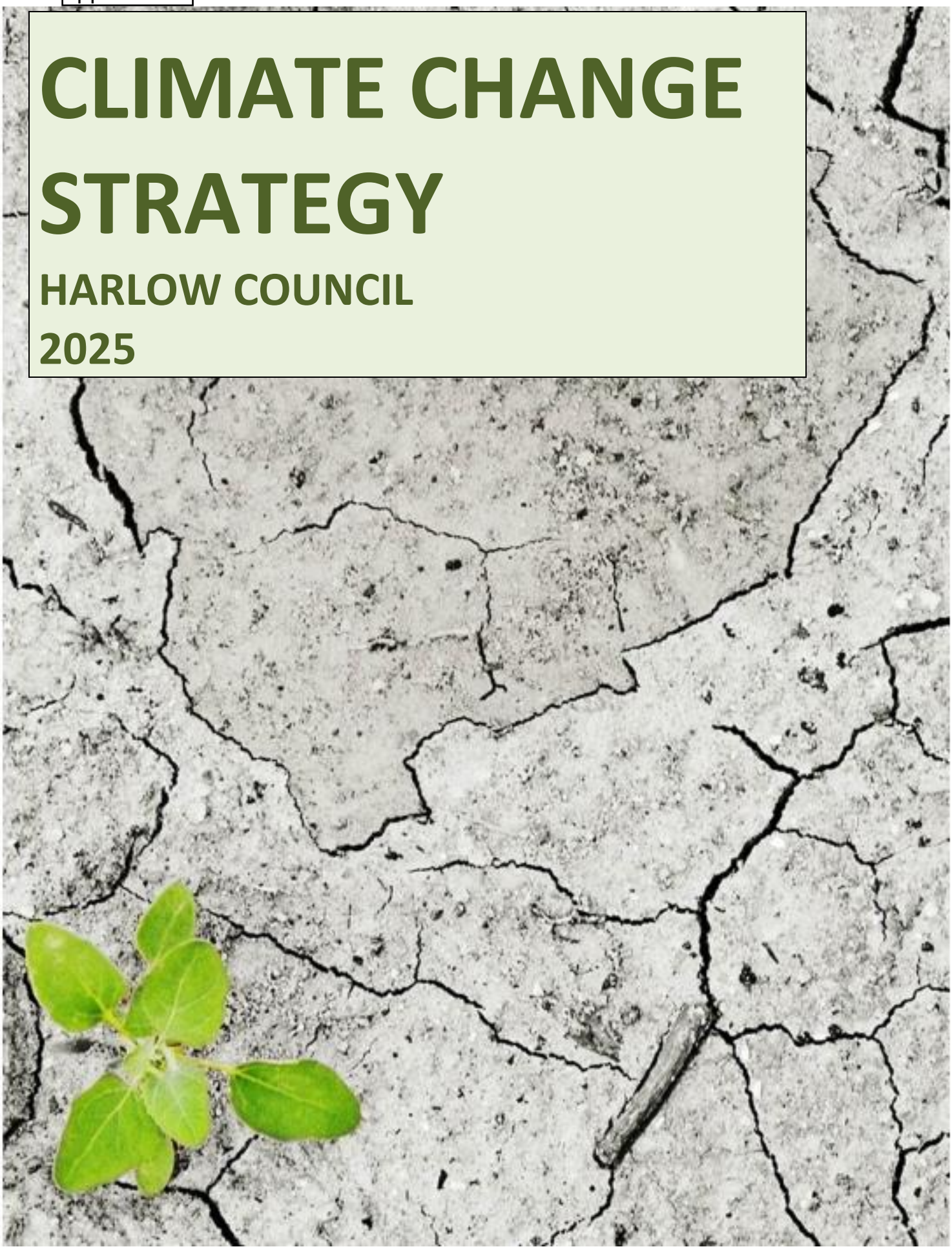
Appendix A

CLIMATE CHANGE STRATEGY

HARLOW COUNCIL

2025



Contents

1. Background

1.1. It is widely accepted that human activity has warmed the atmosphere, ocean and land and that the pace of climate change will bring unacceptable consequences globally. Working towards Net Zero emissions of greenhouse gases is essential. In June 2019, the UK committed to reach Net Zero greenhouse gas emissions by 2050. This is quantified as a reduction of at least 100 percent on the carbon emission levels compared to 1990. This will mean eliminating emissions where practicable, minimising the remainder, and offsetting the residue. National policies will cover activities such as carbon budgeting, investment in green skills and jobs, and engaging citizens to identify and prioritise actions that can be taken to achieve Net Zero.

1.2. Harlow Council passed a Full Council motion in July 2019 declaring a climate change emergency. The motion stated that:

"This Council believes that climate change is one of the most significant threats facing the world. One of the largest factors contributing to climate change is man-made emissions, especially those relating to the use of non-sustainable power sources. This Council recognises that action must be taken quickly to prevent climate change from causing irreversible damage to the planet. It also recognises the numerous social benefits which are brought about by reducing greenhouse gas emissions such as better air quality. This Council believes it is still possible to restore a safe climate and therefore declares a climate emergency."

1.3. Following this declaration, Harlow Council's Cabinet (September 2021) agreed to set a target of achieving Net Zero by 2040, with a commitment to review this on an annual basis and to seek to improve on this target as the development of carbon free technology enables this to happen.

1.4. Without effective action to combat climate change it is clear that Harlow will face increasingly disruptive weather, damaging homes and businesses, flooding streets, poor air quality, and disrupting transport and communications affecting livelihoods; that it will be more difficult and costly to keep homes warm in winter and cool in summer; that food supplies will be disrupted by the effects on agriculture; and that the native species of plants, trees and animals that make up the natural world that we recognise, will not survive.

2. Our Current Position

2.1. Since 2010/11, the Council has been measuring and reducing carbon emissions from its operational activities through three five-year Carbon Management/Reduction Plans. Whilst this has been successful in reducing emissions of the Council's operational assets and fleet by ~40 percent, it does not seek to address the wider carbon emissions of Harlow.

2.2. The Tyndall Centre at the University of Manchester has produced Carbon Budget Reports of recommended climate change commitments for UK local authority areas that are aligned with the commitments in the United Nations Paris Agreement, informed by the latest science on climate change and defined by science-based carbon budget setting. The results in the report show that for Harlow to make its fair contribution to delivering the Paris Agreement's commitment to staying "well below 2°C and pursuing 1.5°C" global temperature rise, then an immediate and rapid programme of decarbonisation is needed. To stay within the recommended carbon budget Harlow will, from 2020 onwards, need to achieve average town wide mitigation rates of CO2 from energy of around -11.9 percent per year. However, this is only one target to aim for and the monitoring chapter sets out various other indicators that the Council will seek to achieve.

2.3. As part of its community leadership role, Harlow Council has developed this broader Climate Change Strategy for the town as a whole. The strategy sets out how Harlow Council can achieve Net Zero through its own operations but also outlines how it will influence the wider community and local economy to deliver quantifiable reductions in emissions for the town. The Climate Change Strategy outlines several actions, identifies aspects that are currently unquantifiable and highlights areas where further support and influence is required to help deliver Net Zero. The Strategy includes a monitoring chapter where a series of measures and indicators are set.

2.4. The Council is committed to taking a strong community leadership role in relation to climate change and achieving Net Zero, influencing and supporting behavioural change among residents, businesses, and partners around their climate impacts through homes, buildings, transport, work food and use of resources.

2.5. The Climate Change Strategy sets out seven key objectives relating to achieving Net Zero Each of the objective chapters sets out short (within 1-3 years or by 2028), medium (within 10 years or by 2035) and long term (by 2040 or beyond) objectives. Some of these objectives include the creation of specific action plans or detailed strategies that will set out detailed measures with their own timings and costs.

2.6. Solutions and measures that reduce carbon emissions and mitigate climate change will continue to evolve and develop and legislation from government will also continue to change. The actions in this document will need to reflect that and therefore the document will be updated, and an action plan will sit alongside it which will be annually monitored.

CLIMATE CHANGE STRATEGY'S SEVEN OBJECTIVES

1. **To achieve Net Zero emissions from the Council's operational buildings, land, vehicles, and services, including those provided by service delivery partners**

2. **To achieve Net Zero emissions from all homes and the built environment within Harlow**

3. **To reduce consumption of resources, reduce waste and increase reuse and recycling in Harlow**

4. **To adopt good stewardship of the natural environment across the town to support both climate change adaptation and mitigation**

5. **To achieve a significant modal shift towards more sustainable means of transport**

6. **To promote reduction of emissions by businesses to Net Zero, supported by a successful green economy**

7. **To lead and encourage local communities, partners and stakeholders to reduce their emissions and contribute positively to meeting the challenges posed by climate change**

3. OBJECTIVE 1

To achieve Net Zero emissions from the Council's operational buildings, land, vehicles, and services, including those provided by service delivery partners

3.1. This objective focuses on the Council's operational buildings and vehicles which it uses for providing services to the public. This includes those provided by delivery partners such as HTS (Property and Environment Limited) who maintains open spaces, play equipment and the Council's housing stock, and other contracts such as refuse collection. This section also looks at improving staff ways of working and how we interact and communicate with residents. Objective 1 looks specifically at operational buildings and services only, whereas Objective 2 investigates how the Council can make its housing stock more efficient.

3.2. It is important that the Council leads the way in mitigating its own operational impact on climate, reducing its carbon footprint and adapting to climate change so that other businesses and residents can follow. The Council is already committed to becoming Net Zero by 2040 and has already taken/is taking measures to achieve this including installation of renewable technologies on Council buildings including solar photovoltaic roof panels (PVs), replacement electric vehicles, installation of LED lighting, replacement boilers and additional tree planting. However, the Council must go further to reach its Net Zero target and fully mitigate its own operational impact on climate change. This includes improvements to the efficiency of buildings, the ways in which staff work and how buildings and operations can be used more effectively, efficiently and sustainably.

Improving the Energy Efficiency of Council Operational Buildings

3.3. It is important that Council owned buildings and properties retain heat and are well insulated, thereby reducing the need to keep heating them. Replacing fossil fuels with low carbon heating, such as replacing gas boilers with air source heat pumps or using thermal energy (from waterways for example), can achieve huge CO_2 reductions. Fabric first measures to buildings are also necessary and should be delivered alongside low carbon heating technologies. This includes triple glazing and insulation which will retain heat and reduce the need to use more energy. It is also important that the energy used to heat buildings is from renewable sources, either on-site or off-site, such as electricity from solar/photovoltaic panels (PVs) especially if the grid (where we get electricity from) is still not fully decarbonised i.e. electricity into the building is still partly from fossil fuels rather than completely from renewable sources. This section sets out proposals for the Council's operational buildings, land and vehicles and services although these principles should apply to all buildings, commercial and domestic, private and public.

3.4. The Council owns seven operational buildings including the Civic Centre, Mead Park Depot and Latton Bush Centre, some of which are easier to retrofit and adapt albeit

with costs involved. However, buildings such as the Harlow Museum which is partly Listed will be more difficult to adapt e.g. replacing windows on an old building. Furthermore, the operations of certain buildings may make installation more complex e.g. ongoing use of the Playhouse.

3.5. ***In the short term, the Council will prepare feasibility studies and decarbonisation surveys for each of its operational buildings*** to assess opportunities to deliver appropriate energy efficiency measures ranging from insulated roofs, window replacements, wall and cladding insulation, insulating pipework, LED lighting installations and energy monitoring. Some of this work has already taken place in some buildings. The feasibility studies will help to prioritise next stages of work across the buildings and identify costs.

3.6. This should not only identify measures to retain heat through the existing fabric, but also look at opportunities to heat buildings through replacement boilers, potentially with heat source pumps and the use of on-site rather than off-site renewables such as PVs. Five of the Council's buildings already have PV panels, and most buildings have had LED lighting installed. The feasibility studies will need to determine whether the existing fabric of the building is able to accommodate existing technology or whether technology needs to advance in order for it to be implemented in that type and size of building.

3.7. In addition to fabric improvements to improve energy efficiency, the potential for roofs to be used as green roofs or bio roofs could be considered, improving the biodiversity and environmental quality of buildings as well as reducing heat demand and trap water. This is subject however to the roof space being utilised or partly utilised for PV.

3.8. When boilers are to be replaced, the Council will consider what options and technologies are available that will reduce as much carbon emissions as possible or find ways to off-set any carbon emissions through other means. It is the Council's ambition, as set out in the ***Council's Carbon Reduction Plan 2021-26, that no fossil fuelled boilers will be fitted into operational buildings after 2025/26. By 2038/39, all boilers in the Council's operational estate will be low carbon. By 2040 the Council will need to be Net Zero so all fabric measures and carbon reducing measures need to be in place across all of the Council's seven operational buildings by this time.*** This is dependent on several factors including available finance, skills required to fit measures, the need to also implement changes to the fabric of buildings to ensure they are efficient (triple glazing, insulation etc) and technologies as the Council's buildings differ in age, style, layout and build.

Community Energy Projects and Estate Renewable Energy

3.9. Community energy projects are being established to provide funding to local communities from selling energy. This could be a potential opportunity for Harlow Council which would see the selling of energy from Council buildings and investing that into community energy projects in order to help support residents. It could also be used to help deliver low carbon infrastructure on Council buildings and other public sector properties. ***The Council will work collaboratively with the community energy sector and Essex County Council to identify potential sites that may be suitable for community energy projects.*** This will boost local engagement and participation in addressing climate change and provide resources for community energy to deliver additional benefits across the district.

3.10. As part of its ongoing contracts, the Council already has a renewable electricity supply contract in place and has considered past estate renewable generation, but this is subject to financial viability and future maintenance. **The Council will reconsider options for certain estates and car parks for renewable generation** as part of its ongoing contracts which can then potentially support community energy projects**.**

Staff Ways of Working

3.11. The ways in which staff work at the Council, how they travel and what space and energy is used can have an impact on carbon emissions. There is no one size fits all for every role at the Council which is why ***the Council will implement actions identified in its hybrid working policy.*** This will consider supporting roles that can work from home and how this can be done more effectively and efficiently to reduce the need for staff to travel to work such as rotating staff in the office, hotdesking, better and more energy efficient computer equipment and space for hybrid meetings and cloud-based working. The hybrid policy should result in reducing space that needs to be heated and energy required for computer equipment.

3.12. To support the hybrid working policy, ***the Council will also prepare a Green Travel Plan for its staff which will outline actions that will support the use of more sustainable transport modes for both commuting and for Council operations/activities***. In the short term the Council will be ***providing better changing and shower facilities for cyclists and in the future will provide more secure cycle storage. Car sharing schemes will also be developed. In the medium term the Council may consider reducing staff vehicle spaces in the Water Gardens and offering other incentives to staff to use public transport.*** More details on how the Council will implement an improved public transport service across the whole of Harlow can be found within Objective 5 of this Strategy and the Harlow and Gilston Garden Town's Transport Strategy.

3.13. The Council will ***implement measures that will cut waste and encourage reuse of materials in our offices and places of work*** such as going paperless, use of online subscriptions only, avoiding hard copy letters, reuse of packaging materials, reusing old computer equipment and/or donating equipment and office furniture to residents.

Recycling facilities such as recycling bins are already available.

3.14. The Council will review and make changes to the Council's consultations to utilise the website, online forms and social media in the first instance. In the short term the Council will look at opportunities to create more online forms for residents to use when making payments, submitting information or responses online as well as making documents more interactive. This is already set out in the Council's Community Engagement Strategy 2022/23-2024/25. This refers to delivering social media awareness and raising the campaign on climate change through one-off community engagement events and activities. The Council will consider the use of apps for providing information to residents. The intention is to reduce the amount of paper used by both the Council and residents and the need for people to visit the offices (by car for example).

3.15. ***The Council will set out a series of short- and medium-term actions in an updated Community Engagement Strategy[1]. A separate Communications Strategy will set out what campaigns the Council will run to promote sustainability and carbon reduction*** and although they are related, it sits independently from the Engagement Strategy.

3.16. It will be important for the Council to consider its digital carbon footprint. Digital services are an important element of reducing carbon footprint, but technology can still have an impact through the use of electricity, the number of emails sent, the volume of data we generate that needs to be stored and the disposal of digital equipment. This will need to be carefully factored into the Council's day to day activities and long-term decisions. The Council is already reducing its energy demand by transitioning from desktops to more energy efficient laptops and moving from servers to cloud hosted environments thereby not requiring cooling systems.

3.17. Staff awareness of climate change, sustainability and sustainable choices is also important. This will ensure officers adopt more sustainable ways of working, more sustainable lifestyle choices and have the confidence to support residents when it comes to discussing, supporting and implementing sustainable and carbon reduction measures. ***The aim over the short term is for the Council to support dedicated carbon literate officers/councillors who, either through a certified course or online courses, will have the knowledge, skills and confidence to act to reduce carbon emissions and support the Council in becoming Net Zero. These officers/councillors can pass their knowledge onto other staff members and even residents/organisations with the intention that Harlow Council can become a carbon literate organisation.***

[1] To replace the Council's Community Engagement Strategy 2022/23-2024/25

Maintenance of Green Space and Green Infrastructure

3.18. Harlow Council owns a large majority of the open space and green spaces across the district including most of the Green Wedge network, the Town Park and Parndon Wood. Therefore, it has a lot of control over how a large majority of green space is managed and maintained although this is at a financial cost to the Council. HTS manage these spaces for the Council. The natural environment and the way it is maintained and managed can have a significant impact on climate and helping to reduce carbon emissions as does the equipment and infrastructure used.

