaign in disadvantage areas to support harrow residents who are struggling to heat their homes over the winter period
- Discover which energy saving funding opportunities and loans might be available to help low income residents.
- Providing energy supplier switching and energy efficiency advice.



Deputy Mayor for Environment and Energy launched Energy for Londoners on 31 January 2018



Fuel poverty - Independent – Christopher Furlong /Getty Images

14- <https://www.london.gov.uk/what-we-do/environment/energy/energy-buildings/energy-leap-project-pilots>

Council house sustainable building programme

The council initiated a council house building programme building new homes on underused infill development sites on existing Housing Revenue Account (HRA) land such as garage sites. To date ten new family homes have been completed for rent and two for outright sale, with a further thirteen homes currently under construction – eight for rent and five for sale on a shared ownership basis. Planning permission has also been received for a further 38 new homes for rent. The Council have been awarded grant funding from the GLA to build 618 new council homes in total over the next 4 years.

All new homes have to meet high standards of energy efficiency to reduce CO2 emissions as well as reduce fuel poverty. Larger schemes such as the Grange Farm regeneration project will also provide a Combined Heat and Power plants (CHP) in accordance with London Plan requirements.

Other environmental improvements often included in new housing developments include: provision of green roofs, solar thermal hot water systems to meet the target for use of renewable resources and resulting reduction in CO2 emissions, improved biodiversity as a result of increased tree planting and landscaped communal open spaces, provision of Sustainable Urban Drainage Systems, and green travel plans to encourage use of public transport and walking. Where possible, we will endeavour to recycle demolition material recognising this may be limited due to the construction type of some properties.



John Lamb Court – New special needs flats with solar system and Air source heat pump



Sunflower Mews – affordable houses built to highest energy specs

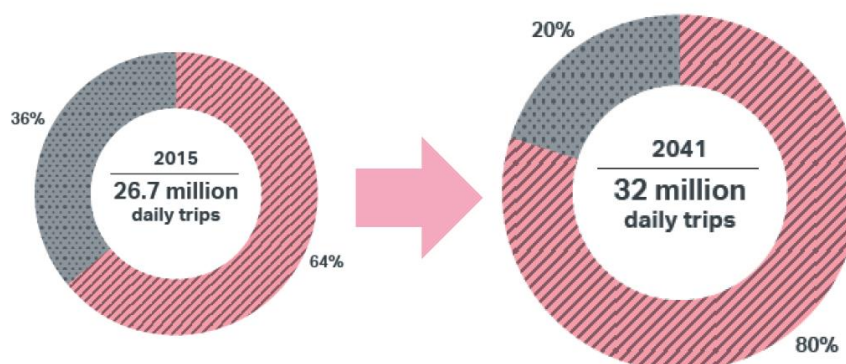
3.3.3 Sustainable Transport and Air quality

The impact of CO2 emissions generated by traffic has a significant impact on climate change, health and the economy. The council is therefore committed to increasing levels of sustainable travel in the borough to reduce emissions.

Transport Local Implementation Plan

Harrow's current local Implementation Plan (LIP2)¹⁵ sets out the need for actions to mitigate the impact of climate change by reducing carbon dioxide emissions from fossil fuel powered vehicles. Harrow's Sustainable Transport Strategy provides details of how the borough will achieve an uptake in the use of more environmentally friendly and sustainable alternative modes of transport.

In 2018 the London Mayor published a new Mayor's Transport Strategy with a focus on delivering "healthy streets" and an ambition to increase the mode share of sustainable transport in London to 80% by 2041. This represents a significant step change from the previous strategy and will accelerate the changes required to mitigate climate change.



Harrow has prepared a new Transport Local implementation Plan 3 to reflect the mayoral priorities and the plan will come into force in 2019/20. It contains all of Harrow's transport objectives and policies for the period up to 2041 and a three year delivery plan (2019/20 – 2021/22). The LIP3 has undergone a Strategic Environmental Assessment (SEA) that has indicated that there are environmental benefits from delivering the Plan that include improved air quality and reducing the affects of climate change. Transport for London provides Harrow with an annual budget to deliver the LIP. The indicative budget for the LIP3 three year programme of delivery is as follows:

<u>Year</u>	<u>Transport programme</u>
2019/20	£1,390.7k
2020/21	£1,390.7k
2021/22	£1,390.7k

¹⁵ - Harrow Transport Local Implementation Plan (LIP2), Harrow Council

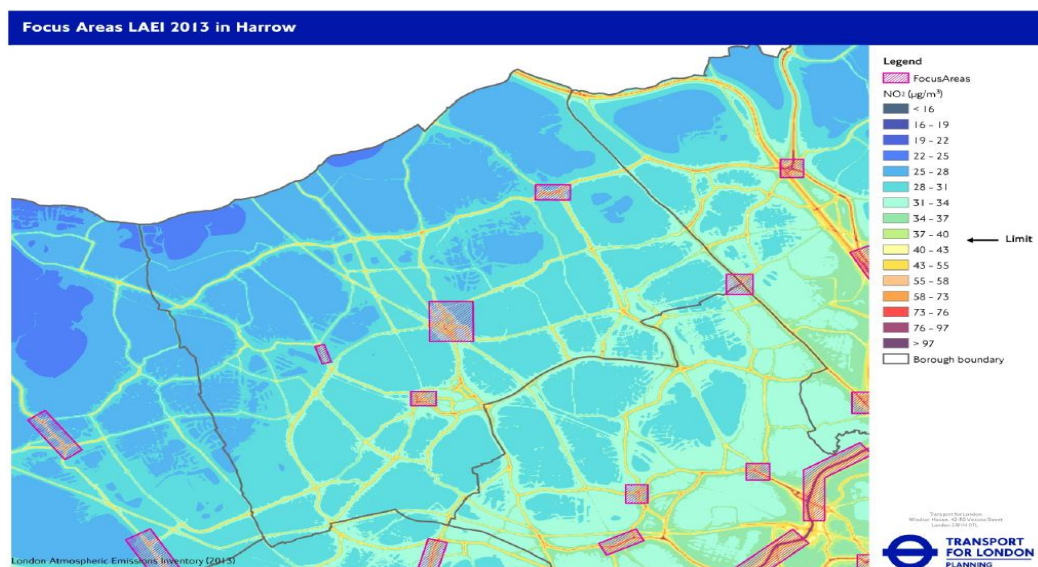
What we aim to do

Our aim is to reduce transport related emissions by encouraging and promoting the use of sustainable modes of transport and discouraging the use of private car and fossil fuel powered vehicles. The main measures we are going to use are:

- Encourage a lower level of private car ownership and usage through the development control process on new development, implementation of parking controls on the highway network and prioritisation of road space for sustainable travel modes.
- Increase the mode share of sustainable and active travel in the borough, particularly walking, cycling and public transport systems.
- Improve transport infrastructure to support more walking and cycling through a “healthy streets” and “liveable neighbourhoods” approach.
- Deliver behaviour change campaigns and develop travel plans with schools, businesses and other organisations to influence sustainable travel behaviour.
- Increase the amount of Schools with accredited Travel Plans using Transport for London’s STARS programme.
- Work with developers to manage travel demand at new developments.
- Improve and widen access to electric vehicle charging infrastructure and encourage the uptake of less polluting vehicles.
- Implement “neighbourhoods of the future” which prioritise electric vehicle usage.
- Develop anti idling initiatives.

