Overview and Scrutiny Committee – Inform and Debate

10 March 2025

Responding to the climate and ecological emergency and meeting the Council's biodiversity duties

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1 Context

1.1 On 16 July 2019, recognising the detrimental impact locally from changes in climate and extreme weather events, Chelmsford City Council declared a Climate and Ecological Emergency signalling that urgent action would be taken to address these concerns and to take measures to try to make the Council's activities and operations net-zero carbon by 2030. The Declaration that was agreed is set out in Appendix A.

1.2 In the future it is anticipated that Chelmsford and surrounding areas will experience warmer and wetter winters, hotter and drier summers, and more frequent intense weather events. Some modelling suggests that by 2080 average summer temperatures in the Southeast of England could rise by up to 3.9°C and there could be a 23% reduction in average summer rainfall.

1.3 In 2018 a local climate impact assessment was undertaken for Chelmsford and the Essex area more generally. This described and evaluated the potential implications of climate change on the city area and provided an assessment of the key risks arising from them.

1.4 In the longer term, the following climate changes can be expected in the Chelmsford area:

- Warmer, drier summers
- Milder, wetter winters
- Rising sea levels
- Significant decrease in soil moisture content in the summer and autumn

1.5 Chelmsford and the surrounding areas are also likely to experience greater weather extremes:

- More very hot days
- More frequent intense downpours of rain and extreme weather events
- Shorter return periods for high water levels at the coast

1.6 The key risks due to climate change in this area are considered to include[1]:

- The impact of climate variations on vegetation, habitats and land management practices
- Impacts on public health from hotter summers and severe weather events (for example increased pests and disease, excessively hot or cold homes and workplaces)
- Damage to buildings from excess heating and extreme weather events (for example cracking in surfaces from excess heat or freeze thaw action, flooding etc.)
- Disruption to public transport, highways and utilities from extreme weather events including the availability, security and affordability of energy supplies
- Water supply issues and reduced water quality and poor ecological quality of rivers associated with low water levels and potentially reduced river flow
- River flooding in central Chelmsford, particularly where the Rivers Wid, Can and Chelmer converge, but also potentially at South Woodham Ferrers from the River Crouch – the number of homes at risk of flooding in Essex could double by 2050
- Potential delays or disruption to supply chains and negative market impacts

1.7 It was recognised that activities to support the Climate and Ecological Emergency Declaration needed to be ambitious and far reaching, focused on achieving beneficial impacts in the longer-term, whilst instigating more immediate changes to avoid 'business as usual' in the interim. The initial priorities identified were:

- Creating a new awareness and recognition of key environmental imperatives, to encourage more sustainable lifestyles and to help create a more sustainable environment for the City of Chelmsford and surrounding areas
- Developing a comprehensive, cohesive and prioritised environmental action plan for the Council that addresses the key elements of the Climate and Ecological Emergency Declaration
- Promoting the 'green and sustainable' agenda in Chelmsford, sponsoring a programme of activities designed to engage, inspire and support local people,

[1] Source: Essex EPACC group and Essex Climate Action Commission Interim Report July 2021

communities, businesses and organisations in meeting their own carbon reduction challenge

1.8 In January 2020 the Council agreed a Climate and Ecological Emergency Action Plan focusing on:

- Fundamentally changing the Council's policies, approach and practices with the objective of reducing carbon emissions, lowering energy consumption, eliminating unnecessary reducing waste and tackling pollution, thereby helping to create a more sustainable future for Chelmsford and the surrounding areas
- Updating planning policies and guidance so that strategic growth areas are supported by a low carbon infrastructure, to ensure that new dwellings and commercial premises incorporate the latest sustainable design features to reduce carbon emissions and limit the use of natural resources and to achieve a 'biodiversity net gain' for all new developments
- Improving the habitat and ecological value of green spaces and river corridors, promoting greater biodiversity across the area, creating bigger, better connected and sensitively managed habitats and natural spaces, undertaking a greening programme to significantly increase the amount of woodland and the proportion of tree cover in Chelmsford
- Creating opportunities for people, local organisations and businesses to get involved in caring for their environment and changing their behaviours to help create a more sustainable future

1.9 Progress on the original Climate and Ecological Emergency Action Plan was reviewed at Overview and Scrutiny Committee on 1 February 2021 and 26 September 2022.