3.19. ***In the short term the Council will continue to implement tree planting schemes across the district*** which has already seen over 2,000 trees planted across Harlow already. The Council is also preparing a new planting schedule in the short term and implementing a maintenance and management programme for newly planted trees to ensure they survive. ***The Council is part of the Essex Forest*** **Error! Bookmark not defined.*Partnership which is delivering the Essex Forest Initiative.*** This has delivered over 400,000 trees across the County and over 51,000 metres of hedgerows and has created more meaningful woodland areas which support carbon sequestration and planting schemes which help create new habitats. Working with Essex County Council, there are longer term projects being developed to help support additional planting and habitat creation including wildlife corridors and woodland extensions.

3.20. New trees, as well as existing trees, will require ongoing maintenance and therefore it is important to have a thorough understanding of trees across the district including age, location, species, possible diseases and potential habitat they provide. The Council is preparing a ***tree strategy that will consider the ongoing maintenance of the town's trees. This work will help the Council understand how trees will be enhanced and protected, what planting is required, the best species for planting and longer-term maintenance and what opportunities there are for trees to help mitigate against climate change.*** The tree strategy will identify medium- and long-term proposals for trees that will have a long term positive effect on meeting our Net Zero goals.

3.21. ***The Council will review its cutting and maintenance regimes for public open spaces and grassed areas and identify how this will be done through a landscape strategy.*** This will identify locations where grass cutting can be reduced, where natural flowers and plants can be allowed to grow and where planting can be located to help pollinators and biodiversity. Longer grass can also aid with water retention. The Council has already committed to identifying more strips for wildflower planting, from four to eight**.** Future tree planting and a review of the current maintenance regime of the green wedges/green fingers will help inform this work. ***This should also identify opportunities for the maintenance of hedging and other planting, especially in residential areas which can have a significant benefit for biodiversity.***

3.22. To help fund planting/landscaping schemes the Council will work with the commercial sector and contractors to sponsor or match fund proposals. Many of the district

roundabouts are already sponsored.

3.23. Along with green spaces and tree planting, the Council will ***work with statutory bodies and interested parties on bringing forward improvements to the town's wetland areas including its ponds*** which can have significant carbon sequestration. The development of actions for these areas will also be developed.

3.24. Through the 2021 Environment Act, the Council is required to comply with the 'biodiversity duty' which ensures the authority considers what it can do conserve and enhance biodiversity, agree specific objectives and deliver those objectives. ***The Council will be complying with the biodiversity duty by publishing its 'first duty' report which will consider what actions could be implemented with a 'first report' on what actions have been delivered by January 2026.*** Furthermore Essex County Council (ECC) have prepared a draft Local Nature Recovery Strategy (LNRS) which was published for consultation in 2024. It sets out locations for the creation of habitat and will be a tool for driving nature recovery action. As part of the LNRS consultation, Harlow Council submitted several sites which would benefit from nature recovery and are to be included in the final version of the document. They are the following: 1) Harlow Woods; 2) Parndon Lock Meadow and Parndon Moat Marsh; 3) River Stort area; 4) Jean McAlpine and Cannons Brook Country Park; 5) Church End Pond; 6) Netteswell Pond Conservation Area; and 7) Latton Common/Harlow Common. ***Harlow Council will work with ECC to deliver actions and projects that enhance the habitat and biodiversity of these LNRS areas.***

Working in partnership with HTS

3.25. The infrastructure used to maintain spaces can also be an important component in reducing carbon emissions as some equipment, including cutting instruments, tractors and the wider HTS fleet of vehicles, will use gas or petrol.

3.26. The Carbon Reduction Plan identifies the potential for HTS to save 12% on carbon during the lifetime of the Plan and HTS have prepared and regularly update their own Climate Strategy. ***The Council will work with HTS to support actions identified in the HTS Climate Change Strategy.*** Actions include energy efficient IT systems and cloud-based working, investing in new sustainable technologies, utilising field management software to reduce journeys and fuel usage, using online forms and where possible replacing vehicles and machinery with electric models or other sustainably fuelled vehicles***.***

3.27. ***A fleet management strategy will be prepared each time there is a new procurement of vehicles.*** This will set out how many new vehicles could be electric/Net Zero including small cars/vans, any larger vehicles and machinery. This will be dependent on the infrastructure, finance and technology available at that time. ***There are currently 12 vehicles that are electric and charging points available at the depot***. An assessment was made on the potential of increasing this but the lack of infrastructure for charging outside of the depot is currently not available i.e. at worker's homes through off-street parking facilities or around Harlow more generally. Carbon off-

setting opportunities will be investigated to mitigate impact until such time as this is viable for the entire fleet. ***HTS are also considering the use of HVO fuel (vegetable oil) to reduce emissions in vehicles.*** Vehicles purchased by Harlow Council (separate from the HTS fleet) will no longer be petrol/diesel). Issues concerning infrastructure for charging will apply to areas around Harlow, not just for HTS workers.

3.28. ***HTS aim to replace any petrol tools with electric tools*** when they are required and when viable to do so***.*** This is dependent on the type of tool being replaced, the technology that is available and how long the tool is being used for at any given time. For example, if a tool is being used all day then battery life plays an important part in deciding what type of tool to purchase. There are also added health benefits of electric tools such as less vibration and noise for the operator.

Waste Collection

3.29. The Councils waste management contract is coming to an end in 2029 and there is opportunity at this point for the Council to implement even more sustainable methods in the way waste is collected as well as measures that increase recycling. This includes ensuring any ***new waste contractor can demonstrate that they are achieving Net Zero through their operations and providing the most efficient and sustainable waste collection service for Harlow.*** For example, this could be done through electric vehicles and even better use of technology. A lot of this is already being done through the current contract. Objective 3 looks into measures to increase recycling, reuse materials and delivering a more circular economy[2] in more detail.

Procurement and Contracts

3.30. The Council procures various contracts for services ranging from delivering specific strategies and documents, building services to larger and longer contracts for maintenance/waste collection. The Council already considers climate change as part of its Procurement Strategy although the details of how this is considered, scored and what information should be provided has not been established. This is due, in the most part, to the individual circumstances for individual contracts although it is already being considered in some contracts, particularly building or regeneration projects.

3.31. ***The Council will review its Procurement Strategy to outline how Climate Change and carbon reduction can be considered as part of its wider procurement framework.*** This may include the need for a specific scoring mechanism for certain contracts or a requirement for longer contracts to submit particular documents to satisfy this requirement. It is the responsibility for all teams at the Council to consider how their

[2] A circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible.

contracts can be sustainable and make specific requests for carbon reducing measures where appropriate. This could be something simple from requesting online meetings and electronic copies of documents, to specific requiring the provision of carbon reduction plans for the longevity of a contract.

Issues and Challenges

3.32. A major issue facing the implementation of these actions will centre around financial constraints, resources and in some instances a lack of expertise and skills for implementation. Several technical documents need to be completed, such as the Green Travel Plan and HTS Fleet Management Strategy, with subsequent actions that will need to be implemented. This requires time and resource to pull together and then deliver and, in some instances, will require a certain level of experience and skill. This is in addition to the day-to-day services the Council already provides. However, it is important that the Council clearly sets out the next steps for its operations so that these can be prioritised, and funding put in place.

3.33. There will also be constraints to delivering some of the actions if the technology or external supply chains are not currently available. For example, there is a lack of technology when it comes to upgrading larger maintenance vehicles to electric. Technologies are also constantly evolving, and the Council must ensure that the decisions it makes are financially viable and sustainable. This may mean that some actions should be delivered over the medium to long term so that technology can mature and be thoroughly tested.

3.34. Some of the Council's operational buildings are also complex to adapt and retrofit and this may add further complication and expense. It is important that feasibility studies are carried out to ascertain the best long-term options for these buildings. Increasing the Council's portfolio of buildings, such as the purchase of town centre buildings, will also increase the Council's emissions if these buildings have poor energy efficiency. Retrofitting additional buildings will be an additional cost that needs to be considered.

3.35. Tracking emissions from some of the actions (like actions set out in some other objectives) will be difficult but will need to be quantifiable if the Council wishes to fully understand it's impact. This includes for example water usage, procurement activities and engagement. This may have the opposite effect of increasing emissions as the Council begins to fully understand the exact impact of some of our activities.

Table 1

Summary of actions for Objective 1

To achieve Net Zero emissions from the Council's operational buildings, land, vehicles, and services, including those provided by service delivery partners

Short term actions	Medium term actions	Long term actions
Prepare feasibility studies for each of its operational buildings	By 2038/39, all boilers in the Council's operational estate will be low carbon.	By 2040 the Council will need to be Net Zero so all fabric measures and carbon reducing measures need to be in place across all the Council's seven operational buildings by this time.
No fossil fuelled boilers will be fitted into operational buildings after 2025/26.	Medium term actions identified from the Green Travel Plan implemented and could include pool cars and public transport incentives	Long term actions identified from the Green Travel Plan implemented
Implement actions contained within the completed hybrid working policy	Actions identified from the hybrid working policy implemented	Long term actions identified in the HTS Net Zero Strategy/Action Plan and fleet management strategy implemented
Prepare a Green Travel Plan	Work with statutory bodies and interested parties on bringing forward improvements to the town's wetland areas	Ensure Council's waste contracts are fully Net Zero in their operation
Provide better changing and shower facilities for cyclists as well as more secure cycle storage	Medium term actions identified in a HTS Net Zero Strategy/Action Plan and fleet management strategy are implemented	Implement any long-term actions identified in the Council's updated Procurement Strategy including the potential for a dedicated officer to review tenders and contracts to ensure they fully consider measures and implications for carbon reduction/climate change

Car sharing schemes will be developed for Council employees	Ensure new waste management strategy takes into consideration Net Zero	Implement longer term actions identified in the tree strategy, landscape strategy and woodland management plan.
Implement measures that will cut waste and encourage reuse/recycle in Council's offices and places of work including measures to reduce water usage	Development of a specific tree strategy and woodland management plan and implementation of short-term actions from the strategy/plan. Implement medium term actions from landscape strategy and tree planting schemes	
Continue to implement tree planting proposals across the district	Implement medium term actions identified in the Council's updated Procurement Strategy including the potential review of scoring mechanisms and submission of carbon reduction plans/climate change strategies.	
Deliver improved habitats in Harlow through the Biodiversity Duty Report and Local Nature Recovery Strategy. This includes publishing the first duty report and first action report for the Biodiversity Duty (Environment Act).		
The Council will prepare a landscape strategy in order to review its cutting and maintenance regimes for public open spaces. This will incorporate an assessment of opportunities in the Green Wedge/Green Finger	Implement measures that will cut waste and encourage reuse of materials in the office and Harlow places of work	
Work with HTS to prepare a strategy setting out how their operations will achieve the Council's target of becoming Net Zero by 2040 and to identify a potential 12% carbon saving during the lifetime of the current Carbon Reduction Plan.	Look at opportunities to deliver Community Energy Projects and renewable energy generation on public land e.g. estates and car parks.	

HTS fleet management strategies prepared with every procurement of new vehicles (implement current purchase of 10 electric vehicles)	HTS to consider the use of alternative fuels in vehicles.	
HTS continue to regularly review and update the Climate Change Strategy and be supported by Council officers.		
No new diesel/petrol vehicles purchased by Harlow Council (not HTS)		
Implement and update the Communications Strategy and Engagement Strategy for the Council and in the short term review the Council's engagement methods		
Update the Council's Procurement Strategy to detail how Climate Change and Carbon Reduction will be assessed and considered		

4. OBJECTIVE 2:

To achieve Net Zero emissions from all homes and the built environment within Harlow

4.1. Emissions from homes is high mostly from the use of gas central heating and poor insulation, which means that heat easily leaks out of homes which then requires even more heating. However it uses other unregulated energy demands such as plugs, computers, cooking and appliances. The average household in the UK emits 2.7 tonnes of CO_2[3] every year from heating their home alone and the aim is to switch to a highly efficient home where all heating needs can be provided by renewable electricity. Decarbonising homes is not only an essential part of tackling climate change, it also saves residents money, helps combat fuel poverty, boosts the economy and creates jobs (through green jobs such as skilled retrofitters). The ways in which future homes are built including the fabric that is used, how it is insulated and ventilated is as important as making existing homes more efficient. The repair, maintenance, and continued use of existing buildings—particularly historic and older structures— will continue to be important. Reusing buildings not only helps to protect heritage and the historic environment but also avoids the significant carbon emissions and waste associated with demolition and new construction.

4.2. The Council has direct control over a quarter of the town's housing stock and with this comes financial implications. The Council also manages the delivery and development of new homes through the planning system and by helping to implement government measures such as new Building Regulation requirements. The Council has little to no control however over existing private homes. It can help to support those wishing to become more energy efficient and save money and show good practise by ensuring its own stock becomes Net Zero.

The Council's Housing Stock

4.3. The 2021 Census shows that there were 37,857 households in Harlow and the Council owns over a quarter of these properties (approximately 9,500). These properties contribute roughly 29% of the total CO_2 emissions across the district.

4.4. A study prepared by the University of Warwick looked at the energy consumption of just under 28,000 properties in Harlow (October 2022) and that this sample broadly represents the stock across the whole town. Of that sample, over 20,000 have improvement potential through such measures as cavity and solid wall insulation, floor, roof and loft insulation, condensing boiler replacements and window replacements. However, there are properties in Harlow that due to their age and structure or historic nature, will be difficult if not impossible to fully retrofit. Around 10% of domestic properties managed by Harlow Council are of non-standard construction where roofs are not structurally sound to withstand PV panels or have no

[3] Emissions Authority (2023)

cavity walls to insulate. These can be challenging and costly to retrofit and often have additional requirements such as structural work that must be carried out. To better inform the assessment of costs for retrofitting and improving the energy efficiency of the Council's housing stock, an asset management system is being implemented. This will help understand what needs to be done, what can be done, the costs of doing the measures and the likely efficiency savings. The Council is already committed to ensuring all council stock complies with the government's Decent Homes Standard which currently only applies to social housing but with the intention this is also rolled out to private rented properties as well. It is committed in the short term to tackling fuel poverty through an energy efficiency programme which will improve thermal insulation and ventilation, install heat metres and refurbish all Council owned communal and district heating systems.

4.5. The speed at which the Council can retrofit its housing stock comes down to finance, ability of some buildings to be retrofitted, the skills available to implement retrofit improvements and maintain such measures and supply chains ability to provide such measures. Harlow's Pathway to Net Zero by 2040 Report, which set out recommendations to reaching Harlow's Net Zero target, suggests that the cost of retrofitting a property is anywhere between £10,000[4] per property and £15,800[5] per property. Although other sources suggest 'shallow' retrofits for an average semi-detached home is £5-£15k which could save 30% in carbon emissions, whereas a 'deep' retrofit including solar PVs and heat pump system could cost between £45-£55k. This level could achieve 80-90% reduction in carbon emissions. ***The Council has undertaken two pilot projects with one remaining, which will retrofit existing properties and help the Council understand the costs, implications, and good practise of retrofitting homes***. As of September 2023, this is averaging at £65,000 per property due to the nature of some of the housing stock in Harlow. The remaining pilot in will retrofit a non-standard property of which there are around 1,200 in the district and may be more complex and costly to improve.

4.6. The Pathway Report referred to above recommends a phased investment in retrofitting the Council's housing stock up to 2040 and that it will be by far the most expensive component of delivering Net Zero for the Council. To assist in delivering a phased approach, the Council will focus firstly on a fabric approach improvement of properties to ensure they are energy efficient otherwise implementing further decarbonisation measures will be meaningless. The following actions will therefore be undertaken:

- ***Ascertain what EPC ratings require updating for the Council's housing stock and undertake a review of the EPC ratings to ascertain the properties with the lowest ratings and therefore energy efficiency***
- ***Focus on the lowest rated properties and implement measures to enable those properties to get to at least EPC Rating C. This may include measures which support the future decarbonisation of homes such as the installation of PV panels which supports on-site renewables. The measures are however subject to the structure of the property, it's location and viability.***

[4] Committee on Climate Change: Low Carbon Heating
[5] Harlow: Pathways Report commissioned by ECC

- ***A strategy for how to improve more complicated and non-standard properties will be required.***
- ***Properties will continue to be retrofitted based on their EPC rating and the availability of funding, resources and skills.***
- ***An action plan will then be developed looking at how to make the Council's housing stock fully Net Zero. The timescales for delivering this will again be dependent on the nature of the housing stock, skills available, funding available including any potential grant money and supply.***

4.7. This will take considerable investment, and ***the Council will use the government-backed Social Housing Retrofit Accelerator, which is a support service to assist social housing providers successfully bid into the government's Social Housing Decarbonisation Fund.*** It will also be important that the Council continues to engage with existing tenants on this program. As of January 2025, there are more EPC rated C and above Council owned properties than there are rated D and below. This shows the Council continues to make good progress in delivering energy efficiency improvements to its housing stock.