Improving Harrow’s Air quality

In 2011 the Greater London Authority (GLA) identified five Air Quality Focus Areas within LB Harrow¹⁶. Air quality focus areas have been selected by the GLA as areas where there is the most potential for improvements in air quality within the Capital. The air quality focus areas can be seen in the plan below.

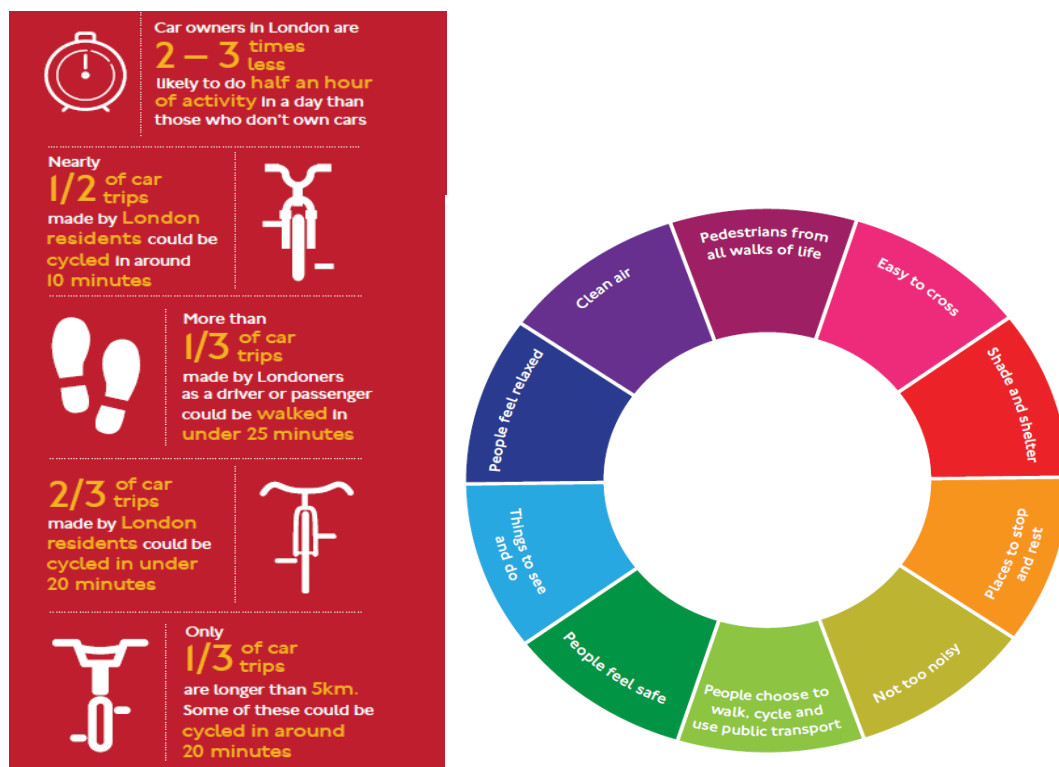


16 - www.london.gov.uk/sites/default/files/air_quality_for_public_health_professio

The improvement of air quality and compliance with national air quality objectives and European Directive limits for the protection of human health are a mayoral priority and these air quality focus areas will be a priority for interventions within LIP3.

Healthy streets and Liveable Neighbourhoods

All physical transport infrastructure being designed need to be assessed against “healthy streets” indicators. This is to ensure that physical infrastructure improvements to the transport network will promote walking, cycling and public transport over the use of private cars in order to support modal shift. This is a key theme in the Mayors transport strategy. The aim is to create the physical conditions that will facilitate and promote a change in travel patterns. The main target areas and switchable trips are set out below:



There is a specific programme of major schemes “liveable neighbourhoods” that supports the healthy streets agenda and allows significant investment in an area to achieve a high impact step change towards sustainable transport particularly walking and cycling. Harrow is committed through LIP3 to submitting bids for liveable neighbourhoods in order to support modal shift.

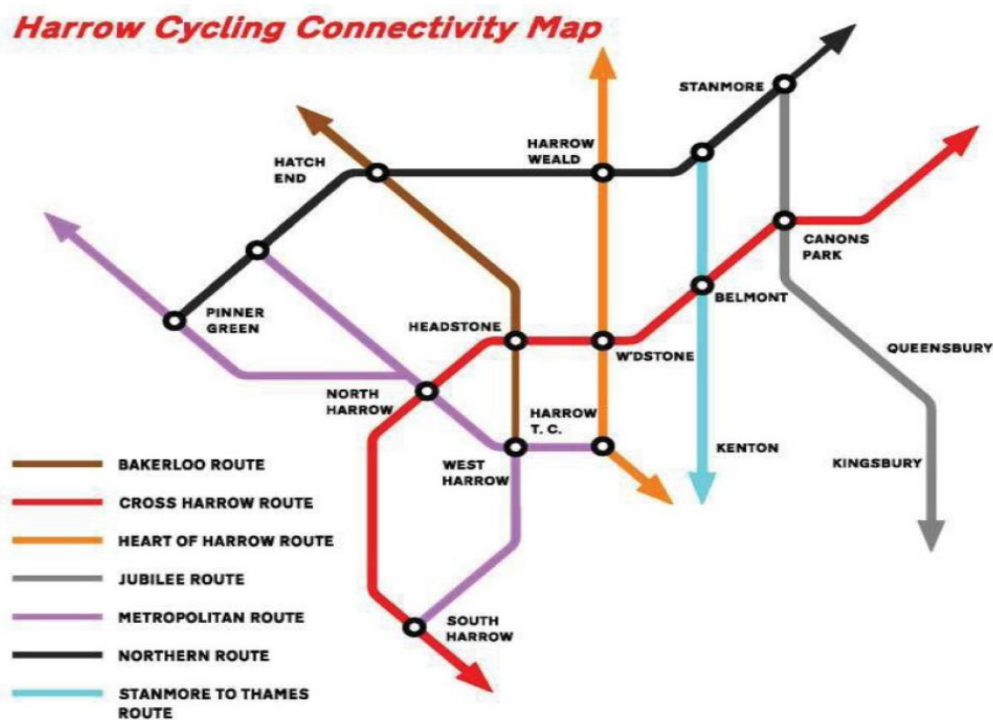
The long term interventions in LIP3 up to 2041 indicate that bids will be developed for the following areas:

- Wealdstone ► Rayners Lane ► Stanmore ► Edgware ► South Harrow

A bid for Wealdstone has been submitted to Transport for London in November 2018.