1.10 Subsequently these priorities have been embedded in the Council's refreshed corporate plan 'Our Chelmsford Our Plan' [December 2023]. Prioritising sustainable and environmentally responsible growth, creating a distinctive sense of place, making the area more attractive, and strengthening the Council's green credentials, the key strategic actions identified include:

- Setting out the approach and planning principles to guide development, and housing and economic growth, that is sustainable, creating greener, fairer and more connected communities [A]
- Promoting a net zero carbon future for new development through updated planning policies and planning guidance [A2, D29, E33]
- Managing in a sustainable way to help lower energy consumption, reduce waste and improve air quality, preserving natural resources and decreasing carbon and greenhouse gas emissions [D, D25, D26, D30]
- Encouraging people, communities and businesses to take responsibility for, and become actively involved in caring for their local environment, lessening their environmental impact, reducing the consumption of natural resources, and adopting more sustainable ways of living and working [D27, D28, E37]
- Protecting, expanding and improving the quality and accessibility of green spaces, improving wildlife habitats and increasing biodiversity, connecting people with the natural environment [E31, E33, E34, F40, F42]

- Improving the environmental quality, attractiveness, safety, leisure and recreational potential of public spaces, green areas, rivers and waterways [E35, E36, F39, F41, H53]

1.11 In 2020 Essex County Council launched the Essex Climate Action Commission, comprising independent experts to advise on the action that could be taken to deliver a cleaner and greener Essex. In July 2021 the Commission published a report '*Net Zero: making Essex carbon neutral*' which set out over 100 recommendations for action. Essex County Council's response to this was to produce a '*Climate Action Plan*' in November 2021 which was updated in July 2023. The priorities included in this Plan centre around:

- Boosting jobs and growing a sustainable economy
- Extending green infrastructure, including major tree planting initiatives, achieving biodiversity net gain, and flooding and water management
- Measures to make the built environment more sustainable include low carbon solutions for new homes
- Energy efficiency and renewable energy
- Reducing waste and supporting reuse and recycling
- Transport and active travel, including electric charging infrastructure and impacts on air quality

1.12 The Essex Climate Action Plan has similar themes and priorities to those of the City Council. The County Council publish an annual report on the Essex Climate Action Plan – the latest one being for the period 2023-24. Essex Climate Action Annual Report 2023 to 2024

1.13 On 9 November 2021 the Environment Act 2021 received Royal Assent providing a new framework and statutory basis for environmental protection in the UK. The Environment Act amends the requirements of the Natural Environment and Rural Communities Act 2006.

1.14 The Act provides powers for the Government to set legally binding environmental targets [which have now been published[2]] for air quality, water quality, biodiversity including net gain from development and waste reduction among others. These targets include halting the decline in species populations by 2030, increasing populations by at least 10% to exceed current levels by 2042, delivering net zero ambitions and boosting nature recovery by increasing tree and woodland cover to 16.5% of total land area in England by 2050.

1.15 Although pre-dating the new statutory duties and powers, the City Council's environmental agenda, approach and plans align closely with the provisions of the Environment Act 2021.

1.16 The Climate Change Committee is an independent, statutory body, established under the Climate Change Act 2008 to advise the United Kingdom and devolved Governments on both the mitigation [reducing emissions] and adaptation [increasing resilience] to climate change. The Committee sets 'carbon budgets' designed to place a limit or ceiling on the

[2] Environmental Improvement Plan 2023 [Department for Environment Food and Rural Affairs, updated February 2023]

level of economy-wide emissions that can be emitted in a five-year period to reduce greenhouse gas emissions.

1.17 The Climate Change Committee's '*Sixth Carbon Budget*'[3] was published in December 2020. Of relevance to the City Council are measures to reduce both direct and non-direct CO_2 emissions from buildings, the reduction of and increased recycling of waste, the decarbonisation of transport and vehicles and the increase in urban green infrastructure. The Sixth Carbon Budget sets pathways for the changes that will be needed to achieve the carbon reduction targets, such as limiting the installation of fossil-fuel boilers and accelerating the switch to ultra-low emission vehicles, among others.