4.8. ***New homes built by the Council will be Net Zero wherever feasibly possible or at least have high energy efficient ratings (such as Passivhaus), as well as good air tightness and ventilation. Where viable they will include on-site renewable energy sources such as PVs*.**

Retrofit Skills

4.9. The ability to carry out retrofit is also dependent on the ability of the Council to access the right skills to undertake it. In response to a government commissioned review into Net Zero[6], the Chartered Institute of Housing stated that a lack of skilled staff for retrofitting is the sector's most significant barrier in being able to make homes more energy efficient. This is why the Council worked with Essex County Council and the Retrofit Academy Community Interest Company to upskill 200 people to PAS2035 (UKs

[6]Mission Zero: Independent Review of Net Zero – Final Report January 2023

First Retro Fit Standard) which will offer Level 2 courses to start people on the journey, right up to Level 5 courses on retrofit co-ordination**.** This was funded by the Essex Renewal Fund which supported 'Fit for Retrofit' training to housing providers, and research into stock condition and the demand and supply of retrofit skills in Essex. Essex County Council have been working closely with the Adult Community Learning (ACL) to deliver a "train the trainer" programme to address tutor shortages and ensure the benefits of the project continue.

4.10. ***Harlow Council will continue to work with key partners to enhance the retrofit and clean energy skills of residents to support the delivery of retro fit improvements and renewable technologies in Harlow and improve the skills and employment levels of local residents. The Council will work with the Harlow College in particular who are already investing in appropriate training.***

New Residential Development

4.11. It is important that new residential homes are energy efficient, well-ventilated and Net Zero as it is far easier to construct new ultra-low energy 'Net Zero carbon compatible' buildings than to retrofit housing stock later. The government and Harlow Council are already committed to delivering energy efficient and sustainable homes and this is delivered through the Council's planning functions and house building programmes. However, we can go further than what is already in place.

4.12. The Harlow Local Development Plan (HLDP) includes a policy on Sustainable Design, Construction and Energy Usage. The Policy expects development to be delivered to high sustainable standards taking account of predicted changes to heating and cooling requirements as a result of climate change. ***It aims to exceed Building Regulations minimum standards, preferably 19% above, using performance and quality benchmarks such as Passivhaus, Home Quality Mark and BREEAM UK New Construction 2018[7].*** The policy lists how this could be delivered e.g. natural heating and cooling measures such as thermal energy, optimising daylight, reducing risk of over-heating, using locally sustainable and energy efficient construction materials and using passive design measures in window sizing, thermal mass and building orientation.

4.13. **The Council *will be reviewing the HLDP and a major part of that will be looking at how Climate Change and Net Zero policies can be made more robust.*** Current Building Regulations are insufficient for achieving energy efficient and truly Net Zero in operation buildings. The Council has been working with the ECC Climate and Planning Unit to develop draft policies for Essex on this matter to help support new Local Plans. These draft policies as well as other technical evidence base prepared, will be considered as part of the Local Plan review.

4.14. To support current policies, the Council has prepared an addendum to the Harlow Design Guide setting out further details in respect of how new buildings can be energy efficient including the consideration of embodied carbon which includes all CO_2

[7] Since been updated to BREEAM New Construction Version 6.1

emitted in producing the building materials used, the building process itself and any deconstructing at the end of a building's life. If appropriate, and before a Local Plan review has been carried out, ***the Council will consider whether revisions to the Design Guide addendum are required*** to take into account material produced by ECC's Climate and Planning Unit on aspects such as Net Zero targets, energy use or space heat demand. These targets could then be considered in the determination of planning applications prior to a Local Plan review being prepared. It could also consider alternative measures and evolving technologies such as using waterways to cool and heat homes through thermal energy.

4.15. As well as energy efficiency, the addendum sets out requirements for ensuring water efficiency in new developments and the HLDP includes a policy which looks to achieve a water efficiency of no more than 110 litres per person per day. The Local Plan review will consider whether this target should be reduced further. This is particularly important due to water challenges in the local area, as Essex is one of the most water stressed counties in the UK. Reducing the commitment to 80 litres per person per day would align Harlow with the Water Ready (2024) report by the Future Homes Hub which recommends this target in water stressed areas by 2035.

4.16. To deliver water efficiency targets, the Council will support measures in new properties and across our own operational buildings that will reduce water usage including hippo bags in cisterns, water meters across properties, water-reducing taps/toilets/showers, and installation of water butts to harvest and make use of rainwater.

4.17. ***To ensure that developments are achieving these standards, the Council requires the submission of both a water efficiency and sustainability statement as part of a planning application***. ***Furthermore, applicants for major developments across the Garden Town must complete the Harlow and Gilston Garden Town Sustainability Checklist.*** The HGGT partners will consider whether a review of the checklist is needed.

4.18. The HLDP not only sets out policies for energy efficient buildings and homes, it also has a plethora of other policies that will help to mitigate climate change including flooding and drainage, supporting sustainable modes of transport, protecting green spaces and wildlife including biodiversity net gain and reducing pollution and contamination.

4.19. In addition to the above, the government is committed to introducing the Future Homes Standard for new build homes. Consultations have already taken place for Future Homes and Future Building Standards which aim to implement low carbon heating and world-leading levels of energy efficiency through Building Regulation changes. To help lay the groundwork for this introduction, Building Regulations were amended in 2022 to ensure new homes in England produce 30% less carbon emissions. ***It is the intention that from 2025, Building Regulations will be changed to ensure new homes produce 75-80% less carbon emissions, are Net Zero ready and will not require retrofitting. Proposals will also extend to those extending or making***

renovations to existing homes. This will help support retrofitting existing homes to more energy efficient standards.

4.20. The Future Homes/Buildings Standards are a positive step in the right direction as are the existing policies set out in the Council's HLDP. However, we can go further, and ***the Council supports Essex County Council's targets of new buildings being Net Zero by 2025 and all to be carbon positive by 2030 i.e. removing more carbon dioxide from the air than were generated in upfront carbon emissions and operating emissions.*** Implementing this however will be more complicated and will rely on updating the Council's Local Plan policies and subject to the viability of individual sites and other competing demands i.e. planning contributions and affordable housing. ECC have set out how this target could be reached in a Planning Policy Position Paper for Net Zero including building ultra-low energy properties, fossil free and renewable energy generation. The document also sets out space heating demand and energy use limits.

4.21. The Council will look to ***prepare useful toolkits to help developers and residents implement more energy efficient and sustainable methods of construction for both new builds and renovations. The Council will use the Cotswold Council toolkit as an example.*** ECC have also prepared a Net Zero Specifications Guide for residential developments and Solar Design Guide which will also assist applicants.

4.22. The Local Plan review will also need to ensure there is a robust assessment in place for assessing and monitoring the performance of new buildings. The Council will consider the use of nationally recognised standards as a mechanism for reviewing the energy efficiency of buildings. The Low Energy Transformation Initiative (LETI) has prepared several helpful documents and standards including a Climate Emergency Design Guide which includes KPIs the Council could implement, a retrofit guide, client guides for construction and other helpful tools which may be useful to include.

4.23. The Council will continue to work closely with Essex County Council on matters relating to climate change and new development. This includes supporting any updates to the Essex Design Guide in respect of climate change and Net Zero in new developments.

4.24. A Climate Action Charter prepared for developers by The Essex Developers' Group[8] working with Essex planning officers is regularly updated to reflect progress in energy

[8] Comprises private companies and Housing Associations who build homes across Essex, working with Government, Housing Minister, Homes England and the South East Local Enterprise Partnership to accelerate housing delivery and affordable homes. Key areas of focus include planning, viability, construction skills, climate action, quality design and supporting SMEs/smaller house builders.

and Net Zero targets. It is the first of its kind in the UK and is a step forward in working towards common Net Zero goals with the private sector. It sets out real commitments through the Essex Developers' Group for a range of actions that will help ensure the highest energy standards in new buildings. Harlow Council supports this Charter and will encourage developers to engage with it.

Existing Privately Owned Homes

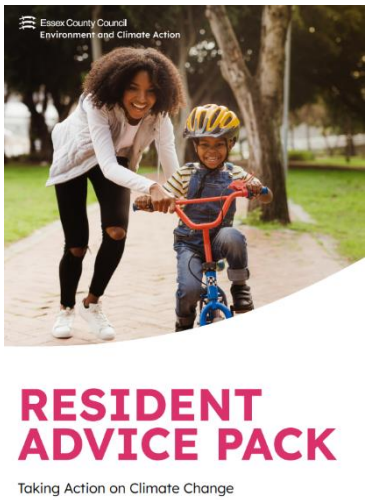
4.25. The Council can influence the energy efficiency and sustainability of new buildings and development through the planning system. Amendments to Building Regulations will also ensure new builds and those wishing to renovate or extend their homes are done in a more energy efficient way. Harlow also has control over the retrofit and adaptation of its own housing stock. However, it has little control or influence over existing housing stock across Harlow, particularly those which are privately owned and are therefore not covered by any regulations for rental properties.

4.26. The Council can help to educate residents about energy efficiency, air tightness and ventilation measures, encourage them to make changes to their properties and support them financially wherever possible through available grants. The Council funded a Community Hub for two years which provided holistic support to residents including energy efficiency advice. Increasing energy costs and household bills are likely to encourage homeowners to invest in making their homes more energy efficient; however, it's knowing how to do this, and opportunities for financial support, that the Council can help with. In particular, the Council recognises the importance of improving the energy efficiency of heritage and historic buildings to ensure they can adapt to a low-carbon, climate-resilient society, while preserving the character and fabric of these properties.

4.27. Essex County Council have already been successfully bidding for money to help provide advice and grant support to Essex households on low income, in fuel poverty and in poorly insulated homes. This will enable them to retrofit their home, improve its energy efficiency, lower carbon emissions and also improve living conditions. Harlow will continue to work with Essex County Council (ECC) and government to access and bid for any grant funding available to ensure that low-income households who are in fuel poverty can make improvements to their homes.

4.28. To ensure that residents are made aware of such grants, it is important that this is clearly communicated. ***The Council will promote widely through its communication channels information and guidance on making existing homes more energy efficient and how homeowners may be able to apply for any grants.*** For example, the Warm Homes Essex advice and support project, set up between Essex County Council and Citizens Advice Essex, supports those whose health is adversely affected or at risk

from living in a cold home and what can be made available to individuals to improve their circumstances.



4.29. ***The County Council have also prepared a residents advice pack that the Council will help to promote to homeowners across Harlow.*** It helps Essex residents understand how they can reduce their carbon footprint by making small changes in their everyday lives including advice on cutting energy bills and how to access grants.

Issues and Challenges

4.30. There are significant financial challenges in retrofitting the Council's existing housing stock as well as being able to find the workforce with the necessary skills to implement and maintain/service retrofit solutions e.g. servicing heat source pumps rather than gas boilers. This is a national issue which needs further support, but this will impact upon the speed in which the Council will be able to retrofit properties or make them Net Zero. The Council will apply for any grants available to help support the retrofit programme. There may also be properties that will be difficult, if not impossible, to retrofit and significant works may be required e.g. roof strengthening to enable PVs. This will need to be scoped out, costed and decisions made on viability grounds. Tenant engagement will also be key as many tenants will still be living in their property as work is carried out and may have installations and changes made to their properties that they do not understand how to use e.g. heat pumps.

4.31. As previously set out, the Council can only encourage and wherever possible support homeowners financially to retrofit their existing properties. Therefore, the Council has little influence over how quickly this can be undertaken and therefore whether the Net Zero target by 2040 can be reached. It is also difficult to currently know whether technologies will evolve, become cheaper and more readily available and this may dissuade people from making short term decisions on implementing measures.

4.32. Retrofitting will be complicated further for certain properties such as listed buildings and homes in Conservation Areas. The planning system, on a national level, needs to have some flexibility to enable residents in these properties to make energy efficiency improvements without any additional financial and resource burdens, this being a fine balance between achieving Net Zero targets and retaining design and heritage features.

4.33. The planning system and building regulations has a major influence on the delivery of new Net Zero/energy efficient properties. This is only one element of delivering sustainable development and other factors need to be carefully considered including sustainable transport and access to services, healthy places with areas to play, provision of health and education services, biodiversity net gain, green infrastructure and sustainable drainage. Along with the provision of other infrastructure and

affordable housing, this comes at a significant cost. The level of infrastructure cost required for new buildings in addition to the provision of completely Net Zero requirements may make some schemes unviable and the Council will need to balance its priorities for what can be delivered on sites.

Table 2

Summary of actions for Objective 2

To achieve Net Zero emissions from all homes and the built environment within Harlow.

Short term actions	Medium term actions	Long term actions
Ascertain what EPC ratings require updating and review the ratings. Identify properties with lowest rating and focus on their retrofit. Prepare strategy and look at options for non-standard properties. Prepare an assessment which will help to determine which properties can be or should be retrofitted first. Complete three pilot properties. Implement new asset management system/energy module	Continue program for retrofit and aim for properties that can be retrofitted to reach EPC rating C*. Access grant funding when available.	Where viable, all housing stock across Harlow will be Net Zero
Exceed Building Regulations minimum standards, preferably above 19%, using performance and quality benchmarks such as Passivhaus, Home Quality Mark and BREEAM. Consider requesting higher standards from developments until Local Plan Review has been undertaken.	New homes built by the Council will be completely Net Zero	
Requirement for a water efficiency statement, a sustainability statement and completion of the Harlow and Gilston Garden Town Sustainability Checklist with new developments.	Aim to align with Essex County Council targets of all new homes/buildings Carbon Positive by 2030	
Aim to align with Essex County Council targets of all new homes/buildings Net Zero in operation by 2025	Adopt a revised Local Plan setting out more stringent policies on Net Zero and Climate Change. Consider ECC Climate and Planning	

	Unit's draft policies and technical evidence when preparing new policies.	
Provide a support/advice page for existing homeowners wishing to improve their home/access grant support for retrofitting/improving energy efficiency and keep up to date. Use other communication channels to reach out to residents including online advice sessions or talks to residents	Prepare supporting toolkits for applicants	
Working with key partners, including local and community energy groups, to enhance the supply of retrofit and clean energy skills		

* This is subject to available funding, property considerations and available skillsets and will continue to be monitored through this strategy

5. OBJECTIVE 3

To reduce consumption of resources, reduce waste and increase reuse and recycling in Harlow

5.1. This objective considers how we consume and use resources. It identifies ways to reduce waste by ensuring it is not produced at all, reuse resources by limiting what we throw away and recycle which involves taking used materials and re-manufacturing them to sell as new. The UK is committed to moving towards a more circular economy which will see us keeping resources in use as long as possible, extracting maximum value from them, minimising waste and promoting resource efficiency. Targets have been set out in several government plans, strategies and legislation including:

25 Year Environment Plan[9]:

- Working towards zero avoidable waste by 2050
- Eliminating avoidable plastic waste by end of 2042. Eliminate avoidable plastic waste by 2042
- Explore options for the near elimination of biodegradable municipal waste to landfill from 2028

Circular Economy Package (CEP) and subsequent Waste Economy Regulations (2020):

- Local Authority recycling rate target at 65% by 2035
- 10% or less going to landfill by 2035.

5.2. The responsibility of waste management is shared across many partners. Harlow Council is responsible for collecting household waste from residents and other public buildings in the district. Essex County Council (ECC) are responsible for co-ordinating and managing the disposal of municipal waste, which includes household, some commercial or industrial waste, and waste deposited at Household Waste Recycling Sites. As the responsible waste authority, they also prepare waste local plans and deal with any applications for waste facilities. Commercial properties are responsible for removing their own waste, usually through a waste disposal company. The private sector also provides facilities for waste transfer, recycling, treatment and disposal.

5.3. Actions and proposals set out below focus on what Harlow can do as one of the partners, both as an advocate for reducing waste, a waste collecting authority and through our communication channels. We work closely with ECC to develop their waste plans including updated Joint Municipal Waste Management Strategies and

[9] Targets based on 2023 Environment Improvement Plan (update of 25 Year Plan)

support their target of zero landfill by 2030 (as set out in their Essex Climate Action Plan).

Harlow's Waste Contract and Collection Service

5.4. As set out in Objective 1, the Council will ensure that any ***new waste contractor can demonstrate that they are achieving Net Zero through their operations and providing the most efficient and sustainable waste collection service for Harlow.*** A lot has already been done to ensure that the Council's waste collection service is as efficient and sustainable as possible. In 2009/10 the Council overhauled the way it collected waste, being one of the first local authorities in Essex to change to wheelie bins, collect weekly food waste, charge for green waste and have fortnightly refuse waste collections. The current contract includes the latest digital technology within the refuse vehicles to support efficiency. It also involves less noxious vehicles, electric lifts and a potential recycling route map scheme. The Council will ***implement a recycling route map scheme which will identify areas and particular developments (e.g. flatted) where recycling is less and initiate a communication campaign with these areas.*** In 2022 the Council also undertook a routing rebalance process which ensures collections are spread evenly and therefore done more efficiently.

5.5. In addition to this the Council will ***consider how it can encourage more recycling, reductions in food waste and decrease waste going to landfill. This will be undertaken through a review of the Council's collection services.*** In 2023/24 39.5% of waste collected in Harlow was recycled, reused or composted. Working with ECC, a food waste project in 2023/24 was successful in increasing food waste recycling and hopefully will increase this figure. This, along with other measures, will help the Council achieve the government national recycling target of 65% by 2035. The Council will aspire to reach this target but is a significant increase over the next decade. Options may be to reduce collection for non-recyclable materials or reducing the size of bins/bags for these items or implement a violation scheme to prevent overflowing refuse bins. Other measures could include working with a new waste contractor, private landlords and management companies to see how recycling can be increased and food waste bins provided for flats. ***Options to improve the methods for collecting waste and an increase in our recycling targets will be considered as part of the wider waste contract.*** This includes the recycling route map mentioned previously.