Cycling

Cycling in Harrow has the weakest mode share but offers the greatest potential to increase the uptake in sustainable transport. Harrow's Cycle Strategy has set out an aspirational cycling network to facilitate cycling between key destinations and transport hubs in the borough which can be seen in the plan below.



Using LIP funding a five year programme of investment has been developed to introduce the different routes on the map as follows:

Year	Route
2017/18	Metropolitan route
2018/19	Jubilee route
2019/20	Heart of Harrow route
2020/21	Bakerloo route
2021/22	Cross Harrow route

Neighbourhoods of the Future (NOF)¹⁷: The introduction of ULEV¹⁸ (Ultra Low Emission Vehicles) initiatives will support the delivery of the Air Quality Action Plan by helping to reduce vehicle emissions from conventional petrol or diesel powered vehicles and encouraging a greater take up of electric or other low emission vehicles. The Mayor of London and Transport for London (TfL) on 20 January 2017, have announced £1.4m funding for six innovative 'Neighbourhoods of the Future'¹⁹ that will combine innovative green technology and other initiatives to tackle London's

17 - <https://www.london.gov.uk/press-releases/mayoral/new-funding-for-london-neighbourhoods>

18 - www.getwestlondon.co.uk/news/west-london-news/new-funding-improve-air-quality-12492729 and www.london.gov.uk/sites/default/files/air_quality_for_public_health_professionals_-_lb_harrow.pdf

19 - <https://www.london.gov.uk/press-releases/mayoral/new-funding-for-london-neighbourhoods>

air quality emergency directly at a local level. The funding should be matched by £1.1m from the London boroughs involved and Heathrow airport.

Harrow Council was successful in securing funding to establish a NoF in Harrow Town Centre. Harrow Town Centre has been identified as an air quality focus area in main commercial shopping centre within the town centre and the borough as a whole which is home to several major high street stores and attracts local residents and visitors from a wide catchment. There are 4 main elements to the NOF which are:

- Installing 5 charge points in Harrow Town Centre
- Funding local mechanics to train in Electric Vehicle maintenance
- Electric Vehicle Fleet Trials for businesses in Harrow Town Centre
- Develop a zero emissions zone

Anti-idling campaign

Harrow council will continue to tackle idling, particularly outside schools. 3 anti idling events are planned in 2018 and 2019 to encourage parents/carers not to idle with their engines running.

The council will discourage unnecessary idling by taxis, coaches and other vehicles through the implementation of an anti-idling Traffic Management Order in 2019 and undertake targeted enforcement activity at key locations such as taxi ranks, coach parking and outside schools.

School Travel Plans

School Travel Plans (STPs) look at ways to encourage healthy, sustainable journeys to and from school. STPs are written and developed in consultation with the school community and focus on the needs of the school in relation to road safety and increasing the amount of sustainable journeys to and from school.

STARS (Sustainable Travel: Active Responsible Safe) is an accredited programme facilitated by Transport for London, which aims to reward schools for their accomplishments in decreasing car journeys to school. Schools are awarded a bronze, silver or Gold award, depending on how the outcome of an annual survey.



EV Charging point – Harrow Civic centre Electric Vehicle charging points in Greenhill Way Car Park

3.3.4 Planning and Development

Planning and Development – Harrow Local Plan²⁰

The Harrow Local Plan is used to assess development proposals (new and existing) within the borough. It has sustainable development at its heart and includes a wide-range of policies related to climate change (mitigation and adaptation), including the protection of habitats, biodiversity and open space / recreational opportunities, avoiding flood prone areas and protecting flood plains and waterways, reducing the need to travel by directing new development to areas with access to existing and proposed community infrastructure and services, promoting sustainable forms of transport, requiring buildings to be built to high environmental standards (including energy efficiency to reduce carbon emissions) and the promotion of low-carbon (i.e. district heating) and renewable energy sources.

Whilst it is important to improve the efficiency of the existing stock of buildings, we also need to ensure that new buildings and developments make the best use of resources and materials and seek to minimise their impact on the environment.

Our planning powers enable us to determine how and where buildings are built in the borough and to ensure that any new development takes sufficient account of its environmental impact.

Well-designed buildings not only minimise their impact on the environment, but also produce a range of wider benefits:

- Lower energy bills and cheaper running costs
- Improved connections to public transport and services
- Addressing overheating
- Fewer emissions and air pollutants
- Better sound insulation

What we aim to do

Sustainable planning isn't just limited to the design and build of the development itself, but also considers the wider scope of the proposal. This includes how the site will support sustainable lifestyles for the people that live, work or use them. Harrow's planning policies and activities therefore consider a wide range of sustainable elements.

As the local planning authority we will aim to ensure that new developments limit their impact on the environment by continuing to develop, implement and enforce sustainable planning practices across the Borough.

New development also needs to respond to the potential impacts of climate change. We will continue to ensure that new developments in the borough take into account

²⁰ . [Planning and Development – Harrow Local Plan](#)

increased flood risk, do not themselves increase this risk and uses appropriate sustainable drainage systems, where required. We will also ensure that new buildings reduce the risk of overheating through passive ventilation methods.

Through the London Plan, all new residential development in the borough needs to be zero carbon, with at least 35% carbon reductions being achieved on-site and any remaining carbon emissions off-set through a monetary contribution to the Harrow Carbon Offset Fund. We will use the Carbon Offset Fund to reduce carbon emissions elsewhere in the borough, such as through energy efficiency measures in existing buildings, district heat networks and renewable energy.



Harrow Council's proposed New Civic Centre in Wealdstone



Hyde/Som Scheme – Harrow

3.3.5 Natural Environment and Biodiversity

Action Plan (BAP)²¹

The Action plan outlines how Harrow Council together with its partners will work to conserve, enhance and promote biodiversity in Harrow from 2015 to 2020. Water and wildlife are intrinsically linked particularly in the urban environment this relationship will become increasingly strained/dynamic with climate change.

Biodiversity underpins the vital benefits we get from the natural environment, contributes to our economy, our health and wellbeing and in tackling climate change. However, globally biodiversity is in decline and is at increased risk of extinction with each rise in global mean temperatures.