1.18 On 256 February 2025 the Climate Change Committee published the Seventh Carbon Budget to cover the period 2038-2042.

2 Securing sustainable housing and economic growth and promoting net-zero carbon development

2.1 As part of the review of the adopted Local Plan, the City Council published a 'Topic Paper' which set out how the review of the Local Plan has been developed in relation to Climate Change. Topic papers have been refreshed and updated at each stage of the Local Plan Review process to ensure the latest information/position is available. The latest Pre-Submission (Regulation 19) Climate Change Topic Paper was published in February 2025.

2.2 The adopted Local Plan was examined under the 2012 National Planning Policy Framework (NPPF). There have subsequently been updates to the NPPF and the Review of the Local Plan Pre-Submission Local Plan has been considered against the requirements of more recent national planning policy and guidance including the 2023 NPPF.

2.3 The revised National Planning Policy Framework published on 12 December 2024 provides transitional arrangements for Councils that are well advanced with plan preparation under the previous system. The content and timetable of the Pre-Submission Local Plan can comply with these transitional arrangements. This means that the Pre-Submission Local Plan would be examined under the December 2023 NPPF. The approach set out in the topic papers therefore accords with the December 2023 update of the National Planning Policy Framework

2.4 The Topic Paper provides the background and context for how climate change has been considered during the review of the adopted Local Plan helping to formulate a development strategy to support the transition to a low carbon future, in particular:

- The approach to implementing the provisions of the Climate Change Act 2008, [establishing a legally binding target to reduce UK greenhouse gas emissions by 100% in 2050 compared to 1990 levels] and the Climate Change Committee's Sixth Carbon Budget [published in December 2020], setting out the recommended pathways to achieve a 78% reduction in UK emissions by 2035 compared to 1990 levels.
- Implementing the Council's Climate and Ecological Emergency Action Plan

[3] The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf

- Updating land use proposals and planning policies to assist in combating the impact of climate change through mitigation and adaptation

2.5 A comprehensive 'Integrated Impact Assessments' (IIA) has been carried out on an ongoing basis as the Review of the Local Plan has progressed. The IIA has assessed the following aspects of sustainable development:

- Sustainability Appraisal (SA)
- Strategic Environmental Assessment (SEA)
- Habitats Regulations Assessment (HRA)
- Health Impact Assessment (HIA)
- Equality Impact Assessment (EqIA)

2.6 The review of the Local Plan takes account of national planning policy and guidance, new corporate priorities, an updated evidence base, and comments received following the Issues and Options and Preferred Option Local Plan consultations.

2.7 Full details of the approach to Climate Change in the Review of the Local Plan are set out in the Pre-Submission (Regulation 19) Climate Change Topic Paper, with the relevant policies included in full in the Pre-Submission (Regulation 19) Local Plan.

2.8 A summary of the relevant policies in the Pre-Submission (Regulation 19) Local Plan are set out in the table below, including a summary of how these have been amended from the adopted Local Plan:

Pre-Submission (Regulation 19) Local Plan Policy	**Summary**
Strategic Policy S1 – Strategic Priorities	The Spatial Principles set out in this policy guide how the Strategic Priorities and Vision in the Local Plan will be achieved. They underpin spatial planning decisions and ensure that the Local Plan focuses growth in the most sustainable locations. They contribute to delivering the Council's response to the declared climate and ecological emergency by introducing greater emphasis on the natural environment and reducing carbon emissions.
Strategic Policy S2 – Addressing Climate Change and Flood Risk	Amended to introduce the move to a 'net zero carbon' future and introduces further enhancements to the Local Plan regarding addressing Climate Change, including: ▪ Development that results in net zero carbon emissions and exceeds Building Regulations Parts F and L in accordance with Policy DM31 ▪ A greater emphasis on providing active transport to support development ▪ Introducing the need to minimise over-heating from development