5.6. ***How waste is provided and located is important for new development proposals and is a key consideration in planning applications. In some instances, applicants will be required to submit a Waste Management Plan and this should set out ways in which the proposal encourages and supports residents to recycle*** such as internal storage for the separation of recyclable materials from other waste, in-sink food disposable unit or even, for larger developments, alternative waste technologies.

5.7. In the future the Council may consider more radical solutions for waste collection both in new developments and existing streets. Some local authorities, such as Liverpool, Edinburgh and Cambridge, have installed underground bins which remove the need

for wheelie bins and use technology to let service teams know when they are full. This will help reduce vehicle movements around residential streets.

5.8. ***Replacing bins in public areas, such as in parks and retail areas, with mixed recycling bins will encourage visitors to recycle their litter when visiting the town.*** The Council has already installed six solar panelled bins, as part of its roll out of 146 new bins across the town. These bins compact litter and let HTS know when they need emptying.

Minimising Food Waste

5.9. Recycling food waste is important because when food or any other biodegradable waste breaks down it produces methane, a greenhouse gas 25 times more potent than carbon dioxide. The methane produced from waste rotting in a landfill is released straight into the atmosphere, where it contributes to climate change causing gases and a worsening of air quality. When food is recycled it is broken down in an anaerobic digester, the methane released is captured and burnt to produce electricity. Recycling food not only stops the methane from entering the atmosphere, but it also becomes a source of energy.

5.10. Throwing food way can also be a financial waste with the average household wasting £720 a year throwing food that can be eaten. Essex Council with Love Essex have previously supported and encouraged residents to sign up to campaigns and pledges including the 2024 Essex Food Waste Pledge for tips to reduce waste and have worked with *Kitche* (company) to promote their food-saving app. Harlow Council supports these and other campaigns to reduce food waste. In September 2023 the Council supported a communication campaign to educate people on recycling their food waste and handing out caddies and liners. ***The Council will support and undertake further communication campaigns that help to reduce food waste.***

5.11. Home composting is greatly encouraged by the Council and discounted bins are available via Essex County Council's partnership with getcomposting. The Council will also look at supporting Voluntary and Community Sector organisations that run local food banks to help reduce food waste.

5.12. In addition to minimising food waste, the Council will promote local food growing to support climate change adaption through the provision of new and improved allotment space and supporting growing food at home. This will reduce the need to transport food and allocating green space to food production.

Becoming a Circular Economy

5.13. A circular economy involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible. Incineration and landfill should then be a last resort. There are already measures in place which support this such as the use of charity shops, online websites and apps such as Facebook selling pages, Gumtree and Freegle for selling and buying used products. There are now more reuse opportunities at household waste recycling centres,

particularly large electrical items that can be put to better use or repaired. Larger high street retailers are looking at opportunities to support a circular economy by renting outfits or accepting returns of textiles/fabrics for reuse. ***The Council will promote and champion measures which help support the circular economy and support community events such as repair days, clothes sharing events, 'library of things' days etc.*** HTS are also considering this in their Climate Change Strategy.

5.14. ***The Council will work with local businesses to look at opportunities for them to become more circular in their processes e.g. how and what they waste, their process of packaging, delivery, what technology may be available. The Council will also undertake a review of its own services, processes and procedures to see how it can become more sustainable with a pledge that it becomes a circular business.*** This is already being done through the Council's commitment to reducing carbon emissions, preparing carbon reduction plans and other actions set out in this strategy.

Engagement and Education

5.15. Engagement and education are a huge element of reducing waste and increasing recycling and reuse across Harlow. The Council can review its waste collection service to encourage recycling and discouraging unnecessary waste, but it can be difficult to change habits. It can, as an important conduit to the community, engage and educate people, businesses and its own contractors to make considerate choices, recycle more, think about what we purchase and throw away. This can help address issues such as food poverty, help residents and businesses make financial savings but also build skills through repair and reuse.

5.16. The Council already supports Love Essex campaign which is an umbrella brand that acts on behalf of the Essex Waste Partnership and the Cleaner Essex group. Through the Love Essex brand, they aim to inspire Essex residents to reduce the amount of waste they throw away, recycle more and reduce environmental crimes such as littering and fly-tipping.

5.17. Examples which the Council could consider include working with schools and the Crucial Crew to improve awareness and education, business network groups and either support existing apps, like those provided by Essex Council/Love Essex or create new apps and webpages. A community Facebook page, Harlow Climate Emergency Alliance, has already been set up which holds clothes swap days, tips for reducing water usage and other helpful ideas and links. ***A community engagement plan which sets out engagement activities with the community including businesses, schools and***

***residents on waste, recycling etc will be prepared*.** This will consider event days and activities.

Issues and Challenges

5.18. Harlow has a relatively low recycling rate, and it is therefore a big task to increase this target to meet national targets of 65% by 2035. The Council will implement measures that will increase recycling and minimise waste through its responsibility as the waste collector and as an important conduit to the local community. The Council believes that with the right engagement and education, Harlow can reach the 65% target recycling rate and reduce the amount of municipal waste going to landfill.

5.19. The Council is reliant however on residents and businesses making more sustainable lifestyle choices and, operational changes. The Council is also dependent on the government putting more actions, restrictions and legislation in place which ensures businesses are playing their part e.g. changing packaging, removing single use plastics, improving private commercial and industrial waste generation. The Council will also need to consider what resources it has to deliver events throughout the year and may rely on the public to implement and continually manage such events and workshops (e.g. repair days and education days).

5.20. As with most objectives, technology may need to evolve, be more efficient and cheaper to incentivise people and companies to change. Furthermore, the right infrastructure needs to be delivered to support proposals such as charging points and sub stations for electric vehicles.

Table 3

Summary of actions for Objective 3

To reduce consumption of resources, reduce waste and increase reuse and recycling in Harlow.

Short term actions	Medium term actions	Long term actions
As part of the review of the waste management strategy the Council will aim for current national recycling targets	Ensure new waste management strategy takes into consideration Net Zero including any latest technologies, new sustainable vehicles or any potential changes to collections/routing efficiency etc	Consider the use of alternative technologies and processes for disposing of waste and collecting waste in the future.
Request waste management plans as part of planning applications		
Replacing bins in public areas, such as in parks and retail areas, with mixed recycling bins		
Pull together community engagement plan which sets out engagement activities with the community including businesses, schools and residents on waste, recycling etc. Continue to hold events, activities, and engagement with the community.		
The Council will undertake a review of its own services, processes and procedures to see how it can be become more sustainable with a pledge that it becomes a circular business.	Implement measures that improve the Council's circular economy	
As part of the Communications Plan update, the Council will consider opportunities to engage with the community in a variety of ways about recycling, reuse, minimising food waste etc.		

6. OBJECTIVE 4

To adopt good stewardship of the natural environment across the town to support both climate change adaptation and mitigation

6.1. Green spaces provide a multitude of benefits for people whilst also being vital habitat for wildlife. The presence of green spaces can enhance the health and wellbeing of people living and working in cities by increasing physical activity. They also impact our health indirectly by improving air quality and limiting the impact of heatwaves by reducing urban temperatures. Reducing urban temperatures may reduce the need for air conditioning and therefore energy use in nearby buildings. They also have significant economic benefits, including attracting investment, boosting tourism and job creation through maintenance and management.

6.2. Almost 50% of the land in Harlow is considered green and this consists of Green Wedges and Green Fingers, open spaces, parks and play spaces and Green Belt. A large majority of these spaces are owned by Harlow Council. Therefore, the Council has a lot of control over the way green spaces are maintained and managed and what their purpose can be. As the local planning authority, the Council can also manage how future green spaces are maintained and how they can contribute towards mitigating climate change and reducing CO_2 emissions.

6.3. Urban vegetation takes carbon dioxide from the atmosphere and stores it in their roots and surrounding soils. This process is known as carbon sequestration and, as long as the vegetation is preserved, results in an overall reduction of carbon dioxide in the atmosphere. The design and maintenance of spaces play a crucial role in determining how much carbon they will store. For example, a “forest-like” green space with many trees and native vegetation ground cover maximises carbon sequestration over a “parklike” design with fewer trees and frequently mown grass. As well as creating new green space, looking after existing mature trees is particularly important because they continue to sequester and store large amounts of carbon.

6.4. In urban areas, impermeable materials used for roads and pavements mean that rain is not absorbed and remains on the surface. During periods of heavy rainfall this water accumulates and when the drainage capacity of the area is exceeded, flooding will occur. Vegetated surfaces can intercept and store water, reducing the volume of rainwater run-off.

6.5. Green spaces within an urban area can also be home to many species of wildlife including pollinators, even those that are rare or threatened and for some species, urban areas can be more favoured habitat to intensively farmed countryside. Large parks and woodland regions can support the widest range of species, but even small areas of vegetation such as roundabouts, roadside verges and green roofs can support a variety of plants, insects and birds. Urban green spaces can act as "wildlife corridors", linking together larger parks, and providing links to rural areas on the outskirts of towns and cities.

6.6. More green space therefore means more urban wildlife, but strategies for planting and maintenance need to be designed carefully to enhance biodiversity and provide the best opportunity for carbon sequestration.

Managing and Maintaining Council Owned Land

6.7. The Council owns most green space within Harlow and HTS (Property and Environment) provide maintenance services for these spaces. As stated in Objective 1, the natural environment and the way it is maintained and managed can have a significant impact on climate change and help to reduce emissions as does the equipment and infrastructure used. Objective 1 has already committed the Council to undertake the following projects:

- Continue to implement the ***Council's tree planting strategy*** in partnership with the Essex Forest Partnership and Essex Forest Initiative. This includes the identification and delivery of longer-term proposals, for example the creation of wildlife corridors between habitats and the expansion of woodland areas such as Parndon Wood. The tree planting strategy should look at opportunities for minimising 'heat stress' and providing additional cooling and shading, especially in denser urban areas of the town such as the town centre.
- ***Prepare a tree maintenance strategy*** setting out watering plans, pruning schedules, identification of any known diseases, survey of the trees. This will ensure trees in Harlow are protected and cared for.
- ***Prepare a woodland management plan***. The woodland management plan will identify areas for new woodland planting, plans for coppicing and felling. Woodlands also provide the opportunity for the Council to receive income by selling the carbon captured by new woodland planting through credits or units and using any felling for timber and other produce.
- ***Prepare a landscape strategy reviewing the cutting and maintenance regimes for public open spaces and grassed areas.*** This will identify locations where grass cutting can be reduced, where natural flowers and plants can be allowed to grow and where planting can be located to encourage pollinators. This will be informed by a review of

the district's Green Wedges/Green Fingers which will assess the quality, character and need to help determine the most appropriate forms of management interventions and biodiversity enhancements i.e. it will identify areas that can be left to grow wild or where additional maintenance and planting can improve the biodiversity and reduce carbon. This should include an indication of locations, proposal, timescales and costs.

- Work with statutory bodies and interested parties to bring forward ***actions to improve the town's wetland areas and ponds*** to improve carbon sequestration.
- ***Publish a 'first duty' report as part of the 2021 Environment Act's Biodiversity Duty*** which sets out what actions the Council will consider implementing to conserve and enhance biodiversity. ***By January 2026, deliver a 'first report' setting out what actions have been undertaken.***
- ***Work with Essex County Council (ECC) to deliver enhancements and biodiversity recovery at several open spaces in Harlow as part of the Essex Local Nature Recovery Strategy (LNRS)*** which was published for consultation in 2024 and is to be adopted in 2025. Harlow sites are: 1) Harlow Woods; 2) Parndon Lock Meadow and Parndon Moat Marsh; 3) River Stort area; 4) Jean McAlpine and Cannons Brook Country Park; 5) Church End Pond; 6) Netteswell Pond Conservation Area; and 7) Latton Common/Harlow Common.

6.8. ***The Council will continue to work with volunteers in the Town Park and other key green spaces and collaborate with community projects which support biodiversity and reduce carbon.*** Working with nature rather than against it, the Council will consider how it can move away from traditional intensive horticultural techniques to lower cost permaculture approaches.

6.9. This may include replacing annual bedding plants with herbaceous perennials which provide good forage for bees and a net reduction in emissions. The Council will identify spaces that could be managed as meadows as part of a landscape strategy to increase biodiversity and reduce the need for machinery. However, this may require in the shorter term, the purchase of new equipment which will have a carbon cost.

6.10. The Council will consider how grass verges and other strips of open space in residential estates can be repurposed to support biodiversity, provide cooling and shading through tree planting, provide drainage systems to help prevent flooding as well as potential opportunities for growing food. Where the Green Wedge/Finger network abuts roads, the Council will explore opportunities to reclaim back amenity green space or grass verges for drainage/rainwater management such as rain gardens, meadows and urban boulevards. The Council will also consider creating green buffers between people and vehicles and improve wildlife corridors along them.

6.11. As per the Environmental Improvement Plan (2023) the Council will ***consider how it can contribute towards providing a sustainable long-term supply of timber and wood products*** which can be used in different sectors including the construction sector. This includes additional planting and protecting trees and woodlands.

6.12. There are opportunities to make play equipment more sustainable through the choice of materials such as wood and porous surfaces, to the design and layout of landscaping and planting to improve shading and biodiversity. ***The Council will work with play equipment providers and developers of new sites that provide play areas to reach solutions that improve the sustainability of parks and play areas and consider the use of more natural equipment.*** This will need to consider the impact of materials on the longevity of the equipment.

Green Spaces within New Development Sites

6.13. Harlow is unique for its green infrastructure (GI) with its planned network of Green Wedges and Fingers, it's provision of wildlife sites such as Parndon Wood Site of Special Scientific Interest, other dispersed woodlands, ponds and streams and the River Stort. It is also within close proximity of open countryside and farmland. It is important that new developments carefully consider these spaces as part of their proposals and layouts, connecting to them, enhancing them, mitigating any impact, and providing additional green spaces, planting and landscaping. ***The Council's own housebuilding programme will carefully consider the right landscaping and planting as part of their masterplanning, using qualified landscape architects, using agreed tree species lists and implementing maintenance regimes which ensure the longevity of new planting.***

6.14. The Harlow Local Development Plan contains several policies for the protection, improvement and delivery of green spaces, GI, landscape, biodiversity and geodiversity. Further guidance and documentation have been prepared to help deliver the right GI across Harlow including:

- Green Infrastructure and Public Open Space Supplementary Planning Document
- Essex County Council Green Infrastructure Strategy
- Essex County Council Green Infrastructure Standards Guidance
- Harlow and Gilston Garden Town (HGGT) Green Infrastructure Framework
- Essex Local Nature Recovery Strategy (LNRS)
- Design Guide Addendum

6.15. Natural England's Green Infrastructure Framework (2023) is also an important consideration for existing and new GI. It aims to support the creation of high-quality green infrastructure that benefits both people and nature, helping authorities, communities and developers create better places for living, working, learning and relaxation. It is a helpful tool to help towns and cities turn greener and will help increase the amount of green cover to 40% in urban residential areas. In addition to this the Council will consider how new trees and tree lined streets can be implemented in new developments. The national Environmental Improvement Plan

aims to increase the net area of tree canopy by 16.5% of total land area in England by 2050 and the Forestry Commission seeks to promote tree planting in all developments, not just as compensation for loss.

6.16. These documents and Local Plan policies will help ensure that green space is provided at every opportunity through new developments but also that existing GI is protected in Harlow. ***The Council will work with partners and statutory bodies to deliver actions identified in these documents and review Local Plan policies to ensure they continue to be robust. The Council will ensure new developments incorporate green space, landscaping and greening into their proposals.*** Development briefs for areas will continue to include these as fundamental design elements on future development sites. As part of the Local Plan review, the Council will also consider whether additional policies are required on the use of permeable materials in all aspects of proposals such as roads, paths, driveways as well as in the covenant control decision making process.

6.17. The long-term stewardship and management of new green spaces on development sites is important to ensure they are retained for the purpose they were created for. It is essential that stewardship structures are considered at the earliest opportunity of a planning application especially for larger sites. The Council have endorsed the Harlow and Gilston Garden Town Stewardship Charter which sets out principles for stewardship of spaces and buildings across Garden Town development sites.

Biodiversity Net Gain

6.18. From November 2023, the Environment Act introduced regulations that would require a mandatory 10% Biodiversity Net Gain (BNG) in new developments. This means that developers will have to assess the type of habitat affected and its condition before submitting plans to the local planning authority detailing how they will deliver a 10% benefit for nature.

6.19. Harlow Council already supports BNG through the Local Plan and through guidance set out in the Green Infrastructure and Public Open Spaces SPD. However, the Council will also ensure that the new BNG legislation is delivered in Harlow and the wider Garden Town. The Council has already submitted sites to the ECC LNRS (as set out above) which will also benefit from an uplift in biodiversity and will be undertaking evidence to help understand whether additional sites could be identified for off-site BNG i.e. where a developer cannot provide 10% on their existing site, they can provide this in another location within the district. These existing sites across the district have the opportunity to include a multitude of functions in regards to green space for residents and wildlife. The Local Plan review will also consider whether a higher percentage of BNG, above 10%, is viable on future development sites.