Tree cover, as opposed to simply tree numbers, will become increasingly important as climate change progresses. As well as converting CO2 emissions into oxygen, trees will be a valuable resource in the UK as the climate warms providing shade for buildings in summer, shelter in winter, and will help absorb water during heavy downpours. However, as the climate changes Harrow will see changes in the natural environment that place many natural habitats at risk. The need to protect, preserve and manage natural open and green spaces sustainably is therefore greater than ever. We will use the powers available to us to protect and develop such spaces across the borough. Part of this programme will involve the replacement of inappropriate trees and plants with more suitable species for the location.

How do we get biodiversity gain in Harrow

Net biodiversity gain will be secured through new development. This will be done either on-site (by enhancing the biodiversity value of a site as part of the development) or where this is not practical, through biodiversity offsetting, which will secure funding to enhance biodiversity elsewhere in the borough. Net gain for biodiversity will be required as part of the London Plan and the Government's Twenty-Five Year Plan for the Environment. The Council's Biodiversity Officer is currently preparing a business case to establish a biodiversity offsetting mechanism ('Net Gains for Harrow' – NG4H) to secure such gains / external funding.

What we are aiming to do

We recognise the importance of good quality local greenspace – both for the social and environmental benefits that it delivers. We will look to use the natural environment as a way of tackling climate change and ensure that we maintain and protect it from the negative impacts of a changing climate. Through our environmental management activities and partnership working, we will aim to enhance and protect the natural environment in Harrow.

We have a **Green Grid program** that looks to improve the connectivity of the Borough's open spaces for the benefit of people and wildlife, including working with local community groups.

²¹ - Harrow's Biodiversity Action Plan (BAP), 2015

The aim of the Green Grid is to create a network of interlinked, multi-functional and high quality open spaces that connect with town centres, public transport, open countryside and where people live and work. The objectives are in synergy with the objectives of the All London Green Grid and Harrow's strategic objectives, as expressed in the Harrow Local Plan and Biodiversity Action Plan. The objectives are to improve and enhance the following:

- Access to Open Space
- Biodiversity and Access to Nature
- Managing Flood Risk and Urban Heat
- Making Sustainable Travel Connections
- Healthy Communities
- Skills and Training
- Heritage

The overall objective of the Harrow Green Grid is to provide mitigation to offset the impacts of the Borough's continued growth, in particular, community concerns that as a result of the need for further housing, Harrow will become a 'concrete jungle'.

These spaces include the Borough's river catchments which are a geological feature we aim to work using soft engineering solutions where possible. This can be achieved by developments integrating works into our own work programs. Native planting on SUDs (Sustainable Urban Drainage) should be used as first priority. Invasive species of fauna and flora should be eradicated, to avoid their further spread.

We understand the need to manage open spaces sustainably. We will therefore look to make use of sustainable practices in the management of greenspace in the borough through the use of more sustainable transport modes and vehicles where possible, using recycled materials for capital works, and using recycled water to irrigate bowling greens in a number of parks.

In addition, we will explore the use of green roofs on council buildings and will move to a more sustainable approach to planting. We incorporate green waste bays into parks to recycle green waste easily and also promote cycling and walking across the borough, along with the promotion of people using allotments to grow food for them and their families. Consistent with emerging national and regional policy, we will seek net biodiversity gain on new development sites and where this cannot be achieved, secure monetary contributions to enhance biodiversity elsewhere in the borough.



Belmont Trail (The Rattler) – Local Wildlife Site

3.3.6 Sustainable Resource Management Waste Management Strategy²²

The Strategy identifies how we will meet the aims of the new national waste strategy through an integrated set of policies, plans and a flexible mix of solutions to reduce waste growth, manage waste sustainability, divert waste from landfill, meet recycling targets, deliver value for money and retain flexibility. The Strategy will enable us to plan our actions in reasonable time frames and allow long-term consideration of schemes.

Managing and using resources efficiently is an essential part of tackling climate change because of the greenhouse gases that are emitted as a result of their production, procurement, use and disposal. Resources may be defined as materials or assets that are used within Harrow to produce a benefit. This can include: natural materials, products, food, water and waste

Climate change is likely to intensify the water cycle, reinforcing existing patterns of water scarcity and abundance. One effect of this change could be a reduction in summer rainfall, especially in the South and East of England. On the whole, the amount of rain that we receive in London and the South-East has decreased over the last few years and this trend is forecast to continue into the future. This will increase the pressure on natural resources such as water, and potentially increase competition for their use in the future.

How we use and dispose of resources can also have a long lasting impact on the environment.

What we aim to do

Natural resources are precious and must be managed in a sustainable and efficient way. As a large organisation we recognise that we can have a large impact on natural resources through the decisions we make when purchasing resources and how we use them on a daily basis. As such, we have sought to reduce waste, increase recycling and manage natural resources more effectively and aspire to procure sustainably where possible.

How we choose to purchase and procure resources can have impacts beyond the resource itself. Locally grown and sourced resources often have a lower impact than those provided by large scale retailers. As well as helping to sustain local industry and making Harrow less dependent on external food supplies, sourcing more food and goods locally will help to reduce 'food miles', unnecessary cold storage and the resulting CO2 emissions.

We will aim to reduce our ecological footprint through sustainable procurement of the resources we purchase and use in our day-to-day activities. Across the wider borough we will look to encourage, support and influence residents and businesses to reduce waste and use resources more efficiently. This will include the availability of food waste collections across the borough, promoting household composting by

²² - [Harrow Waste Management Strategy](#)

providing cut price compost bins and education programme for primary and secondary schools.



Harrow recycling bins - dailymail.co.uk

3.3.7 Flood Risk Management and Strategy

Harrow Council's Local Flood risk Management Strategy²³ recognises Harrow Council is the Lead Local Flood Authority (LLFA) for the London Borough of Harrow. The LLFA is the statutory body responsible for the management of local flood risk under the Flood and Water Management Act.

The Strategy will meet the Council's objectives for managing local flood risk and making a difference for the vulnerable, local businesses and families in Harrow.

The Strategy outlines the priorities for local flood risk management and provides a delivery plan to manage the risk over the next five years. It identifies roles and responsibilities of other risk management authorities including the Environment Agency and Thames Water, who have responsibility for managing the risk arising from Main Rivers and sewer flooding respectively the council's Local Flood Risk Management Strategy complements and supports the National Strategy.

Flood Management operation

The Council's Infrastructure Team asset manages 67 flood defence structures, 3 reservoirs, one of which is a dry impounding reservoir, 17 flood storage areas, 82kms of watercourse and a number of other water bodies. Other managed assets include 19,509 road drainage gullies, highway drain and kerb drainage systems. Based on the Preliminary Flood Risk Assessment there are approximately 40,051 properties on the Flood Map for Surface Water at risk of flooding to a depth of 0.3 metres in a 1 in 200 (0.5%) chance in any given year rainfall.