	▪ Expanding the policy to protect and provide well-connected multifunctional green infrastructure, including new woodland creation and tree planting ▪ Reference added to include integrated water management techniques, and the latest technical guidance including from the Environment Agency and the Construction Industry Research and Information Association
Development Management Policy DM31 – Net Zero Carbon Development (In Operation)	A new development management policy requiring new homes and buildings to be net zero carbon in operation from the outset and to be built to a robust net zero standard accounting for all a buildings energy use. This requires development to achieve energy efficiency standards above current Building Regulations Parts F and L.
Development Management Policy DM25 – Sustainable Buildings	Amended to increase the water efficiency to require all new dwellings to meet the tighter standard of 90 litres/person/day. Adds a new requirement for new dwellings to provide rainwater harvesting on site.
Development Management Policy DM17 – Trees, Woodland and Landscape Features	Introduces the policy requirement for three new trees to be planted per net new dwelling for all new housing development. Requires new strategic scale employment and infrastructure development (defined as development in excess of 1,000 sqm or 0.1 hectares) to plant a significant number of new trees as part of landscaping requirements for such developments.

Air quality

2.9 Air quality is an important indicator of the level of damaging vehicle and CO_2 emissions, and pollution generally in the atmosphere, which can be a contributing factor to many health problems, particularly respiratory conditions, as well having a detrimental impact on ecosystems, biodiversity and valued habitats.

2.10 The Council agreed an Air Quality Strategy in June 2022 which meets the requirements of the Air Quality (England) Regulations 2000, and the monitoring required to ensure that national air quality objectives are not exceeded. The Strategy sets out the local air quality management framework for the area, including air quality monitoring and the declaration of any areas where air quality management plans need to be put in place if air quality objectives are not met.

2.11 Air quality in Chelmsford and surrounding areas is generally good and improving to such an extent that the air quality management areas formerly declared around Baddow Road and the Army and Navy junction [2005] and at A414 Maldon Road, Danbury [2018] were revoked in January 2024.

2.12 Real time air quality monitoring is publicly available through an air quality dashboard and 'pollution' forecast hosted on the Love Your Chelmsford website Air Quality Dashboard Chelmsford - Love Your Chelmsford

3 Lowering energy consumption and reducing carbon and greenhouse gas emissions

3.1 The principles of the 'Energy Hierarchy'[4], widely recognised by many organisations across the UK and around the world, have been adopted to try to achieve the target for the activities and operations of the City Council to be net-zero carbon by 2030.

3.2 The concept is simple. For an energy policy to be successful it must first consider ways to reduce energy demand, followed by measures to improve energy efficiency and on-site generation, before considering different types of energy supply [and their respective environmental credentials] to meet any remaining demand. This is similar to the waste hierarchy applied by the Council as a driver for recycling and waste policies.

3.3 The Department of Energy Security and Net Zero, Cabinet Office and the Government Property Function, in association with Energy Systems Catapult Ltd., have published[5] decarbonisation guidance to help public sector organisations find the best route to net-zero. There are seven themes to the guidance ranging from the development of an overall strategy, through feasibility and design, to procurement, funding and installation options.

3.4 It is calculated[6] that the overall greenhouse gas emissions in the area during 2022 was around 735.0 kilo tonnes CO_2e. This covers all sectors in the area, including industrial, commercial, public sector, domestic, transport, forestry, agriculture, and waste management. Incidentally the typical annual carbon footprint of an individual living in the UK is around 12.7 tonnes CO_2e.[7]

3.5 In comparison for the same period the proportion of CO_2e emissions arising from the activities and operations of Chelmsford City Council was less than 0.675% of this total [4.963 kt CO_2e]. Nevertheless, the City Council has a key community leadership role with

[4] Promoted by the Institution of Mechanical Engineers [May 2020]
[5] Public Sector Decarbonisation Guidance [Energy Systems Catapult Ltd. 2023]
[6] UK local authority and regional estimates of greenhouse gas emissions [Department for Energy Security and Net Zero July 2024]
[7] The Carbon Footprint of Everything [Mike Berners-Lee 2020]

expectations high that the local authorities responsible for the area will set a clear example as to the scope of carbon emission reductions that are possible.