Mitigating Surface Water Flooding

6.20. As climate change warms up the atmosphere, the air can hold more water vapour. When this air rapidly cools, water vapour turns into droplets which join together to

form heavy rainfall. Over a short period of time, heavy rainfall can cause flash floods and moderate rainfall over several days can overflow rivers. Furthermore, surface water flooding threatens more people and properties and can happen many miles from a river or stream, often in areas where people wouldn't expect. Surface water flooding occurs when the volume of rainfall exceeds the capacity of drains and surface water sewers and instead flows over the land. Blocked drains, sewers, waterlogged land and an increase in hard surfaces all increases the intensity of surface water flooding.

6.21. New developments will be required to mitigate their impact on surface water flooding including through the use of Sustainable Drainage Systems (SuDs), whilst considering the natural and historic environment in the process e.g. archaeological sites or protected land. The Council works closely with Essex County Council as the Lead Local Flood Authority (LLFA) on management of the Surface Water Management Plan. This includes the implementation of flood projects to mitigate those at risk of flooding in Harlow. Flood alleviation schemes that have already been delivered include Parndon Wood, Kingsmoor, Nicholls Field, Oaktree Gardens, Oakwood Pond, Broadley Road and Little Cattins. **The Council will continue to work with the LLFA on implementing flood alleviation schemes for existing residents of Harlow.** This will include considering how catchment management approaches can be implemented which deliver measures upstream to help mitigate any impacts further downstream. This could be through the use of urban drainage systems or forms of green infrastructure which when combined can provide natural flood mitigation measures and improve water quality.

Issues and Challenges

6.22. It will be important that the Council has a thorough understanding of the quality and quantity of its green spaces and the habitat, wildlife and biodiversity it supports as well as opportunities for improvement. The HGGT Green Infrastructure Framework provides a wealth of information on this. This knowledge will help the Council understand what stewardship and maintenance practises should be put in place and which partners should be involved.

6.23. The creation of new green spaces and the planting of more trees, shrubs and landscaping comes with a cost, both for implementation and future maintenance. The Council will need to consider how this can continue to be funded in the long term and will work closely with developers to create management companies or provide maintenance payments for landscaping on new sites. The stewardship work developed by HGGT partners have considered options for doing this and this work will continue to be developed. It is hoped however, that reducing maintenance for some spaces and allowing them to grow more naturally will reduce costs for the Council.

6.24. The Council also needs to consider the competing demands for green space across the town which can provide important access and connections for pedestrians, cyclists and vehicles (through the Green Wedges for example), provide habitat and corridors for wildlife, act as flood storage areas and can be used for playgrounds, playing pitches

and parks. This will need to be balanced carefully in any strategy prepared by the Council, particularly in relation to how spaces are maintained and cut.

6.25. The costs and benefits of certain projects and the impacts on sustainability will need to be carefully considered. For example, despite the advantages of wooden play equipment for the environment, this material can nonetheless be less sustainable as it requires more frequent inspections and needs to be replaced more often. The Council needs to recognise these competing factors and consider the best course of action for the environment.

6.26. Underpinning all of this is having the right expertise in place to advise the Council as to how, where, when and what to plant, how and when maintenance and cutting regimes should change, whether new equipment should be purchased and what is best regarding reducing carbon emissions and mitigating against pollution. Some external expertise may therefore be required to support the actions identified in this objective.

Table 4

Summary of actions for Objective 4

To adopt good stewardship of the natural environment across the town to support both climate change adaptation and mitigation.

<table>
<tr><th>Short term actions</th><th>Medium term actions</th><th>Long term actions</th></tr>
<tr><td>Continue to implement tree planting strategy and undertake relevant maintenance for planted trees</td><td>Work with statutory bodies and interested parties on bringing forward improvements to the town’s wetland areas</td><td rowspan="2">Implement longer term actions identified in the tree strategy, landscape strategy and woodland management plan.</td></tr>
<tr><td>Development of a specific tree strategy and woodland management plan and implementation of short-term actions from the strategy/plan. Implement medium term actions from landscape strategy and tree planting schemes</td><td>The Council will prepare a landscape strategy in order to review its cutting and maintenance regimes for public open spaces. This will incorporate an assessment of opportunities in the Green Wedge/Green Finger</td></tr>
<tr><td colspan="2">Consider how the Council can contribute towards providing a sustainable long-term supply of timber and wood products</td><td></td></tr>
<tr><td>Work with volunteers in the Town Park and other key green spaces and collaborate with community projects which support biodiversity and reduce carbon.</td><td colspan="2">Consider landscaping and planting as part of masterplanning Council development projects, using qualified landscape architects, using agreed tree species lists and implementing maintenance regimes which ensure the longevity of new planting.</td></tr>
<tr><td>Work with play equipment providers and developers of new sites that provide play areas to reach solutions that improve the sustainability of parks and play areas and consider the use of more natural equipment.</td><td></td><td></td></tr>
<tr><td colspan="3">Work with partners to deliver actions identified in Green Infrastructure strategies and documents including the HGGT GI Strategy and Local Nature Recovery Strategy (LNRS)</td></tr>
</table>

Ensure ‘green policies’ are still fit for purpose through the Local Plan Review.	Ensure the principles in the Stewardship Charter are delivered in new developments	
Work with developers to masterplan green space, landscaping and greening. Continue to create development briefs to ensure GI remains a fundamental element of schemes.		
Identify further green spaces that have the potential for providing biodiversity for net gain requirements (in addition to those identified in the LNRS)		
Continue to work with the Local Lead Flood Authority on implementing projects that mitigate flooding (including surface water flooding) and monitoring flood risk across the town		

7. OBJECTIVE 5

To achieve a significant modal shift towards more sustainable means of transport

7.1. The UK transport network is increasingly road centric with a continuing rise in the ownership and use of private vehicles and movement of freight by road. In 2022, 59% of journeys in the UK, including commuting, shopping, education and business, were used by private vehicles. Journeys made by walking accounted for 31% and this included walking for leisure purposes and accessing education/schools' settings. Only 2% of journeys were made using bikes[10]. In the East of England, which includes Harlow in Essex, transport creates 42% of carbon emissions, which is much greater than the national average of 28%. Of that figure, 96% of transport emissions are from road vehicles, particularly people commuting. As a comparison, industrial activity (30%) and homes such as heating demand etc (27%) are also high sources of carbon in the region.

7.2. Compared to more rural areas in Essex and the Eastern Region, Harlow is fortunate that most residents can access the train line, there are several bus routes, has services, schools and jobs close to homes due to the way it has been masterplanned and contains a network of footpaths and cyclepaths. However, the take up of cycling for leisure purposes is lower in Harlow than the UK average and when compared with surrounding areas. The 2021 Census shows that 67% of residents who need to commute to work i.e. do not work mostly from home, travel by car or van compared to a UK average of 45%. However, 12% of residents walk compared to an average of 7.6% across the UK.

7.3. Transport East[11] have a target of Net Zero for transport by 2040 which is ahead of government targets. Achieving Net Zero transport emissions will have the single greatest impact on both climate change goals and air quality, improving people's health and our environment. Essex County Council's Climate Action Plan approach is "Avoid – Shift – Improve': avoiding unnecessary motor vehicle trips; encourage residents to shift to other, more sustainable modes, such as walking, cycling and public transport; and improving the sustainability of those journeys which are essential, such as improving bus provision and developing a strategy for electric charge points. The Transport Strategy for Harlow and Gilston Garden Town sets out an ambitious modal shift objective of:

[10] DFT's Transport Statistics Great Britain:2022 Domestic Travel (published December 2022)

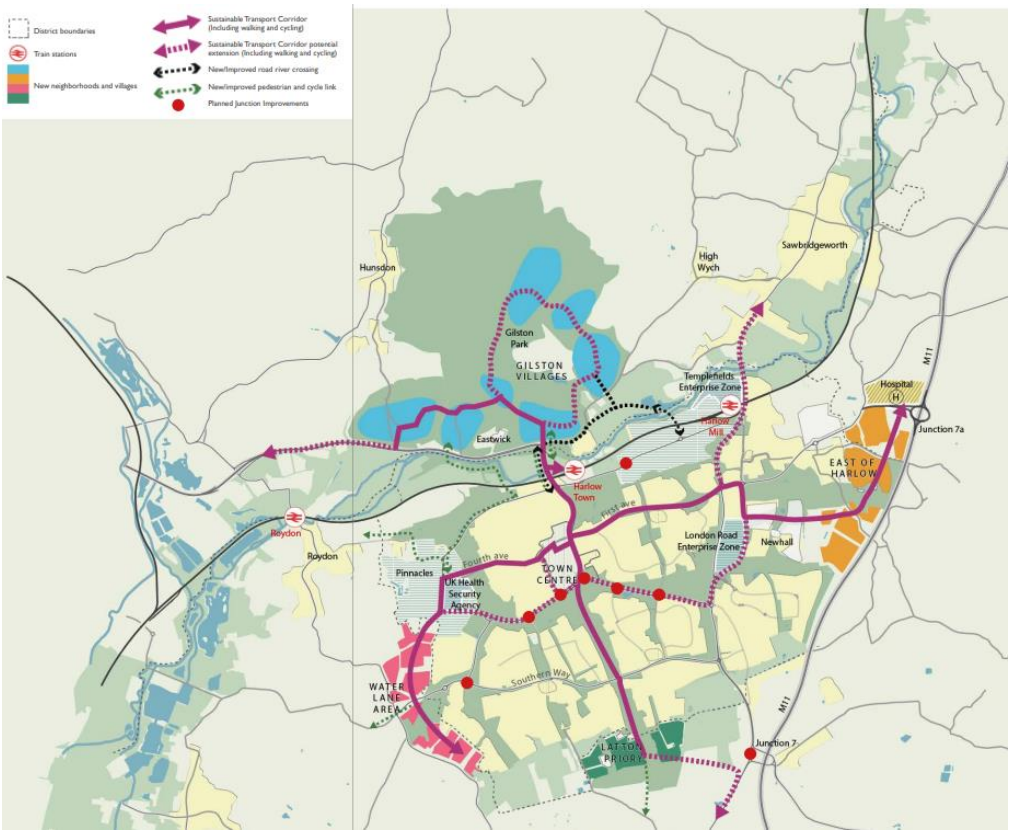
[11] Sub-national Transport Body for Norfolk, Suffolk, Essex, Southend-on-Sea and Thurrock providing a single voice for the region's transport strategy and transport investment priorities.

50% of all trips starting and/or ending in the existing settlement area of Harlow Town should be by active and sustainable travel modes and

60% of all trips starting and/or ending in the new Garden Communities of Harlow & Gilston Garden Town should be by **active** and **sustainable** travel modes.

The principles that underpin this and flow into this Climate Change Strategy are:

1. Prioritise and support active and sustainable transport i.e. walking, cycling and public transport
2. Make decisions based on transport user hierarchy which prioritises a) reducing travel requirements; 2) walking/cycling; 3) public transport and then; 4) private vehicles
3. Design inclusive infrastructure for everyone to support this hierarchy and ensure communities are connected to everyday activities
4. Make streets safe, sociable and enjoyable to walk and cycle
5. Provide high quality public transport whilst also reducing pollution and congestion
6. Deliver a high-quality network which provides alternatives to private vehicles whilst ensuring it supports those that depend upon it for essential journeys and services.



7.4. One major component of delivering sustainable modal shift across the Garden Town is the provision of a network of Sustainable Transport Corridors (STCs). These are a series of strategic public travel routes through the Garden Town providing high quality public transport and active travel options that will connect neighbourhoods quickly with key destinations such as the town centre and Harlow Town Railway Station and primary business areas. The existing networks will feed into the STCs which will provide the standard for exemplary sustainable travel.

7.5. The overall aim of this Climate Change Strategy objective is to provide a viable sustainable transport system for Harlow to enable residents to make sustainable choices which are fast, reliable, safe and value for money. Furthermore, this will help reduce pollution, reach Net Zero targets, provide more reliable journeys and improve the health and wellbeing of residents.

Walking and Cycling in Harlow

7.6. Harlow is a compact urban area, master planned so that homes are built around a neighbourhood centre providing day to day services and facilities that people can walk or cycle to. The town centre and bus station are located centrally in the town and most major employment is located around the edge to the north, west and east. Most destinations within Harlow are less than six miles from each other and therefore this makes walking and particularly cycling an ideal way to travel for short journeys. The network of Green Wedges and Green Fingers provide foot paths and cycle paths that in most cases connect these destinations. However, there are areas where links are broken, and roads have become barriers. As a result, some routes are not direct or safe and are therefore unlikely to be favoured over the car.

7.7. The Harlow Local Development Plan (HLDP) contains a transport hierarchy which prioritises walking and cycling. This means that decisions relating to transport, infrastructure and development must consider the needs of pedestrians and cyclists first. The HGGT partnership has prepared a Local Cycling and Walking Infrastructure Plan (LCWIP) which sets out a number of recommendations for improving cycling and walking connections in Harlow. For example, the report recommends some at-grade crossings rather than the use of underpasses, improvement to junctions across roads with drop down kerbs and tactile paving. ***The Council will work with partners, particularly Essex County Council (ECC) as the local highway authority, to implement the actions identified for routes in the LCWIP and seek funding/contributions from nearby developments and other funding opportunities to help deliver them.*** These improvements will significantly improve the safety, desirability and connectivity of the walking and cycling routes across Harlow.

7.8. In the short term two new walking and cycling routes are being delivered: 1) works have been completed to connect Elizabeth Way to Fifth Avenue (route 9 in the LCWIP); and 2) some improvements have been made to connect Post Office Road with Sheering Road (route 4 in the LCWIP).

7.9. As highlighted above, a major component of the HGGT Transport Strategy is delivery of the Sustainable Transport Corridors (STCs). This is also set out in the HLDP. As well

as providing direct routes for rapid transit buses, they will also provide direct and safe cycling and walking links connecting strategic sites with the town centre, Harlow Town Train Station, the Pinnacles employment area, the new Princess Alexandra Hospital and other facilities along the routes. The Council will ***work with HGGT partners to deliver the STCs ensuring they provide direct, safe and pleasant connections for pedestrians and cyclists*** and ensure they connect with existing neighbourhoods wherever possible.

7.10. ***Work has begun on the North to Centre element of the STC which connects Gilston with Harlow Town Train Station and Burnt Mill roundabout with the town centre.*** This will include more crossing points and direct routes, lighting and signage, landscaping and seating. It is expected that the scheme will be delivered in 2025/26.

7.11. The Council's planning section will continue to prioritise walking and cycling infrastructure and identify opportunities to improve the network, including towpaths, through development briefs for certain sites and masterplans. ***The Council will request the submission of transport assessments, transport statements, Green Travel Plans and School Travel Plans which set out how developments are supporting walking and cycling and helping to achieve modal shift. The Council and HGGT partners will develop a Workplace Travel Programme which will include information and initiatives to support and assist workplaces in encouraging modal shift to active and sustainable travel***. This could include introducing more bike stands and changing facilities/showers, charging infrastructure for wheelchairs/bikes, car clubs and car share schemes, vouchers towards purchasing bikes or investing in shuttle buses to the train station/bus station as well as looking at opportunities to work more from home. For schools, this could include investing in cycle lessons and bike maintenance, safe car -free zones around schools to support pedestrians and cyclists or further education on the benefits of walking and cycling.

7.12. ***The Council along with HGGT partners are investigating opportunities to develop a cycle hire scheme throughout the Garden Town.*** This will need to ensure bikes and bike stands are located to maximise opportunities for residents, workers and visitors and include intuitive and flexible payment systems and shared platforms supported by education and training.

Improving Public Transport

7.13. Harlow has a comprehensive local bus network with over 30 commercial and supported bus routes[12]. Many of the town's roads also have segregated bus priority lanes. There are also two railway stations located to the north of the town. However, only 3% of Harlow residents use the bus to get to work compared to 4.2% nationally. There are also very limited services at weekends and in the evenings and areas in Harlow where bus services rarely stop such as The Pinnacles. An Office for National Statistics release on Climate Change insights, business and transport (February 2023) stated that 4 out of 10 adults (41%) reported lack of reliable, regular or convenient public transport as a barrier to using greener forms of transport. The Council has been working with Essex County Council and HGGT partners to look at delivering a more fast, efficient, cost-effective and reliable public transport service making it a more attractive option for residents.

7.14. As previously stated, an important element of improving bus services in Harlow is the ***creation of sustainable transport corridors (STCs). The STCs will be delivered in stages over the long term, firstly with the north to centre route.*** As well as a network of cycling and walking corridors, the STC routes will also provide dedicated bus lanes enabling buses to travel quickly and frequently north to south and east to west across the town linking major destinations with development sites. There will also be opportunities for the existing bus routes to feed into these lanes.

7.15. The central hub for the STC is the bus station in the town centre. The Council's successful Towns Fund bid means that ***work is now progressing on regenerating and redeveloping the bus station area into a Transport Hub and Interchange.*** This is to be completed by 2025/26 and will consist of a transport hub building incorporating flexible spaces and amenities for passengers and staff, a cycle hub with stands for 80 cycles, 16 bus stands along with public realm improvements and landscaping. The Interchange will be the core of the STC, providing high-frequency public transport services in a new well-designed operational layout, reducing delays and facilitating safe, accessible and efficient movement of passengers and vehicles. The hub building will provide secure cycle-parking, e-bike charging and cycle hire capabilities, real time travel information and smart ticketing. This will improve the environment and accessibility of the bus station and reliability of buses. There may be opportunities in the future for electrically charged or hydrogen buses either at the station or at a separate depot.