²³ - [Harrow's Local Flood Risk Management Strategy, April 2015](#)

What we aim to do

The objectives for the Harrow Council Strategy have been developed in line with the Environment Agency's National Flood and Coastal Erosion Risk Management Strategy for England. Harrow Council's objectives for managing local flood risk are set out below,

- To develop and to improve the understanding of flood risk across the borough;
- To better inform residents and profile flood risk including flood prevention, preparedness, resilience and resistance
- To improve the way in which we provide long term sustainability and flood risk reduction and mitigation through development to ensure the economic prosperity and protection of residents, business and infrastructure
- To encourage residents, businesses and local landowners to take action and contribute to the management and reduction of flood risk
- To be compliant with statutory obligations and to play a positive role to combat climate change and to deal with the impacts of climate change

Over the next five years we will continue to work with communities and businesses to help them understand the potential risks they face from all sources of flooding and what can be done to manage them. The development plan for the Borough and the development management process will ensure that development across Harrow both on existing built sites and new buildings; will address considerations of flood risk and sustainable drainage. We will continue to work at a sub-regional and catchment level to address flood risk, such as the joint West London Strategic Flood Risk Assessment²⁴

The Council's Local Flood Risk Management Strategy²⁵ 2016 provides detailed information about the Council's short and long term objectives.



Flash flooding led to North Harrow station being closed

²⁴ - <http://westlondonsfra.london/>

²⁵ - The Council's Local Flood Risk Management Strategy (www.harrow.gov.uk/.../Appx%20-%20LOCAL%20FLOOD%20RISK%20MG) 20 - www.getwestlondon.co.uk/all-about/flooding

3.3.8 Working with Businesses

Harrow Council's Regeneration Strategy and Harrow Ambition Plan have clear objectives to support local businesses, Harrow Metropolitan Town Centre and our district shopping centres. The Council has a key Corporate Priority of "Making a Difference for Business".

Over the last 18 months, we have built on our business support initiatives to help the start up and growth of small businesses.

We believe that supporting Harrow businesses and encouraging local shopping in the town centre and district centres reduces carbon emissions by reducing journey times. Furthermore, the development of local supply chains supports local jobs, reduces commute times, and reduces long logistical supply chains, which consume more energy to transport goods and in turn reduce air quality.

Our work focusses on:

- **Sales:** helping enterprises maximise revenue
- **Space:** providing access to workspace
- **Skills:** developing entrepreneurial expertise and providing access to funds for skills development
- **Support:** providing support to new and growing enterprises

Sales:

- Small businesses can market their offers directly to 90,000 residents through the council's "Harrow Deals" initiative. Residents download an offer and redeem it at a local business. The service is free to small businesses. (Large nationals pay to advertise). 166 businesses have advertised on it; 6617 users have downloaded 9556 vouchers.
- Procurement processes have been improved to ensure contractors state in their tender how they will use local businesses. The use of local suppliers is then measured on a quarterly basis.



Harrow St Ann's commercial centres



Pinner District Centre

3.4 Air Quality and Pollution in Harrow

Air quality and clean air is essential for people's health, the environment and improves living standards. Dealing with impact of air pollution is an important part of Harrow council's priority to ensure that harrow residents are living in a healthy and clean environment.

Poor air quality can affect health at all stages of life. Those most affected are the young and old. In children there is evidence of reduced lung capacity. In old age, a life-time of exposure to air pollution can result in reduced life-expectancy and reduced wellbeing at end of life.

The chemical compounds that lower the air quality are usually referred to as air pollutants. These compounds may be found in the air in two major forms:

- In a gaseous form (as gases),
- In a solid form (as particulate matter suspended in the air).

Air pollution is most often caused by human activities such as fuel burning, vehicle pollution, building work, road dust, industrial work, agriculture, smelting, etc.

Impacts of air pollution

The effects of air pollution involve a large variety of illnesses, starting with the simple irritation of eyes, nose, mouth, throat and headache but potentially more serious illnesses such as strokes, cancer and lung diseases.

It causes more harm than passive smoking. A review by the World Health Organization concludes that long-term exposure to air pollution reduces life expectancy by increasing deaths from lung, heart and circulatory conditions²⁶.

In order to ensure that we undertake our corporate responsibility to tackle impact of air pollution in line with the National and London Air Quality policies the following strategies need to be well understood.

3.4.1 UK government Air quality Strategy

The government published a draft Clean Air Strategy²⁷ in May 2018, which sets a direction for the country's future air quality policies and goals. This strategy currently is under review and will be published by March 2019.

The proposal considers the air pollution as the fourth biggest threat to public health after cancer, obesity and heart disease.

The new strategy which is a key part of the Government 25 Year Environment Plan²⁸ sets out a number of measures to improve the air quality across the UK including:

²⁶ - https://www.london.gov.uk/sites/default/files/osd21_es_executive_summary.pdf (chapter 03)

²⁷ - <https://consult.defra.gov.uk/environmental-quality/clean-air-strategy-consultation/>

²⁸ - <https://www.gov.uk/government/publications/25-year-environment-plan>

- Introducing new primary legislation, which will give local government new powers to improve air quality.
- Introducing new legislation to ensure only the cleanest domestic fuels will be available for sale
- Improving the air quality in 50% of residential areas where concentrations of particulate matter are above the WHO guideline limit of 10 ug/m3 by 2025
- Working with international partners to research and develop new standards for tyres and brakes to enable the government to address toxic non-exhaust emissions of micro plastics from vehicles which can pollute air and water
- Investing into scientific research and innovation strengthening the UK's position as a world leader in clean technology and secure further emissions reductions
- Providing a personal air quality messaging system to inform the public, particularly those who are vulnerable to air pollution, about the air quality forecast, providing clearer information on air pollution episodes and accessible health advice
- Taking concerted action to tackle ammonia from farming through the government new system of public money for public goods.

In addition as part of an ongoing effort to improve the UK's air quality, Sales of new petrol and diesel cars will be banned from 2040. The goal is that by 2050, almost every car or van using UK roads should be emissions-free.

The government's plan requires local councils to reduce vehicle emissions in their area, using a range of measures such as: Changing road layouts at congestion and air pollution pinch points, encouraging people to buy electric vehicles, encouraging the use of public transport and investing in new low-emission buses.

3.4.2 Air quality in London

As reported in the Mayor of London's new environment strategy²⁹, emissions which cause climate change are reducing. The city is well-defended against the worst forms of flooding. But London also faces a range of environmental challenges that threaten the future of the city.

The quality of London's air is dangerously and illegally poor. Over 9,000 Londoners lives end sooner than they should each year because of air pollution and around 20 per cent of primary schools are located in parts of London that breach legal air pollution limits.