3.6 Carbon emissions from the Council's activities and operations mainly arise from:

- Gas used to heat space and water in Council owned and operated properties
- Liquid fuels [heating oil] used to heat space and water in properties owned and operated by the Council
- Electricity used to provide power, heat and services in Council owned properties
- Liquid fuels [diesel and gas oil] used to power plant, machinery and vehicles owned and operated by the Council
- Business travel recorded by the Council's staff

3.7 When the greenhouse gas emissions 'baseline' was calculated in 2018/19, of the so-called 'scope 1' [direct] emissions produced by the Council around 49% were from gas used and 44% from diesel fuel; the rest of the emissions arose from the use of gasoil [4.5%] and heating oil [2.5%].

3.8 In respect of the consumption of gas:

- 55% of emissions are associated with operations at Riverside Leisure Centre
- 5% of emissions are from operations at South Woodham Ferrer Leisure Centre
- 16% of emissions are associated with operations at Chelmsford Crematorium
- 10% of emissions arise from the offices and venue facilities at the Civic Centre

3.9 The vast majority [95%] of diesel fuel consumed is by services operated from Freighter House, principally recycling and waste collections.

3.10 Three key workstreams have been identified with the intent to try to make the Council's operations and activities net-zero carbon by 2030:

A. Improving energy efficiency and reducing energy consumption, including further opportunities for 'on-site' energy generation

B. Decarbonising the vehicle fleet

C. Decarbonising heating, ventilation and cooling systems

3.11 It is expected that many of these changes will be incorporated into existing repair, replacement and renewals programmes but, recognising that additional investment will be required to embrace emerging technologies and to accelerate the programme, a '*Green Initiatives Fund*' was established in February 2022.

3.12 The initial budget allocated for green initiatives was £500,000, with a further provision of £400,000 made available in 2024/25. Based on initial scoping of potential solutions at the time, it was anticipated that additional investment of around £6.5m over a five-year period would be required to support the ambition for Council activities and operations to be broadly net-zero carbon by 2030. This has subsequently been reduced to a potential investment of £3.4m in the period to 2030/31, largely reflecting a change in approach toward the decarbonisation of the vehicle fleet.

A. Improving energy efficiency and reducing energy consumption

3.13 The approach adopted by the Council to reduce energy consumption is multifaceted including installing solar panel arrays for 'on-site' electricity generation coupled with energy efficiency measures such as a comprehensive LED lighting replacement programme, installation of voltage optimisers, pump upgrades, flow restrictors, pipe insulation and other devices to reduce consumption.

3.14 Following the declaration of a climate and ecological emergency procurement of electricity supply was switched to renewable sources using a *UK Renewable Energy Guarantees of Origin (REGO)* tariff. However, these renewable certified supplies have become more limited [and higher cost] so the Council no longer purchases electricity on a UK REGO tariff.

3.15 Instead, electricity is predominantly sourced on EDFs standard fuel mix which has a lower carbon content than the grid average mix. Following the energy crisis in 2023, the purchasing arrangements for energy were changed to spread the purchasing window over as long a period as possible, thereby flattening the impact of price volatility in the energy markets, meaning less has to be held in reserves for mitigating energy price spikes. Energy purchases are made using the Crown Commercial Services and Yorkshire Purchasing Organisations collective buying frameworks, supported by advice from market specialists.

3.16 It should be noted that renewable or low carbon energy sources this still generate a 'scope 2' emission according to the 'greenhouse gas conversion factors' published by the Government.

3.17 In 2014 the Council embarked on a programme to install on-site renewable energy generation measures on several Council buildings, including roof-mounted photovoltaic [PV] panels on the Coval Lane office building, at South Woodham Ferrers Leisure Centre, at Freighter House Depot and Chelmsford Sports and Athletics Centre.

3.18 These were the primary sites where the energy demand, and equally importantly the profile of that demand, was matched to the generating capacity and justified the scale of investment required. On average these installations generate 180,000 kWh of energy each year, supplying around 18% of total electricity consumption on these sites.