7.16. It is the role of Essex County Council (ECC) to set out policies and objectives for bus service provision and where appropriate help subsidise or initiate bus services in

[12] November 2021 data from ECC Harlow Network Review Report

areas. Harlow Council works with ECC to deliver this and helps fund new services through developer contributions. ***The Council will work with ECC and other partners to improve infrastructure that underpins bus services including improvements to seating, lighting and shelters at bus stops and the provision of Real Time Information. The Council will support ECC and the County's Bus Service Improvement Plan (2021-26) and more specific objectives and network alterations set out in a Harlow Network Review paper.*** For example, this may include collecting Section 106 money from developments for bus improvements or help to deliver them through new regeneration and development projects. The projects initially identified for Harlow include:

A) Getting buses back running along Edinburgh Way and develop more cross-town routes
B) Deliver the Town Centre Bus Interchange and improve provision in hatches with mobility hubs
C) Improve bus accessibility to Harlow Town and Harlow Mill Rail Stations
D) Provide Bus Rapid Transit (BRT) services and drive modal shift (e.g. through the STCs)
E) Facilitate modal shift for Princess Alexandra Hospital (PAH) staff by offering discounted bus travel
F) Improve public transport provision within hatches through development of Mobility Hubs
G) Improve quality of bus stop infrastructure / waiting environment / increase accurate Real Time information
H) Introduce a simpler ticketing system

7.17. In addition to the above, the Council will investigate opportunities to support infrastructure which helps deliver cleaner and lower emission fleet of buses such as electric charging points at the bus depot.

Alternative Transport Modes for Freight

7.18. Objective 6 of the Climate Change Strategy looks at opportunities to support local businesses who wish to reduce their carbon emissions and become Net Zero. One element of this is making the movement of freight and goods more energy efficient and reduce the impact of this on the environment. Harlow has some large distribution centres and engineering companies who rely on the road network to move goods. Access to the M11 and A414 provides good links to other major routes.

7.19. Although the Council's knowledge is limited in regard to the logistics and freight movement of specific sectors and individual companies across Harlow, ***the Council will do what it can to support businesses in making changes and learn from good examples and best practise.*** The HGGT document 'Re-imagining How We Travel Differently' explores the use of freight hubs with a section dedicated to sustainable freight and deliveries. Some ideas that businesses may wish to consider include:

- E-cargo bikes for shorter journeys and minimal transportation of goods
- Use of drones for local deliveries
- Optimising the routes vehicles take and training drivers to drive fuel efficient
- Use of existing canals as a potential method
- Using more lower emission vehicles and using more sustainable fuels

- Minimising the number of less than full containers/truckloads by using consolidation centres or joining up with other distributors. The aim is to avoid trucks coming back to depots empty and collaborating with other businesses to move goods around
- Carbon off-setting as a last resort

7.20. Although the Council can only support businesses who wish to make changes, it will look to support proposals and initiatives that:
- ***improve the flow of HGVs on the road network in Harlow*** and measures which reduce cars thereby easing congestion for lorries.
- ***Engage with businesses to help understand more about how logistics and distribution works*** particularly when considering planning applications for new distribution centres.
- ***Look to protect the rail head at Templefields*** which supports shipment of goods by train.

Infrastructure for Electric Vehicles/Zero Emission Vehicles

7.21. The government have agreed to end the sale of new petrol, diesel and hybrid cars and vans from 2030 with them becoming Net Zero from 2035[13]. Therefore, over coming years the market share of zero emission vehicles (ZEVs) will increase substantially. Compared with 2020, 2021 vehicle licensing statics show a decrease of 8% in petrol and diesel vehicles, an increase of 80% in battery electric vehicles, 70% increase in plug-in hybrid electric vehicles and 57% in hybrid electric vehicles. Although there has been a significant increase in electric/hybrid vehicles, 73% of new registrations are still petrol and diesel cars[14]. Using alternative fuels and electricity for cars will not only improve emissions but will have a significant impact on air quality across the district.

7.22. ***To support a transition to electric vehicles, the Council will be preparing an Electric Vehicle Charging Strategy or working in partnership with Essex County Council on their Essex wide strategy.*** The Strategy will consider what charging infrastructure is required in Harlow and how it can be delivered. It will be important to consider the locations of charging points, how they will impact upon road users, the natural environment and historic environment including heritage buildings (e.g. Listed properties). The Essex Strategy, which was published for consultation in the Summer of 2023, focuses on On Street Chargepoints including working with partners to identify locations, the use of EV Car Clubs, a potential pay as you go open access system for charging, and Workplace Charging Schemes. The Council will also consider electric charging mooring points along the River Stort and support boaters wanting to covert to electric propulsion boats.

7.23. HTS already have 12 electric vehicles but a barrier to purchasing more is, along with finance, a lack of infrastructure in Harlow. The Essex draft Strategy identified the need for approximately 90 slow, 10-15 fast and 5-10 rapid on street Chargepoints in Harlow in the short term. This is a significant issue in Harlow where 47 percent of residents do not have access to off-street parking – the highest level in Essex. To help support this,

[13] As of January 2025
[14] Climate Change insights, business and transport UK: February 2023 ONS release

v***iable Council owned car parks will have a proportion of electric vehicle charging points within the next 5 years.***

7.24. Eight Chargepoints for 16 vehicles have already been installed at The Stow and Old Harlow. This was funded by the government's On-Street Residential ChargePoint Scheme and bp pulse who the Council is working with to deliver and manage/maintain the charging points. Chargepoints have also been installed at Nexus and Modus buildings at the Enterprise Zone and ***the Council will ensure that further charging facilities are provided at future development stages of the Harlow Innovation Park.***

7.25. Policy IN1 of the Harlow Local Development Plan seeks the installation of EV charging points. To provide more detail of this implementation, ***Harlow Council will be using the latest Essex Vehicle Parking Standards guide which will also set out the requirements and design of EV charging infrastructure in new developments.*** Part S of Building Regulations already requires the provision of charging points or cables for certain new developments. ***In the Councils Local Plan review, officers will consider how Policy IN1 can be strengthened to ensure all opportunities for EV charging infrastructure un new developments is supported.***

7.26. The Council will work with HTS to develop their capacity to undertake future Chargepoint installation and also explore the potential for HTS to become a supplier of services, potentially creating greater income opportunities for the Council. Funding opportunities to support EV infrastructure including LEVI: the Local Electric Vehicle Infrastructure Fund and ORCS: the On-street Residential Charging Scheme will also be explored.

Car Parking

7.27. The Council needs to find a balance when considering the car parking needs of residents, visitors and workers. The Climate Change Strategy recognises the need to reduce the reliance on the car and promote more sustainable modes of travel but reducing parking provision can lead to more on-street parking issues, particularly around key destinations and residential roads and impact on the viability of some businesses and employers. For some residents, travelling by car is the only safe and

easy way to access services and facilities.

7.28. The provision and good management of public car parking in particular can be a very proactive and positive mechanism to support and underpin the day to-day activities and economic vibrancy of our communities. Well used public car parks are positive local economic assets, but underutilised, poorer performing car parks are a wasted community resource. The town centre has several publicly and privately owned car parks with around 3,000 car parking spaces. Some of these spaces are used by employees of businesses in the town centre as well as PAH staff, shoppers and permit holders. There are several factors that will impact upon the future provision of car parking spaces in the town centre:

1) the Town Centre Masterplan SPD and subsequent development briefs have identified some of the parking areas for redevelopment or regeneration
2) PAH will be relocating to the east of the district and parking provided in that location
3) Delivery of improvements to the bus station interchange and the STC network
4) Modal shift targets and reduced reliance on the car, at least for short journeys and trips that can be made by more sustainable modes

To understand the impact these factors will have and to better plan for its longer-term parking needs, the Council will be preparing a Parking Strategy for the town centre.

7.29. A Parking Strategy will help identify how much parking provision is required to maintain a successful town centre and look at what opportunities there are to repurpose space if provision can be reduced. It will also look at how those car parks that are retained can be greener and help support climate change mitigation. This might include landscaping areas, using permeable materials when replacing surfacing, drainage systems and reducing run-off or utilising space for renewables such as solar panels. It will also consider provision of electric charging spaces, more cycle parking areas, opportunities for car club spaces and ensure pedestrian movement around car parks is prioritised and safe. These principles apply to all car parks across Harlow, not just the town centre.

7.30. The Harlow Local Development Plan includes a policy on car parking provision for new planning applications. It refers to the Essex Vehicle Parking Standards as the guide unless otherwise indicated. The policy provides a flexible approach to parking provision allowing the Council to secure more spaces in areas that already experience parking problems or accept fewer parking spaces in areas of good public transport accessibility. The Essex Vehicle Parking Standards has been updated and includes separate guidance for areas across Essex which have more ambitious modal share targets.

7.31. To help reduce the dominance of cars and improve the safe movement of cyclists and pedestrians the Council will ***work with the North Essex Parking Partnership to introduce parking controls in appropriate places.*** This may include measures to deter parking on pavements, more double yellow lines, controlled parking zones including round schools and resident permit areas.

15-minute Neighbourhoods

7.32. Around the world there is growing interest in creating places in which most of people's daily needs can be met within a short walk or cycle. The COVID-19 pandemic lockdowns put a spotlight on the importance of the liveability of neighbourhoods, with people spending more time locally, working at home if possible, using public green space, cycling and walking instead of using cars and connecting with neighbours. The idea of 15-minute neighbourhoods, has been gaining momentum for several years. The benefits of this approach are multiple: people become more active, improving their mental and physical health; traffic is reduced, and air quality improved; local shops and businesses thrive; and people see more of their neighbours, strengthening community bonds.

7.33. Harlow, as a former New Town, was planned so that residential areas were located within walking/cycling distance of neighbourhood centres that provided education, health services, jobs or smaller hatches which serve more day-to-day services. This theme will continue into new strategic sites with the HGGT Vision stating that the Garden Town will comprise a series of self-sufficient neighbourhoods and villages with local centres and smaller hatches at highly accessible locations. Neighbourhoods and villages will be home to a diverse and rich mix of uses and activities with homes, shops and jobs in the same place. This also accords with the Town and Country Planning Association's Garden City Principles. ***The Council, working with a range of partners will ensure that the following principles are delivered within new developments and across Harlow projects as well as consider whether a more formal Local Plan policy is required:***

- ***Support more opportunities to live and work in the Garden Town through actions identified in the Council's Economic Development Strategy and HGGT Economic Framework***
- ***Locate new residential development close to new or existing services and ensure new services are within walking distance of residential development. This includes healthcare, education and day to day services.***
- ***Provide a good network of green spaces in the right locations and ensure they are well connected to new developments***
- ***Ensure well connected paths, streets and spaces which focus on active travel and prioritise pedestrians and cyclists***
- ***Ensure Harlow is a place that serves all parts of the community***
- ***Provide diverse and affordable homes***

7.34. Digital technology is also an important component of reducing vehicle movements and supporting climate change. The HGGT Transport Strategy proposes to support the provision of digital technology, such as "Better Digital" superfast Fibre broadband and 5G coverage to improve the options for remote and flexible working.

Issues and Challenges

7.35. Delivering modal shift requires a substantial behavioural change across the town and will require 'Pull' mechanisms involving the delivery of attractive, accessible and

affordable public transport and 'Push' mechanisms that aim to break private car use habits to deliver it. The measures identified in the HLDP, Climate Change Strategy and HGGT Transport Strategy aim to deliver this modal shift across both new development sites coming forward but also within the existing community and with local businesses as well. Implementing significant changes to the public transport provision in Harlow as well as improved walking and cycling routes requires time and finance from various funding streams including developer contributions and government grants.

7.36. Like most of the objectives, technology will continue evolving and vehicles may become more autonomous or use alternative types of fuels such as hydrogen. The Council must be responsive to these changes, particularly in the provision of supporting infrastructure. Influencing businesses to adopt more sustainable travel patterns for their staff and operations will be challenging. The Council can only encourage companies to implement measures that support modal shift and aim to provide the infrastructure to support this. Every business and their operation can be unique and identifying ways that companies could share journeys will be complex. The Council can however influence the delivery of modal shift in new developments through a range of measures which ensure new residents use sustainable modes from the outset. Ensuring that residents continue making sustainable choices will be paramount and like other development requirements, this is subject to the development being able to viably implement such measures.

7.37. The Council will also have to balance implementing some of these measures with the potential loss of revenue, for example through the reduction in car parking spaces. Another example is the allocation of spaces for electric charging spaces which must be available for free between certain hours in order to receive government grant to install them. However, the Council may be able to receive profit from some Chargepoints. There will also be further ongoing operational costs to maintain and manage chargers which requires additional investment unless they can be run by private companies. Monitoring of EV Chargepoint usage will be particularly important as too many on-street Chargepoints can have an environmental impact and can potentially impact historic/heritage buildings and areas as well.

Table 5

Summary of actions for Objective 5

To achieve a significant modal shift towards more sustainable means of transport

Short term actions	Medium term actions	Long term actions
The Council will work with partners, particularly Essex County Council as the highway authority, to implement the actions identified in the LCWIP and seek funding/contributions from nearby developments to help deliver them.		
Work with partners to deliver the North to Centre element of the STC which connects Gilston with the train station and Burnt Mill roundabout with the town centre.	To include consideration of additional pedestrian crossings across Harlow, including B roads like First Avenue.	
Work with partners to deliver the remaining parts of the STC network ensuring they provide direct, safe and pleasant connections for pedestrians and cyclists and a network of bus routes for a rapid bus transit system		
Request the submission of transport assessments, transport statements, Green Travel Plans and School Travel Plans with planning applications.		
Develop Workplace Travel Programme which will include information and initiatives to support and assist workplaces in encouraging modal shift to active and sustainable travel (identified in HGGT Transport Strategy as an action).		
Investigate opportunities with partners to develop a cycle hire scheme throughout the Garden Town	Work with partners to deliver cycle hire scheme across the Garden Town if evidenced as being viable	
Regenerate and redevelop the bus station area into a Transport Hub and Interchange		
Support Essex County Council with the delivery of bus network improvements identified in the Bus Service Improvement Plan and Harlow Network Review Paper.		
Prepare an Electric Vehicle Charging Strategy (separate or in partnership with Essex County Council).	Work with partners/installers to deliver medium term actions identified in the Electric Vehicle Charging Strategy	Work with partners/installers to deliver any longer-term actions identified in the Electric Vehicle Charging Strategy

All Council owned car parks will have a proportion of electric vehicle charging points within the next 5 years.	Continue providing EV infrastructure at Harlow Innovation Park as phases comes forward	
Prepare Parking Strategy for the town centre. Implement short term actions identified in the Strategy	Implement medium term actions identified in the Town Centre Parking Strategy	Implement any longer-term actions identified in the Town Centre Parking Strategy
Implement parking controls where appropriate		

8. OBJECTIVE 6

To promote reduction of emissions by businesses to Net Zero, supported by a successful green economy

8.1. According to a Business Insights and Conditions Survey (BICS), from 28 November to 11 December 2022, 39% of UK businesses across a range of sectors of the economy reported being very, or somewhat, concerned about the impact climate change may have on their business. The manufacturing industry had the highest proportion of businesses reporting concern, at 52%. Larger businesses with 250 or more employees were more than likely to undertake action on Climate Change including having a climate change strategy in place, publishing an annual sustainability report, and having a target of Net Zero of greenhouse gas emissions in place. Over the last few years, the proportion of businesses who responded to the survey saying they took no action has reduced from 46% to 30%. This means that businesses are starting to make changes that reduce their carbon emissions, the most common of which was switching to LED bulbs.

8.2. SMEs (small to medium sized businesses), although smaller (usually less than 250 employees), can together make a significant impact on reducing carbon emissions as they make up 90% of businesses worldwide. This is 99% in Harlow (UK Business Counts, 2022). Additionally, SMEs are often suppliers to larger companies, providing the services, products and resources that create the corporation's end product. When a corporation has a large carbon footprint, much of that may actually stem from small businesses in their supply chain. Small businesses which choose to invest in reducing their emissions can see numerous short- and long-term business advantages, including:

- Improved efficiency and reduced operating costs
- Complying with carbon legislation
- Lower business risk
- Enhanced access to capital and affordable insurance
- Unique growth opportunities
- More resilient supply chains

8.3. The SME Climate Hub – a UN-backed initiative engaging small and medium-sized businesses in the Race to Zero – conducted a survey to explore what barriers are preventing SMEs from reducing their emissions. Of the 200 SMEs that shared their insights, lack of resources and funding were major issues. Resources included personal issues, time and skills. The SME Climate Hub has been developed to support SMEs who wish to make changes to reduce their carbon emissions including the use of tools and templates that help them to track their emissions and report their progress, training sessions and financial support guides.

8.4. The Council's Economic Development Strategy and HGGT Economic Framework together set out several opportunities and actions that will support growth, employment, skills and the economy in Harlow. This includes construction and retrofit and green industries which is set out in more detail in this objective. It also recognises business support and engagement as being very important and something the Climate Change Strategy notes as being fundamental in educating and supporting businesses wishing to reduce their emissions.