29 - https://www.london.gov.uk/sites/default/files/london_environment_strategy.pdf

Two pollutants remain a specific concern. These are particulate matter (PM₁₀³⁰, PM_{2.5}³¹ and black carbon) and nitrogen dioxide (NO₂). London is failing to meet the legal limit for NO₂.

The report recommends improving London's air quality by undertaking following actions:

- Reducing exposure of Londoners to harmful pollution across London – especially at priority locations like schools – and tackling health inequality
- Achieving legal compliance with UK and EU limits as soon as possible, including by mobilising action from the London boroughs, government and other partners
- Establishing and achieving new, tighter air quality targets for a cleaner London.

Factors affecting air quality in London

London's air quality is mainly affected by the weather, local geography and emissions sources from both within and outside London. Air pollution is often concentrated in underground car parks, tunnels and near petrol stations. Concentrations of pollutants can be greater in valleys than for areas of higher ground. Research has shown that air pollution inside moving cars in heavy traffic is around twice as high as that outside the car.

3.4.3 Air quality in Harrow

In Harrow there are five service areas that are responsible for delivering the council's energy objectives in cutting its green house gases and air pollution.

The council has succeeded to cut its carbon foot print from 26,446 tonne in 2012/13 to 20,453 tonne in 2017/18 in its controlled areas including corporate buildings, street lighting and Schools. We need to extend our green activities in less controlled areas including residential, businesses and road transport by taking smarter approaches such as making use of new technologies and digital services.

The council is currently reviewing the needs for improving the services which are under-resourced such as domestic energy efficiency and air quality services in particular.

To work in line with the Mayor of London new climate change strategy, we are keen to continue our active communications with respective officers in GLA, who are involved in delivering the Mayor of London's environment strategy.

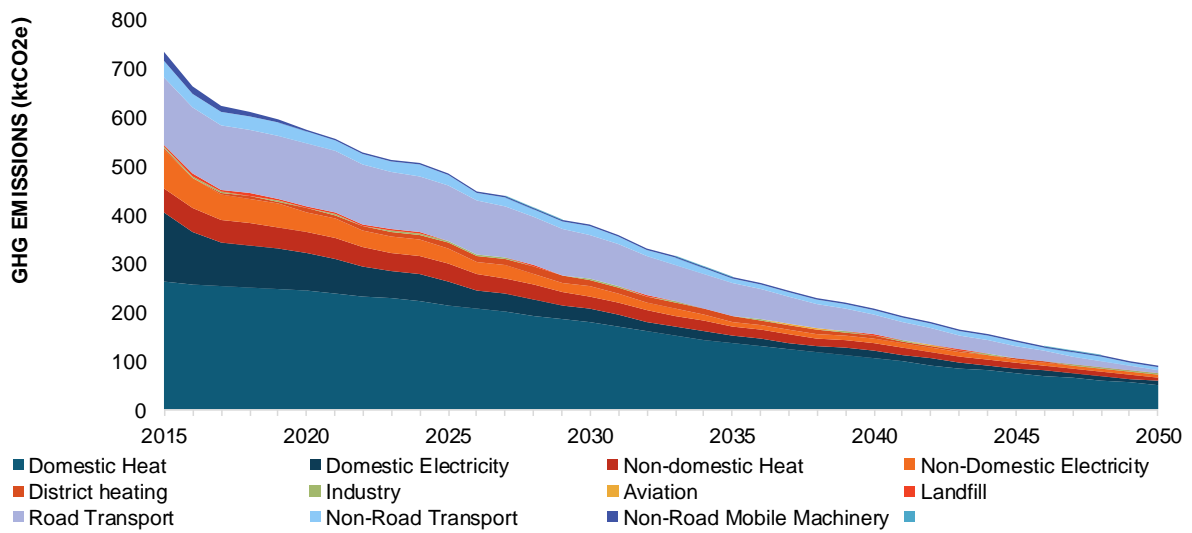
For Harrow to help deliver London's zero carbon ambitions, we will need to reduce carbon emissions by over 30% over 2015 level by 2025 and nearly 90% reduction by 2050³².

³⁰ - Particulate matter (PM) is a complex mix of non-gaseous material of varied chemical composition. It categorised by the size of the particle. PM₁₀ is particles with a diameter of less than ten micrometres (µm)

³¹ - PM 2.5 are fine particulate matter

³² - Recommended by GLA

The figure below shows how Harrow needs to reduce emissions from all sources in order to support London’s overall zero carbon target.



This is an ambitious plan which require all council services involved in the climate change mitigation and adaptation, set their strategy and action plan in accordance with the above working model and work together in a more efficient and systematic manner for the common goal.

4. Risk Management Implications

Lack of investments in climate change activities and adaptation can lead to following risks:

- Decline in Air Quality and develop Harmful Air Pollution across the borough
- A significant increase in the Council's overall energy usage and expenditure
- It is a non-sustainable approach with potential damage to the Council's reputation
- Disruption to the delivery of the Council's carbon reduction statutory requirements
- Unexpected flood risk

5. The Storing and Disclosure of Information

Information collected or recorded in relation to this climate change strategy will be securely retained in a paper and/or electronic format for a period defined by legislation or required for future reference by the council.

Personal data held manually or as computer records will be handled in accordance with the Data Protection Act 1998 (DPA). This information will be used in accordance with the council's DPA registration. Exemptions to this include where information is disclosed to other agencies or used for another reason for the purposes of detecting or preventing crime. This will include the sharing of information between council services and with the police and other enforcement agencies. Sharing of information relating to the Crime and Disorder Act 1998 will be undertaken in accordance with the appropriate information sharing protocol.

Right of access to information held by the council will be given on request, in accordance with the Freedom of Information Act 2000 and Environmental Information regulations 2004 unless the information is already publically available (as described in the council's Publication Scheme). Some exemptions applicable to the council can be found in the Act, Regulations and the council's publication scheme.

6. Monitoring and Review

This strategy will be reviewed within 5 years of its implementation. The review will highlight successes as well as areas for improvement and the effectiveness of the policy against its objectives. Reviews will also seek to introduce where necessary any new powers granted to local authorities in relation to events.

7. Amendments to this Strategy

As may be necessary (for instance with the issuing of new guidance by Government), to amend this strategy. Should such amendments not deviate away from the overall spirit of this strategy, they will be attached through an amendment document rather than the re-issuing of the strategy as a whole.

Any matters of legal ambiguity will be assessed by the council's legal section, prior to it's coming into effect.

Appendix A – Our Commitments, Actions and Targets

The Existing Climate Change Action Plan provides a 5-year roadmap to activate the Council's practical actions in achieving its short and long-term energy saving and demand reduction as well as reduction of its greenhouse gas and emissions.