3.19 At that time, proposed solar PV installations were assessed against a business case that required a payback on investment within 10 years, rather than being justified by the benefits in terms of reduced carbon emissions. It should be noted that, at the time, battery technology for local energy storage was unproven and unaffordable, so was not included in any of the installations.

3.20 There is potential to consider the case for micro-energy generation on other premises, but the cost and environmental benefits compared to the level of investment required will be harder to justify. The impact in terms of reduction in the Council's overall CO_2e emissions will also be marginal compared to decarbonising the vehicle fleet or heating systems for example.

3.21 Consideration could be given to investigating the merits or otherwise of adding battery storage to complement existing solar PV installations, although none of the sites are currently generating an energy surplus compared to local demand, which limits the value of on-site battery storage. Altering the existing arrays would also result in the removal of

the '*Feed in Tariff*' which benefits the Council financially and is contracted until 2035 [20-year contract].

3.22 The possibility of installing photovoltaic panels on the roof of the theatre is being explored but solar panels installed onto multi-storey car park parks or as 'carports' on surface car parks doesn't appear to be commercially viable. A nominal allowance [£200,000] for on-site energy generation has been included in the green initiatives cost plan at this stage, so that any opportunities that are identified, and can be justified, can be pursued.

3.23 A comprehensive LED lighting replacement programme across all Council operated sites [40+] is also underway. This programme is replacing all standard, fluorescent, sodium discharge and metal halide lamps with low-energy LED equivalents. LED lighting is generally regarded as being at least 85% more energy efficient than traditional incandescent bulbs and 50% more efficient than fluorescent tubes, less so [25%] for sodium lamps. Whilst having a higher initial cost, the lifespan of LEDs is considerably longer [x10] reducing maintenance and replacement costs combined with the benefit of significant energy savings. LEDs also generally provide a higher light quality.

3.24 A total investment of around £625,000 is anticipated to complete the LED replacement programme, with around £400,000 spent to date. Wherever possible LED lighting replacements are carried out to coincide with the end of life of existing fittings or when other building refurbishment works are taking place. In some circumstances sub-standard or poor-quality lighting is being replaced earlier on grounds of safety or functionality. The remaining phases of the LED lighting replacement programme [parts of the Civic Centre, Saltcoats Park Pavilion and Chelmer Park Pavilion] are currently being planned for installation.

3.25 A proof-of-concept study was undertaken in conjunction with the [then] Department for Business, Energy & Industrial Strategy and a specialist energy company examining the potential for installing a 'district heat network' into Chelmsford City Centre. However, this proved not to be viable mainly due to the extent of retrofitting that would be required [as there is no new housing development planned of sufficient scale] and the absence of an industrial plant providing an adequate source of surplus heat in the local vicinity.

3.26 Initial enquiries also have been made about the possibility of installing a 'small-scale edge data centre' into one of the Council operated leisure centres. The principle of this approach is to pair a data centre that generates a lot of heat with an energy-intensive operation such as a leisure centre [for example diverting / re-using the excessive heat generated from the data centre to warm the swimming pool]. A company called 'Deep Green' has pioneered data centre heat re-use technology. Since January 2024 Deep Green has 'partnered' with Octopus Energy who are providing £200m investment through its 'Energy Transition Fund' to help to scale this groundbreaking technology across the UK. At the present time [based on initial feedback given] the prospect of introducing such a scheme into Chelmsford is uncertain.

3.27 In 2023 the Council embarked on a programme to improve awareness and understanding across the organisation of the potential impacts and costs of carbon emissions generated from the Council's activities and operations. To support this the Council has committed to the 'Carbon Literacy Project'[8], the driver being to encourage individuals, and the

[8] https://carbonliteracy.com

organisation collectively, to take responsibility for reducing emissions through positive changes in behaviour and everyday activities. The aim of engaging with the Carbon Literacy Project is to '*place carbon neutrality at the heart of all the Council does, embedding carbon neutrality into internal policy, culture and behaviour*'.