8.5. Various national strategies and, documents have been prepared introducing targets and actions to help and encourage businesses to reduce their carbon footprint. This includes the Ten Point Plan for a Green Industrial Revolution which set out the objectives for more efficient buildings, electric vehicles and use of hydrogen technology. This document also identified opportunities for green skilled jobs to help reach the targets. The Industrial Decarbonisation Strategy sets out actions that will ensure both consumers and investors choose low carbon, removing barriers that prevent industry from securing investment to start their low carbon transition and improve energy efficiency and retrofit readiness across sites. It also sets out actions that support innovation and technology of low carbon solutions as well as developing new skills and unlocking job opportunities.

8.6. This objective also closely links with the previous objective on sustainable transport and modal shift. It is important that businesses play their part in identifying opportunities for their employees and business to utilise more sustainable movement patterns. This includes schemes such as those identified for the Council, including carpools and car sharing schemes, opportunities to work from home, changes to freight/logistics, use of sustainable company cars, electric charging infrastructure and incentives to use public transport.

Council owned commercial units and business lets

8.7. The Council owns and/or leases properties and buildings for companies across the district. This ranges from small units for retailers to larger buildings at the Enterprise Zone, from the Harvey Shopping Centre to individual office units at Harlow Enterprise Hub. Similar to the Council's housing stock it is important to ensure that these buildings are energy efficient and retrofitted where necessary, for example through improved insulation, lighting upgrades, fenestration replacement, air tightness and ventilation.

8.8. Minimum Energy Efficiency Standards (MEES) regulations were introduced in 2018 and required buildings with new tenants to achieve a minimum EPC (Energy Performance Certificate) rating of E before they can be let. From April 2023 this applied to all existing leases. The MEES are set to tighten further requiring a minimum EPC rating of C by 2027 and B by 2030. ***The Council will ensure it complies with these regulations and retrofit its commercial properties to achieve these EPC ratings. This will require a thorough understanding of the current EPC rating of commercial properties the Council owns, what retrofitting may be required and a strategy in place to deliver these improvements by 2030. This should also look at opportunities to include***

renewable energy solutions.

8.9. EPC ratings improve the fabric of the building but there will be opportunities for reducing carbon emitted from the operational side of a business. This depends on the nature and scale of the business that is using the unit but could include the materials they use and where they are sourced, how the end product is packaged, the transport they use for their operation or staff and whether this can be more sustainable, how they communicate with suppliers and customers, opportunities to work from home, waste reduction etc. ***The Council will sign-post new tenants to useful guides and websites, including the Harlow Business Website, which provides useful guidance and support.***

8.10. Essex County Council's business advice pack has been made available on the Harlow Business website. The pack has been developed to help SMEs access relevant information in relation to climate change and sustainability, tips and ideas to help businesses thrive whilst keeping environmental impact low. This can be made available for all SMEs across Harlow and not just those that occupy Council units.

Business Engagement and Support

8.11. Some businesses across Harlow are already considering and implementing actions that reduce their carbon emissions. This is particularly important for Harlow as 15.7% of employees work in high emissions industries. The figure for East of England is 14.5% and apart from Thurrock, Harlow's figure is the highest in Essex and other surrounding areas. Road transport drivers are, nationally, the most common occupation group[15].

8.12. Several businesses have been installing PV panels on roof tops to generate more renewable energy whilst others have been retrofitting buildings to reduce heat and energy demand or increasing recyclable and eco-friendly materials in their operations. Some of the larger, international companies have made pledges, produced targets and developed strategies to become more sustainable. Grants have been made available to support businesses on this journey, particularly for SMEs., including LOCASE (now ended).

8.13. The Council wants to continue supporting and engaging with businesses to help them on their journey to becoming Net Zero and to become more sustainable. ***There are several communication channels that the Council can use to sign-post businesses to available grants, support, up to date guidance and skills that become available. This includes the Harlow Business Forum, social media promotion and the Harlow***

[15] Office for National Statistics – published December 2023

***Business website*.** The website will promote useful events, training, grants, green skills courses and resources.

8.14. Procuring local services and skills can indirectly support carbon reduction. For example, it can reduce journeys if employees or goods and services are locally sourced. The Council has already prepared an Employment and Skills Contributions Position Statement aiming to create local jobs, apprenticeships, work placements and improve skills in new employment developments. A community renewal funded local procurement project finished in December 2022 which showed local businesses how they can build capacity to reach local procurement opportunities. Although this has ended ***the Council will continue to engage with businesses on how they can secure local procurement work, make bids for local work and access into Harlow's larger organisations.***

8.15. Harlow forms part of the Digital Innovation Zone (DIZ) which was established jointly by organisations from business, health, education, local authorities and the voluntary and community sector. ***The Council will work with partners in the DIZ to enhance digital investment and enhancement projects which in turn will support Net Zero targets.*** For example, it could help to implement systems that allow company employees to work more from home or digitise the way small retailers sell or buy goods, remove paper from offices and improve access to online services.

Education and Green Skills

8.16. Green skills is the knowledge, experience, values, attitudes and abilities that are required to support carbon reduction and resource efficiency, increase climate resilience and enhance natural assets. Green skills do not form their own sector, they are relevant to all sectors in the economy.

8.17. The Harlow Economic Development Strategy identifies opportunities for construction/retrofit and green industries to develop in the district. There are huge opportunities through growth coming forward in the town, the Garden Town and the Council's housing stock to develop skills in retrofit and Modern Methods of Construction (MMC). Harlow's existing strengths in life sciences and medtech means that there may be opportunity to develop a convergence of green technologies. ***This Strategy supports the Harlow Economic Development Strategy and actions that strengthen the skills offering in retrofit, MMC and maintenance of Net Zero technology such as electric vehicles and heat pumps in Harlow. It will also continue to support inward investment in medtech, science and engineering companies that could support the green industry and provide more green jobs in the district.***

8.18. In order to deliver this the Council will work ***with partners such as Harlow College and Essex County Council (ECC) to ensure there are appropriate courses available***. Harlow College actively considers how sustainability and green skills can be delivered through curriculums as well as teaching a level of carbon/sustainability literacy within areas of interest. The college has already opened an Electric Vehicle Maintenance Centre and a Renewable Energy Training Centre.

8.19. ECC are one of several providers offering retrofit training, provided through the adult community learning centres. ***The Council will continue to engage with schools on career days and promote green skills and jobs through this and work with businesses to understand what green skills and education on sustainability they require.*** This could include carbon literacy training, apprenticeship schemes, sharing information on courses etc.

8.20. ECC have produced an Essex Sector Development Strategy which sets out five sectors that are likely to grow in Essex. This includes construction, advanced manufacturing and engineering, life sciences, digi-tech and clean energy. These sectors require green and sustainable skills and jobs, like those identified in the Harlow Economic Development Strategy. ECC has also produced a Green Skills Infrastructure Review (March 2022) which looked at the need for green jobs and infrastructure across Essex. If national green skills growth is realised i.e. 2 million green jobs by 2030, Essex could contribute 45,000 of those jobs. ***The Council supports the recommendations in the Review including:***

- ***Setting up an Essex Net Zero Centre of Excellence which would provide online access to a hub of experts and expertise, support and coordinate further education and upskilling, disseminate good practice and consider creating additional learning modules for school leavers.***
- ***Implement communication tools such as a green skills prospectus for older and younger children, a directory setting out courses, green skills business forum, awareness training for residents wanting to know more about green skills and sign-posting documentation for businesses.***

Issues and Challenges

8.21. The Council will continue to support local businesses who wish to make more sustainable choices, improve the efficiency of their buildings and diversify into more green industries. However, the Council has limited powers to make businesses implement these changes and therefore there is a reliance on companies, and to some extent government penalties and legislation, to do this.

8.22. The way that a business operates varies and therefore there is no one size fits all solution for companies achieving Net Zero. It may be that they will never be able to be fully Net Zero or that the technology does not yet exist. This is where short term carbon off-setting solutions could be implemented instead. Implementing such change can be costly, both in terms of making physical changes to operations and buildings but also having the right skills to be able to deliver this change. Nationwide shortages in skills may need further investment before some businesses are able to make significant changes.

8.23. The number of SMEs in Harlow means that this will be an even greater challenge and additional funding opportunities may need to be made available from the government. Furthermore, making some changes, such as energy efficiency changes to buildings, may result in the increase in commercial rents making affordability more

difficult. The Council will need to make sure that implementing such change does not affect the viability of businesses and jobs and the services and facilities available for residents.

Table 6

Summary of actions for Objective 6:

To promote reduction of emissions by businesses to Net Zero, supported by a successful green economy

Short term actions	Medium term actions	Long term actions
Prepare review and strategy for implementing retrofit for Council lets to meet EPC ratings.	Ensure all new Council lets have correct EPC rating by 2030	
Sign-post new tenants to useful guides and websites, including the Harlow Business Website, which provides useful guidance and support and the Essex County Council business advice packs		
Ensure communication channels with businesses continue to promote sustainability, green skills, Net Zero etc and signpost to current and relevant help, guidance and support.		
Engage with businesses on how they can secure local procurement work, make bids for local work and access Harlow's larger organisations.		
Work with partners in the DIZ to enhance digital investment and enhancement projects which in turn will support Net Zero targets		
Work with partners such as Harlow College and Essex County Council (ECC) to ensure there are 'green' courses available. Incentivise students to enrol on classes.		
Promote green skills and careers through engagement with local schools and participating in careers days within schools.		
Engage with local businesses to understand the green skills that they require. Work with partners to ensure that these careers are actively promoted locally and that suitable training and skills provision is provided to support a local pipeline of suitable qualified people to meet these needs.		
Support ECC to set up an Essex Net Zero Centre of Excellence and communication tools/guides		

9. OBJECTIVE 7

To lead and encourage local communities, partners and stakeholders to reduce their emissions and contribute positively to meeting the challenges posed by climate change

9.1. It is important that the Council takes the lead in encouraging communities, partners and stakeholders to reduce their emissions. Actions set out in this Strategy, particularly those actions that centre around Council buildings and operations, will aim to establish good examples and good practice for what could be delivered across the district. The Council's role as waste collector, maintainer of green spaces, local planning authority, developer, communicator, landlord and landowner means that there are lots of opportunities for the Council to pioneer and champion Net Zero and sustainable projects and schemes. Such examples include:

- Ensuring the Council's buildings are as efficient as they can be and use renewable technologies
- Ensuring the Council's housing stock is retrofitted to be more efficient and use renewable technologies
- Ensure the maintenance of green spaces seeks all opportunities to improve biodiversity, nature recovery and create new habitat and wildlife
- Ensure waste collection is as efficient and sustainable as possible and ensure that the Council's buildings and staff recycle wherever possible
- Develop policies that deliver sustainable and efficient buildings in the future and a transport network that supports cycling, walking and public transport
- Ensure procurement contracts consider sustainability and carbon reduction
- Replace fleet with sustainable vehicles and ensure employees make more sustainable choices of commuting
- Become more carbon literate as an authority to genuinely support the community

9.2. Communication with residents and businesses is an important element of getting information and support across. The Strategy has already outlined many channels of communication the Council uses and will use in the future to promote Net Zero and sustainability and there are already many apps, websites and guidance available for residents, small businesses, students and workers. This includes:

- Business channels including Harlow Business website
- School career days
- Essex County Council advice packs
- Apps such as Carbon Cutting Essex
- Workplace travel programmes
- The Council's website with a dedicated webpage and social media, newsletters
- Community day events

Issues and Challenges

9.3. Earlier chapters have already highlighted issues and challenges that the Council will face when trying to deliver climate change measures. Most of this centres around financial challenges, the physical ability to deliver infrastructure to support such measures and the skills and technology available. These challenges will also be faced by residents, stakeholders and businesses. There will also be resource issues in respect of staff time to investigate and implement measures. The Council will need to carefully identify resources to deliver this Strategy so that it can lead and encourage others to make changes as well. However, this is a long-term strategy and therefore there may be opportunities that continue to be made available to support the Council's efforts and measures that others may want to implement. The Council will continue to identify these opportunities, such as bids for skills support, financial support, identification of new technologies, legislation changes etc.

10. Monitoring the Climate Change Strategy

10.1. The Climate Change Strategy will be reviewed every five years to ensure its effectiveness and to reflect changes in any government legislation or guidance or any changes/advances in technologies etc. However, methods, guidance and legislation in respect of cutting carbon emissions is very fluid and therefore when setting actions and priorities the Council will need to consider what is currently happening and accord its strategy and action plans to reflect that. An action plan will be developed and sit alongside the Strategy. This will be more regularly reviewed by the Council and will establish a series of short-term projects and priorities, with their delivery closely monitored. The Carbon Reduction Plan will also be regularly updated and will inform both the action plan and updates to the Climate Change Strategy.

10.2. Climate Change is an important component of the Council's corporate strategy and therefore already monitors the following indicators:

- *Annual carbon emissions from Council buildings and vehicles*
- *Percentage of new dwellings achieving the Optional Technical Housing Standard for water efficiency (no more than 110 litres per person per day)*
- *Amount of land in new development incorporating Sustainable Drainage Systems*
- *Percentage of recycling household waste*
- *Change in number of Local Sites in Positive Conservation Management*

Carbon Reduction Plan Target

10.3. The Council has prepared and will continue to update a Carbon Reduction Plan which looks specifically at reducing carbon emissions from Council buildings and operations. The latest version is for the period 2021-2026 and the Council will look to update this document every five years. *The Plan includes a target of reducing the Council's carbon emissions by 50% from a baseline of 2,700 tonnes of CO_2 i.e. the target is to reach 1,350 tonnes of CO_2 by 2026.*

Tyndall Carbon Budget Reports

10.4. Tyndall Carbon Budget Reports present recommended climate change commitments for UK local authority areas that are aligned with the commitments in the United Nations Paris Agreement, informed by the latest science on climate change and defined by science-based carbon budget setting.

10.5. The Reports can be used to calculate carbon budgets for any part of the United Kingdom from local authority area scale up to regions and devolved administrations. The carbon budgets translate the "well below 2°C and pursuing 1.5°C" global temperature target and equity principles in the United Nations Paris Agreement to sub-national areas within the UK.

10.6. The report provides Harlow with budgets for carbon dioxide (CO_2) emissions and from the energy system for 2020 to 2100. For Harlow to make its 'fair' contribution towards the Paris Agreement, it must stay within a maximum cumulative carbon dioxide emissions budget of 2.5 million tonnes ($MtCO_2$) for the period 2020 to 2100. At 2017 CO_2 emission levels, Harlow would use this entire budget by 2028. Therefore, the document recommends that the Council *delivers cuts in emissions averaging a minimum of -11.9% per year.* The report notes that this will require local and national action and could be part of a wider collaboration.

Annual Monitoring of Council's Emissions

10.7. The Council monitors its greenhouse gas emissions year on year by recording the energy and fuel we use to carry out our services (including HTS (Property and Environment) Ltd and Veolia Fleet). This uses conversion factors provided by the Department for Environment, Farming and Rural Affairs (DEFRA) to convert activity data (such as litres of fuel used, or number of miles driven) into kilograms of carbon dioxide equivalent (CO_2e). The latest emissions are set out on the Council's website as are the emissions from previous years. It is presented under three scopes:

1. Scope 1 (direct emissions) – emissions produced by council owned vans and minibuses, as well as fuel combustion. This data is taken from the energy suppliers for gas and transport fuel consumption for operation vehicles taken from mileage logbooks.
2. Scope 2 (energy indirect) – emissions from electricity with data taken from electricity suppliers and metre readings.
3. Scope 3 (other indirect) – emissions from extraction, refining and distribution of fuels, as well as non-council owned transport such as Veolia fleet and staff business travel. This data is taken from car business mileage payment data for employee claims and transport fuel consumption from HTS (Property and Environment) Ltd and Veolia fleet taken from mileage logbooks.

Council Climate Action Scorecards

10.8. Climate Emergency UK (CE UK) was set up in response to the climate emergency declarations that councils started making from the end of 2018. CE UK began by collecting these declarations, and the Climate Action Plans that followed, on its website. They then published Council Climate Plan Scorecards in January 2022, which measure the strength of councils' written climate action plans. CE UK publish the results of Council Climate Action Scorecards, which help to measure actual completed action towards Net Zero from all UK councils. The Council Climate Action Scorecards provides credible and transparent data on council climate action and allow councils to use the results to improve their current Climate Action Plans and implement effective policies to help them reach net-zero.

10.9. Harlow Council supports the Scorecard process as it not only provides useful indicators to help monitor particular goals, it also helps monitor successes against other local authorities or identifies weaker areas which the Strategy can consider.

Monitoring the Objectives

10.10. There are several indicators the Council can use to monitor the Climate Change Strategy's seven objectives. These indicators are set out in table 7 below and will be reviewed periodically. The results will inform any update to the Climate Change Strategy, the action plans and individual strategies/projects.

10.11. It will be important that the Council identifies new and innovative ways to monitor the indicators and use tools and benchmarks to support this process. For example, the Council will look at the best methods for monitoring the effectiveness of retrofitting its housing stock and the implementation of sustainable measures through the housebuilding programme. This includes engagement with tenants or the use of digital technologies to understand if their bills have decreased, if their home is quicker to heat, their energy reduced and whether sustainable measures are easy to use and service.