Our performance against these actions will be monitored and reported regularly on our progress. We will also refresh this list of actions throughout the Plan's lifetime to ensure they are up-to date and reflect local priorities.

Our action plan focuses on a series of practical actions that outline our environmental objectives for addressing climate change in Harrow across the following areas:

An overarching action is to ensure opportunities are explored for external funding. A Climate Change and Energy Manager Working Group will be created relevant officers from the core areas listed below and lead by the Corporate Landlord Facilities Management Function.

The Council's Footprint

Commitment: we will ensure that our buildings and operations are energy efficient and low carbon		
Justification:		
<p>There are several reasons why conserving energy and cutting green house gases are important to us.</p> <p>The Climate Change Act of 2008 legally obliges Local Authorities to reduce carbon levels from 1990 levels, by 80% by 2050 with an interim target of a 57% reduction by 2032.</p> <p>Saving energy not only helps to reduce harmful CO2 emissions but also translates into financial savings.</p> <p>The Council's average utility bills for gas, electricity and water are over £4.5 million pa. This includes schools, housing and street lighting. By reducing the Council's energy demands by 4% a saving of £160,000 - 180,000 pa, can be achieved. This would be equivalent to saving 990 tonnes of emissions a year, which helps improve air quality across the Borough.</p> <p>Energy efficiency is recognised by the council as a major contributor to achieving our climate change target. To do our bit for the environment, we are committed to play a leading role in reducing environmental pollution across the borough and helping the UK meet its carbon targets by putting into practice the following key energy conservation initiatives.</p>		
Specific Action (s)	Measure/ Target	Timescale
Reduce our overall carbon footprint by 4% a year by: a) Targeting buildings that have high energy	Tonnes of carbon emitted under Greenhouse gas GHG annual	Ongoing

<p>footprints and low thermal efficiency and continue to retrofit our buildings to improve their energy performance and reduce their energy consumption.</p> <p>b) Managing our energy demand by monitoring energy consumption of our corporate buildings and Schools in a monthly basis.</p> <p>c) Changing behaviour of the energy end users</p> <p>d) Working with our IT business partner to explore further opportunities for reducing electricity consumption from operation of council IT systems and equipment</p> <p>e) Purchasing green products, goods and services delivered for or on behalf of the Council</p>	<p>reports</p> <p>Annual capital investment – Payback (up to 8 years)</p>	
<p>We will continue to replace our street lighting with energy efficient LED lighting and introduce the energy saving measures agreed following the public consultation in Jan/Feb 2012.</p> <p>Illuminated street furniture will be de-illuminated wherever possible.</p>	<p>Reduced energy consumption of our public lighting (street lighting and illuminated street furniture)</p>	<p>Ongoing</p>
<p>Considering to increase our uptake on renewable technologies and introducing decentralized energy generation I.e. Heat Network</p> <p>Lack of awareness is one of the key barriers to the uptake of renewables</p>	<p>To resolve the financial barriers and setting an annual target I.e. two renewable project per year</p>	<p>Strategic plan – To be reviewed</p>
<p>Complete Display Energy Certificate requirement for all council’s properties including Schools and analysing the results</p>	<p>Meet the requirement – report analyses</p>	
<p>Integrating energy efficiency and renewable energy technologies in the design of the Schools and Council’s new buildings and refurbishment</p>	<p>To achieve BREEAM ‘very good’ standard.</p>	

Domestic Energy

<p>Commitment: We will help Harrow residents to improve their energy performance at home and to heat their homes to an affordable and comfort level.</p>		
<p>Justification:</p> <p>Harrow is home to over 240,000 Londoners. Heating our homes accounts for 66% of carbon emissions in Harrow. This is used for space heating/cooling (54%); hot water (18%); appliances (18%); lighting (5%) and cooking (3%).</p> <p>Developing a suitable plan to encourage our residents to use their energy more efficiently at home, can help reducing CO2 emissions and improving air quality across the borough. This can also help reducing the impact of climate change on communities and improve the health and wellbeing of current and future generations.</p>		
Specific Action (s)	Measure/ Target	Timescale
Submit HECA report to the Secretary of State for Energy and Climate Change.	Annual Report	Yearly
<p>We will bring the benefit of energy efficiency to our residents and help them to understand the environmental impact of their energy use.</p> <p>We will encourage and provide professional energy saving advice to the homeowners and landlords in the borough to improve thermal resistance of their properties by undertaking loft insulation and cavity wall if it's required.</p>	No of Energy raising awareness campaigns	<p>Quarterly</p> <p>Ongoing</p>
We will continue to support our vulnerable residents and help to reduce fuel poverty.	HECA report	Ongoing
We will continue to retrofit our existing social buildings and using new heating, lighting and renewable technologies in designing harrow's new built properties to reduce greenhouse gas emissions.	TBC by housing	TBC

Planning and Development - Low Carbon Pathways

<p>Commitment: We will ensure that we plan for a low-carbon future.</p>		
<p>Justification: Over 50% of all CO2 emissions come from buildings. Core Strategy includes a strategic objective to contribute to a 60% reduction in London's CO2 emissions by 2025.</p>		
Specific Action(s)	Measure/Target	Timescale
<p>All new major development within the Heart of Harrow area to prioritise connection to a decentralised energy network (existing or proposed).</p> <p>Hierarchy is to connect to existing network or if no network is available, to establish a network on site capable of connecting to a broader network if one is implemented.</p>	<p>100% of all major development proposals granted within the Heart of Harrow area to prioritise connection to a decentralised energy network (existing or proposed).</p>	<p>Ongoing</p>
<p>In accordance with the London Plan, Harrow Local Plan, and Infrastructure Delivery Plan, implement an area wide district energy network to be part funded through CIL receipts and any contributions from new development received for carbon offsetting.</p>	<p>Detailed feasibility study completed by end of 2017/18. Progress Outline Business Case, subject to broader Regeneration programme review.</p>	<p>Subject to broader Regeneration review</p>
<p>Through the London Plan, require all new development to be zero carbon and secure carbon offset contributions where this cannot be achieved on-site.</p>	<p>Zero carbon residential development Zero carbon-residential development Update Planning Obligations SPD to formalise carbon offset fund criteria and process</p>	<p>19/20 18/19</p>
<p>Council, through Pre-application procedure, to encourage and support retrofitting of energy efficiency measures and renewable energy generation on/within existing buildings.</p>	<p>Requiring energy measures in existing buildings (particularly householder applications) by way of planning permission is very difficult. We have limited policy support to do this and therefore suggest we limit to major applications (i.e. ten dwellings or more, 1000 sqm of floor space).</p>	<p>Ongoing</p>

Biodiversity

Commitment:

We will ensure that our natural environment is protected from and helps to protect us, from the adverse effects of climate change. We take care to preserve our community's many green spaces and trees, and to protect its biodiversity.