3.28 During 2023/24 the Council achieved Carbon Literacy Organisation 'Bronze' accreditation demonstrating its commitment to action on climate change and to creating a low-carbon culture. Currently 89 employees and 3 councillors have attained carbon literacy certification. This includes most senior managers. The City Council was the first district council in Essex to achieve this recognition. The Council is now targeting 'Silver' accreditation to further embed practical carbon reduction actions and behaviours both internally and externally.

B. Decarbonising the vehicle fleet

3.29 The Council's vehicle fleet comprises around 160 [road-licensed] vehicles of various types and sizes. 'Decarbonisation' involves the transition of the vehicle fleet to meet low, ultra-low or zero emission standards. Guidance on how this can be achieved has been provided by the Department for Transport[9] and Energy Saving Trust[10].

3.30 This could be achieved by the early replacement of all fleet vehicles with electric powered alternatives, but currently, given market factors and supply issues, this is probably neither practicable nor affordable for the City Council. A conservative estimate for replacing the operational fleet is more than £30m – a price premium of at least £17m compared to the cost of more 'conventionally' powered vehicles.

3.31 However, a very significant reduction in CO_2e emissions can be achieved by switching to the use of 'low carbon' fuels, such as hydrotreated vegetable oil [HVO], as an alternative to converting the whole fleet to ultra-low emission electric powered vehicles. This could achieve a 90% reduction in CO_2e emissions but would incur higher ongoing running costs, due to the current differential in production costs.

3.32 The original analysis of the composition of the fleet and ultra-low carbon technologies available at the time suggested an approach whereby the 'smaller' fleet [under 3.5 tonnes, i.e. small trucks, vans and ancillary equipment], would be replaced with electric vehicles, phased over the usual seven-year replacement cycle. The larger fleet [principally recycling and waste collection vehicles] would be retained 'as is' but using alternative low-carbon fuels.

3.33 Assessment of a switch to the use of HVO as a transitional fuel for the substantial part of the current vehicle fleet, [all vehicles with a Euro 6 standard engine can run on HVO fuel without modification – effectively as a 'drop-in' fuel] indicated that a reduction in CO_2e emissions in excess of 90% could be anticipated based on the current greenhouse gas reporting conversion factors[11] published by the Government.

3.34 However, the use of HVO fuel would incur an additional revenue cost, with an expected price premium of around 25% to 30% compared to standard 'fossil-fuel' diesel. This would

[9] Zero emission fleets: local authority toolkit [Department for Transport Updated May 2024]

[10] A step-by-step guide to electric vehicles for fleets [Energy Saving Trust & Department for Transport]

[11] Greenhouse gas reporting: conversion factors 2021 [UK Government – revised January 2022]

be variable according to various market factors in the supply chain, but the suppliers of HVO tend to apply a premium tracked against the unit cost of fossil-fuel diesel, reflecting the higher production costs currently. It may be that the price differential between diesel and HVO will decrease as manufacturing techniques improve and production capacity increases. This may be hastened as the target date[12] for phasing out of diesel engines approaches, with some producers predicting a uniform cost within 5 to 7 years.

3.35 Whilst the use of HVO fuel increases revenue costs it would avoid significant capital expenditure over the next 10 years that would be necessary to change the entire vehicle fleet to electric powered vehicles. The cost of converting the fleet to electric powered vehicles was estimated to be £30m+ [at 2022 prices]. This compared to £13.4m allocated in the replacement programme assuming replacement with traditional 'internal combustion' engine vehicles.

3.36 For the remainder of the vehicle fleet this would require the replacement of 67 smaller vehicles with ultra-low emission electric powered alternatives, completing this programme by 2032 based on usual seven-year replacement cycle.

3.37 For street care activities this would involve the replacement of 21 vehicles at a cost of around £2.1m compared to £1.0m currently forecast in the replacement programme. For grounds maintenance operations this would involve the replacement of 46 vehicles at a cost of around £1.9m compared to £1.2m currently forecast in the replacement programme.