Table 7: Monitoring Indicators		
Objective	**Indicator**	**Possible sources of information**
To achieve Net Zero emissions from the Council's operational buildings, land, vehicles, and services, including those provided by service delivery partners	• Reduce emissions from operational buildings (already monitored) • Reducing staff vehicle mileage • Increase recycling rate from Council's buildings and operations • Reduce water use from Council's buildings and operations • Increase number of carbon literate officers • Increase number of tree planting and monitor resulting carbon off-setting • Reduce carbon emissions from HTS (already monitored)	• Mileage logbooks • EPC rating improvements • Metre readings • Carbon off-setting certificates, carbon storage calculators for tree planting • Electric/gas supplier data • Greenhouse gas accounting tools
To achieve Net Zero emissions from all homes and the built environment within Harlow	• Increase number of Council homes retrofitted and reduce gas/electricity consumption • Increase number of new Council homes made to Net Zero or include energy efficient measures • Increase number of staff/employees upskilled in installing and maintaining sustainable technologies/measures in new homes • Increase number of new private homes made to Net Zero or include energy efficient measures beyond Building Regulations • Increase number of new homes using 110 litres of water per person per day or less	• EPC rating improvements • Electric/gas supplier data • Tenancy questionnaires • Review of outgoings on tenancy bills • Carbon emission calculators • Monitor information from planning consents • Monitor after completion whether new homes comply with policies (both regulated and unregulated energy)
To reduce consumption of resources, reduce waste and increase reuse and recycling in Harlow	• Increase recycling rate • Decrease food waste	• Waste emissions calculators • Information from waste collections and recycling centres
To adopt good stewardship of the natural environment across the town to support both climate change adaptation and mitigation	• Increase number of tree planting and monitor resulting carbon off-setting • Carbon reduction through green measures/maintenance • Number of new parks/refurbishment of parks built using sustainable materials	• Carbon off-setting certificates, carbon storage calculators for tree planting • Annual monitoring of green spaces in new developments • Wildlife site reviews and habitat/tree management surveys

	• Increased provision of new green spaces, Green and Blue Infrastructure in new developments • Increase in biodiversity (i.e. Biodiversity Net Gain(BNG)) • Reduction in flood risk areas and surface water flooding	• BNG monitoring templates • Updated flood maps produced by the LLFA and Environment Agency and more detailed flood modelling undertaken
To achieve a significant modal shift towards more sustainable means of transport	• Increase in cycling and walking rates • Increase in bus usage • Increase in modal choice towards sustainable modes • Decrease in emissions from vehicles and reduction in pollution • Improvements in health • Increase in electric vehicle charging points and supporting infrastructure	• Carbon calculators and Greenhouse gas accounting tools • Surveys of transport users • Car counting software • Monitor planning consents for any new electric infrastructure • NHS health profile data
To promote reduction of emissions by businesses to Net Zero, supported by a successful green economy	• Improved EPC ratings of both Council owned commercial properties and private commercial properties • Reduced emissions from commercial sectors • Increase in 'green jobs' or courses offering green skills/sustainability as part of curriculum. • Increase in career days/events offered to schools.	• Number of courses offering 'green skills/ sustainability' within curriculum • EPC rating improvements & gas/electric supplier data of the Council's commercial lettings • Number of local SMEs signed up to SME Climate Hub[16] • Possible job postings of careers that are 'green skills'

[16] Where information is available

LGA Indicators and Benchmarking

10.12. The Local Government Association collates sources from several government Departments on a number of indicators related to Climate Change and can compare these with similar areas[17]. The indicators most relevant to the Climate Change Strategy and Harlow are set out in table 8 and this can be annually monitored and used as a useful benchmarking tool. This will indicate which actions in the Climate Change Strategy are being successful. Indicators include provision of electric charging points, the improvement of Council housing stock, opportunities for green job creation, CO_2 emissions and recycling levels.

10.13. Some key headlines from the most recent indicators (table 8) show:

- Low number of electric charging points – possibly as a result of the design and layout of the properties in Harlow, costs of installation and uptake.
- Lower uptake of Workplace Charging Scheme sockets installed – possibly as a result of the nature of industrial/distribution uses in Harlow, the viability or capability to install sockets.
- Lower recycling rates but significantly less household waste
- High delivery of Council housing stock improvements i.e. window replacements, insultation and boiler replacements, but not renewable energy technologies
- Slightly higher mortality rate attributed to air pollution
- Overall low gas and methane emissions however higher than average emissions from the industrial sector
- Low domestic gas consumption but higher non-domestic gas consumption in comparison to the East of England – possibly due the nature of Harlow's economy and business or the age of its stock
- Both low domestic and non-domestic electricity use
- Lower fuel poverty than East of England and national averages
- Not considered an area of future green skills/jobs growth

[17] LGInform

Table 8: LGA Indicators for Climate Change						
INDICATOR	**HARLOW SCORE**	**LOCAL AUTHORITIES IN EAST OF ENGLAND MEAN SCORE***	**ENGLISH AUTHORITIES MEAN SCORE****	**YEAR OF SCORE/ PERCENTAGE/ RESULT**	**NOTES OF INDICATOR**	**SOURCE**
Publicly available electric vehicle charging devices at all speeds per 100,000 population	41 devices	51 devices	95 devices	Q2 April – June 2024		Department for Transport, Electric vehicle charging infrastructure statistics, Publicly available electric vehicle charging devices at all speeds per 100,000 population
Workplace Charging Scheme: sockets installed (cumulative number of installations under the scheme)	110 sockets	154 sockets	170 sockets	Q3 Jul-Sep 2024	WCS is a voucher-based scheme that provides support towards the up-front costs of the purchase and installation of electric vehicle chargepoints. Any business, charity or public authority is eligible to claim the grant towards the cost of installing electric vehicle chargepoints, providing they have dedicated off-street parking for staff or fleet use only.	Department for Transport, Electric vehicle charging infrastructure statistics, Workplace Charging Scheme: cumulative number of sockets installed
Total household waste in tonnes	28,132 tonnes	91,117 tonnes	90,773 tonnes	2022/23		Department for Environment, Food and Rural Affairs, Local authority collected waste management
Percentage of waste that is recycled	39.3%	44.03%	41.26%	2022/23		
Energy Efficiency of LA owned stock: Replacement of window	131 dwellings	70 dwellings	86 dwellings	2023/24	Number of dwellings owned by the local authority where windows have been replaced, either with single glazing or double glazing windows	Department for Levelling Up, Housing & Communities.
Energy Efficiency of LA owned stock: Replacement of boilers	210 dwellings	150 dwellings	231 dwellings	2023/24		
Energy Efficiency of LA owned stock: Installation of insulation	286 dwellings	60 dwellings	85 dwellings	2023/24	This includes solid walls, cavity walls, lofts, and floors. An individual dwelling may be counted under more than one category of works	
Energy Efficiency of LA owned stock: Installation of renewable technologies	0 dwellings	17 dwellings	17 dwellings	2023/24	Renewable technologies are defined as being powered by abundant, free sources of energy such as the sun, the wind or even plant and animal matter, as opposed to generating energy from non-renewable sources like fossil fuels. It also includes low carbon technologies such as heat pumps which are not completely renewable because they still require input of electrical energy but at much smaller scale than conventional technologies.	
Fraction of mortality attributable to particulate air pollution	6.9% of adult mortality as a result of long-term exposure particulate air pollution	6.2%	5.7%	2022	This is defined as mortality burden associated with long-term exposure to anthropogenic particulate air pollution at current levels, expressed as the percentage of annual deaths from all causes in those aged 30+. Caution is needed when considering apparent trends over time	Office for Health Improvement and Disparities
Total greenhouse gas emissions (estimate in kilotonnes of carbon dioxide emissions from all sectors)	419 kilotonnes CO_2 emissions by sector below (2022): Industry: 109 kilotonnes Commercial: 39 kilotonnes Domestic: 100 kilotonnes Public sector: 15 kilotonnes	801 kilotonnes	983 kilotonnes	2022	This is defined as is the grand total of industry, commercial, public sector, domestic, transport, land use, land use change and forestry (LULUCF), agriculture, and waste management. The purpose of these estimates is to assist those using local emissions accounting as a tool in developing emissions reduction strategies. It should be noted that circumstances vary enormously between authorities, and local authorities have relatively little influence over some types of emissions, and for these reasons these statistics should be interpreted with caution.	Department for Energy Security and Net Zero

	Transport: 104 kilotonnes Waste management: 48 kilotonnes Agriculture: 4 kilotonnes				Carbon dioxide is reported in terms of net emissions, which means total emissions minus total removals of carbon dioxide from the atmosphere by carbon sinks. Carbon sinks are any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere.	
Total CH4 (methane) emissions (for all sectors)	55 kilotonnes of carbon dioxide equivalent emissions	84 kilotonnes of carbon dioxide equivalent emissions	118 kilotonnes of carbon dioxide equivalent emissions	2022		
Total consumption of domestic and non-domestic (commercial/ industrial) gas	372 Gigawatt hours of domestic gas 287 Gigawatt hours of non-domestic gas	570 Gigawatt hours of domestic gas 267 Gigawatt hours of non-domestic gas	824 Gigawatt hours of domestic gas 452 Gigawatt hours of non-domestic gas	2023	This data is annualised and weather corrected. The consumption period is normally between mid-May to mid-May. This data includes all gas distributed through all Local Distribution Zones (LDZ), and gas consumers whose consumption data is recorded daily and are known as Daily Metered (DM) customers.	Department for Energy Security and Net Zero
Total consumption of domestic and non-domestic (commercial/ industrial) electricity (Gigawatt hours)	123 Gigawatt hours of domestic electricity consumption 244 Gigawatt hours of non-domestic electricity consumption	221 Gigawatt hours of domestic electricity consumption 302 Gigawatt hours of non-domestic electricity consumption	281 Gigawatt hours of domestic electricity consumption 433 Gigawatt hours of non-domestic electricity consumption	2023	The data is annualised and is not weather corrected. The consumption is based on Non-Half Hourly (NHH) meters (these are the standard domestic and Economy 7 type tariffs) and is for a time period normally of 31st January to 30th January. The dataset also includes an aggregated total of consumption for unallocated, that is, consumption that was not able to be matched to an area due to incomplete or a lack of postcode information (this usually accounts for less than 1 per cent of consumption).	
Number of households in fuel poverty (using the Low Income Low Energy Efficiency (LILEE) measure)	3260 households (or 3.5%)	5984 households	10,727 households	2022	Since 2021 the LILEE indicator considers a household to be fuel poor if: (i) it is living in a property with an energy efficiency rating of band D, E, F or G as determined by the most up-to-date Fuel Poverty Energy Efficiency Rating (FPEER) methodology; and (ii) its disposable income (income after housing costs (AHC) and energy needs) would be below the poverty line. The government is interested in the amount of energy people need to consume to have a warm, well-lit home, with hot water for everyday use, and the running of appliances. Therefore, fuel poverty is measured based on required energy bills rather than actual spending. This ensures that those households who have low energy bills simply because they actively limit their use of energy at home. Fuel poverty statistics are based on data from the English Housing Survey (EHS). Estimates of fuel poverty at the regional level are taken from the main fuel poverty statistics. Estimates at the sub-regional level should only be used to look at general trends and identify areas of particularly high or low fuel poverty. They should not be used to identify trends over time.	
Estimate of total direct jobs in low carbon and renewable energy sector at 2050	At 2050 there is estimated to be 1,302 direct jobs	At 2050 there is estimated to be 2,651 direct jobs	At 2050 there is estimated to be 4,882 direct jobs	Estimated at 2050	This analysis was produced using existing and credible precedents for estimating employment based on	Local Government Association

Estimate of total direct jobs in low carbon electricity sector at 2050	At 2050 there is estimated to be 252 direct jobs	At 2050 there is estimated to be 757 direct jobs	At 2050 there is estimated to be 1,319 direct jobs		employment multipliers and demand uptake for a range of low-carbon and renewable energy sectors.	
Estimate of total direct jobs in Solar PV sector at 2050	At 2050 there is estimated to be 246 direct jobs	At 2050 there is estimated to be 440 direct jobs	At 2050 there is estimated to be 493 direct jobs			

***Single tier and district authorities in the East of England Region**

**** All English Local Authorities (sample of 296 authorities)**

Glossary

Biodiversity Net Gain An approach to development, and/or land management, that aims to leave the natural environment in a measurably better state than it was beforehand.

Carbon Literacy Carbon Literacy is the awareness of climate change and the climate impacts of humankind's everyday actions.

Carbon Off-setting Carbon offset is a reduction or removal of emissions of carbon dioxide or other greenhouse gases made in order to compensate for emissions made elsewhere.

Carbon Sequestration Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide.

Circular Economy A circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible.

Climate Change Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, but since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels (like coal, oil and gas), which produces heat-trapping gases.

EPC Rating A review of a property's energy efficiency.

Fabric First Approach The fabric first approach to building design means maximising the performance of the components and materials that make up the building fabric rather than relying on post construction additions such as photovoltaics or energy saving technology.

Fossil Fuels A fossil fuel is a hydrocarbon-containing material such as coal, oil, and natural gas, formed naturally in the Earth's crust from the remains of dead plants and animals that is extracted and burned as a fuel. Fossil fuels may be burned to provide heat for use directly, to power engines, or to generate electricity.

Greenhouse Gas Emissions/Carbon Emissions Greenhouse gases in the earth's atmosphere trap heat. Human activities (or emissions) have increased these gases including Carbon Dioxide which is the main greenhouse gas resulting from human activities and accounts for more than half of warming and a significant worsening of air quality.

Green Economy/Green Skills Green skills are knowledge, experience, values, attitudes and abilities that support carbon reduction and resource efficiency to increase climate resilience and enhance natural assets. Green skills do not form their own sector, they are relevant to all sectors in the economy.

Green Infrastructure Green Infrastructure is multi-functional natural and man-made urban and rural green space, including parks, playing fields, woodlands, allotments and wildlife corridors, rivers, canals, lakes and other bodies of water. It also includes measures to assist adaptation to climate change, such as green roofs, green walls, rain gardens and ponds.

MedTech This refers to Medical Technology, a sector in the healthcare industry used to connect patient care with technology

Modal Shift Modal shift means a change from one form of transportation to another (usually a more sustainable alternative), for example, switching a delivery van for an e-cargo bike.

Modern Methods of Construction Modern methods of construction is a process which focuses on off-site construction techniques, such as mass production and factory assembly, as alternatives to traditional building.

MVHR Mechanical Ventilation with Heat Recovery (MVHR) is a continuous source of ventilation that extracts stale, moisture-laden air from a building and resupplies fresh, filtered air back in, resulting in a comfortable and condensation free environment all year round.

Net Zero The balance between the amount of greenhouse gas (GHG) that's produced and the amount that's removed from the atmosphere. It can be achieved through a combination of emission reduction and emission removal.

Operational Carbon Operational carbon refers to the total from all energy sources used to keep our buildings warm, cool, ventilated, lighted and powered. Typical energy sources for this purpose are electricity and natural gas, with occasional contributions from fuel oil, propane and wood.

Passivhaus Passive house is a voluntary standard for energy efficiency in a building, which reduces the building's ecological footprint. It results in ultra-low energy buildings that require little energy for space heating or cooling.

Retrofit Retrofitting is the act of fitting new systems designed for high energy efficiency and low energy consumption to buildings previously built without them.

Stewardship Stewardship provides for the long-term management and control of assets that are important to a sustainable new community, and ensures any long-term costs associated with management and maintenance are factored into the initial project.

Sustainable/Sustainability Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs.

Sustainable Drainage A sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques and to mimic natural drainage as closely as possible.

United Nations Paris Agreement A legally binding international treaty on climate change, adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. Its overarching goal is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.”

Urban Temperature Sometimes referred to as the Urban Heat Island Effect, it is a metropolitan or urban area which is a lot warmer than the rural areas surrounding it. This occurs when cities replace natural land cover with dense concentrations of pavement, buildings and other surfaces that absorb and retain heat.

Useful Links

Tyndall Centre Carbon Budget Report

Harlow Carbon Reduction Plans

HGGT Transport Strategy

Harlow Community Engagement Strategy

Carbon Literacy Project

Essex Forest Partnership and Initiative

Harlow Procurement Strategy

Decent Homes Standard

Harlow Local Development Plan and Harlow Design Guide Addendum

HGGT Sustainability Checklist

Cotswold Council Toolkit

Essex County Council Advice Packs

Essex Climate Action Plan and Report

Essex Design Guide

Streets for All

Essex Net Zero Specifications Guide (Residential)

Essex Solar Design Guide

Essex Embodied Carbon Policy Study

Essex Planning Policy Position for Net Zero Carbon

Sustainable Essex

Water Strategy for Essex

Governments 25 Year Environment Plan

Government's Resource and Waste Strategy

2020 Waste Economy Regulations

Waste Strategy for Essex

Love Essex

Green Infrastructure and Public Open Space Supplementary Planning Document

Essex County Council Green Infrastructure Strategy

Essex County Council Green Infrastructure Standards Guidance

Harlow and Gilston Garden Town (HGGT) Green Infrastructure Framework

HGGT Stewardship Charter

Local Cycling and Walking Infrastructure Plan

Essex Bus Service Improvement Plan

Essex Vehicle Charging Strategy (consultation version)

Essex Vehicle Parking Standards

North Essex Parking Partnership

Harlow Economic Development Strategy

SME Climate Hub

Government's Ten Point Plan for a Green Industrial Revolution

Government's Industrial Decarbonisation Strategy

Harlow Business website

Essex Sector Development Strategy

Essex Green Skills Infrastructure Review

LGA Climate Change Statistics

Harlow Surface Water Management Plan