Justification:

Climate change means that the seasonal weather patterns we are familiar with are changing. It is difficult to predict precisely what these changes will be but it seems clear that we will experience milder winters, earlier springs and warmer summers. Periods of drought or low rainfall will become more frequent as will instances of heavy, prolonged rainfall. There is also a significant danger that storms will become more frequent and of higher intensity. All this will have an effect on the natural environment and biodiversity.

Trees in the urban environment have the potential to reduce the heat island effect by providing shade and cooling. However the management of such trees needs to be carefully considered to ensure that they can survive in the sort of conditions that will exist.

Specific Action (s)	Measure/ Target	Timescale
Harrow Council to continue to support and promote Tree Planting programmes	400 trees to be planted per annum on Council property and Highway land	Ongoing
Harrow Council to protect all existing open space, whether public or private from inappropriate development in accordance with the Harrow Local Plan	No net loss in the amount of open space provided within the borough (2012 base year)	Ongoing
Harrow Council's improvements to urban realm to include and integrate green infrastructure from the beginning	Major urban realm improvements to increase the amount of surface area greened by at least 5%	Ongoing
Establish biodiversity offsetting mechanism to ensure biodiversity net-gain on new development sites	Net-gain implemented in accordance with national and regional policies and timeframes Update Planning Obligations SPD to formalise carbon offset fund criteria and process	As per national and regional timeframes 18/19

Waste Management

Commitment:

We will ensure that the way the way we manage our waste minimises the carbon impact of the collection and disposal system

Justification:

The production and management of waste has a significant effect on carbon emissions. We will seek to minimise waste, increase recycling and composting, reduce the land-filling of waste and reduce the overall carbon footprint of our waste management system

Specific Action (s)	Measure/ Target	Timescale
Reduce the carbon footprint of our waste management service	We will use the waste dataflow metric to measure the carbon footprint of our waste management service	Ongoing
Waste minimisation plan – work with the West London Waste authority (WLWA) to encourage residents and businesses to reduce the amount of waste they produce	Total amount of household waste. Household waste per head of population	Ongoing
Waste recycling - We will continue to explore ways in which we can increase recycling of domestic and business waste	Total amount of waste recycled and composted Percentage of waste recycled and composed	Ongoing
Reduce landfill - Work with WLWA to reduce the amount of waste sent to landfill	Total of waste land-filled. Percentage of waste land-filled	Ongoing

Sustainable Transport

Commitment: We will ensure that low carbon forms of transport are supported and encouraged

Justification:

Transport represents almost 22% of all carbon emissions in London – excluding aviation and shipping and is the main cause of air pollution in cities. This is from the following sources: - cars and motorcycles (49%); road freight (23%); ground-based aviation – taxiing etc. (11%); and the remainder is from public transport (trains, the underground, buses and taxis etc. – approx. 4% each).

The long term exposure to air pollution can lead to serious symptoms and conditions affecting human health. This mainly affects the respiratory and inflammatory systems, but can also lead to more serious conditions such as heart disease and cancer.

To meet its statutory duty to manage air quality at the local level and desired outcome for harrow residents the Council intends to deliver following actions.

Specific Actions	Measure Target	Timescales
Deliver the five year programme of investment for the aspirational cycle network	Implement 5 cycle routes	2017 - 2022
Promote liveable neighbourhoods	Prepare LN bids for 5 areas of Harrow	2019 - 2024
Implement Harrow Town Centre Neighbourhoods of the Future Project	Introduce EV charge points, fleet trial, mechanics training and electric street	2020
Provide additional public and residential electric charging points at key locations and consider the provision of rapid charging points to assist taxis, freight vehicles and car clubs	Apply for funding from Office of Low Emission Vehicles	2019 - 2021
Promote anti idling campaigns via the Mayors Air Quality Fund initiative	Reduced Emissions	2019 - 2021
Encourage the use of cleaner and more environmentally friendly vehicles through promotions and campaigns	Improved uptake in ULEV / electric vehicles	Ongoing
Increase the number of schools accredited at Gold through STARS programme	Improved modal shift and associated health benefits	Ongoing

Water and Flooding Climate Resilience

Commitment: We will ensure that flood risks are understood and plans are put in place to mitigate the risks

Justification: Climate changes can affect local flood risk in several ways. Impacts will depend on local conditions and vulnerability. It is essential we respond and adapt to a changing climate by making local decisions against deeper uncertainty and planning ahead.

Climate change is expected to lead to two problems with water supply – periods of drought; and periods of heavy rainfall. Coupled with an anticipated growth in population and the number of households, there is likely to be pressure on the availability of water resources and more incidents of flooding.

Daily water consumption per head is relatively high in Harrow at 170 litres/head of population (cf. the national average of 150 litres/head).

Provision for reduced water consumption will be made progressively for new housing under planning and building regulations but, as with energy use, bringing down consumption in the existing housing stock will prove to be more difficult.

Specific Actions	Measure Target	Timescales
New development to make provision for the installation and management of measures for the efficient use of mains water, with a target of 105 litres of less per person per day.	95% of planning applications approved for new residential development that achieve water use efficiency of 105 litres per person per day or better. % of homes within Harrow that have a water meter	Ongoing but with the ambition over time to reduce the target further to 80ltrs per person per day (subject to required amendment to national housing standards) Ongoing
New developments to incorporate SuDS (Sustainable Drainage Systems) to control the surface water discharge from the site equal to or less than the Green-field run off rate (the rate of discharge for rainfall falling on vegetated land equivalent to the site area) for a storm of a 1 in 100 year intensity with an additional allowance for climate change of 25%-70% depending on site circumstances.	100% of qualifying planning applications achieve green-field run-off rates	Ongoing

Working with Businesses – Action Plan

Commitment: Increase use of local suppliers. Increase footfall and spend in local shopping centres		
Justification: Reduced energy consumption and production of carbon emissions in journey times		
Specific Action(s)	Measure/Target	Timescale
Procurement; enforce Social Value Benefits of contracts with Council.	% spend with local suppliers 15% target	Annual
Provision workspace for local businesses on regeneration sites.	Sqm of workspace created	2020/21
Completion new public square to attract shoppers	Sqm public realm improvements	April 2018
Support business growth and start ups through seminars, workshops, events	Supported 500 businesses	March 2018

Action Plan - Monitoring and review

The Action Plan will be reviewed every 5 years taking into account progress made against each objective by the council's climate change steering group. The annual progress will be reported to the Divisional Director of Commissioning Services, Planning and Housing.

The revised Action Plan will be re-developed by taking into account the corporate priorities and policy changes.