3.38 To be financially feasible in terms of 'whole-life costs' battery electric vehicles need to cover a daily mileage sufficient to offset the purchase cost premium through fuel cost savings. However, above certain mileage thresholds it may not be possible to switch to electric vehicles without compromising service delivery. The majority of battery electric vehicles currently available also have limited towing capacity, which would be an issue for a number of the grounds maintenance vehicles where the ability to tow trailers is integral to operational performance.

3.39 It is anticipated that running costs for electric vehicles would be lower, with an expected 65% to 75% saving in fuel costs and up to 40% lower maintenance and servicing costs. However, there would be initial set-up costs for workshop refits, the purchase of specialist equipment and re-training of vehicle technicians to accommodate the maintenance and servicing of alternatively powered vehicles. Based on an analysis of the Freighter House based fleet, it has been calculated that the payback on the additional investment achieved through lower running costs would average 20 years – that is three times the effective lifespan [7 years] of each vehicle.

3.40 The cost of servicing the 'debt' also would fall to the revenue account. If vehicles were leased these costs would add to the revenue burden.

[12] The Sixth Carbon Budget pathway expects that by 2032, at the latest, all sales of new cars and vans should be electric and that by 2035 a third of the heavy good vehicle fleet should be low carbon. The main HGV transition to battery, overhead wires and hydrogen fuel cells is expected to take place during the 2040s [UK Climate Change Committee 9 December 2020]

3.41 In addition to the very significant cost premium to acquire electric vehicles, the Council also faces the challenge of providing an adequate charging infrastructure to support these vehicles in operation. Initial investigations indicate that considerable investment will be needed to achieve this and there is likely to be power supply / capacity issues in some locations.

3.42 For example, the feasibility of upgrading the electricity supply and the provision of twenty individual charging points at the Upper Depot at Drovers Way [accommodates the majority of the vehicles used in street care operations] was investigated with the estimated cost being in the region of £360,000, around £260,000 of this relating to a new connection to the UKPN high-voltage network that would be necessary to provide sufficient charging capacity.

3.43 Similar costs are anticipated for providing a charging infrastructure at the other operational depots at Waterhouse Lane [the operational base for the Council's grounds maintenance activities] and Freighter House.

3.44 There would also be a need for the installation of some supplementary charging points at selected outstations, for example the market, where vehicles and equipment need to be charged locally in the interest of operational efficiency. A provision of £150,000 was allowed for the installation of these local charge points assuming ready access to a suitable electricity supply. However, subsequent experiences suggest this budget provision would be insufficient and could be at least double the amount allowed.

3.45 In addition to upgrading of electricity power supplies and the provision of adequate charge points, the other challenge faced is the increased demand for depot space to accommodate their use. The depot and waste transfer station at Drovers Way and the parks depot at Waterhouse Lane are already overcapacity. Installing vehicle charging infrastructure and adequate provision for the 'layover' of vehicles when charging demands greater space than currently exists in all locations. These pressures will be exacerbated by the expansion of services required to accommodate the planned housing growth over the next 10 years.

3.46 There is the prospect in the medium term, therefore, of needing to relocate to larger premises. This could involve the relocation and consolidation of all operations [recycling and waste collections, street care and grounds maintenance] to a single purpose-built depot, if a suitable location could be found and assuming the level of investment that would be needed could be realised through the alternative use or disposal of those assets.

3.47 Considering these circumstances the vehicle decarbonisation strategy has been adjusted so there is less reliance on the switch of smaller vehicles to ultra-low emission [EV] options.

3.48 Most of the vehicle fleet [including smaller vehicles] has now been switched to use hydrotreated vegetable oil [HVO] as alternative fuel to fossil-diesel. To be considered a 'renewable fuel' under the Road Transport Fuel Obligation, HVO must meet the *International Sustainability and Carbon Certification Standard* satisfying certain conditions in its manufacture, avoiding products that would contribute to deforestation or cause environmental damage [such as palm oil] and not containing products grown on land transferred from food production. All the HVO used by the Council is so certified under the 'Renewable Fuels Assurance Scheme'.

3.49 Whilst more expensive [currently a price premium of around 33% compared to diesel, equating to around £220,000 in 2024], the switch to HVO fuel has achieved a carbon reduction of around 90% from vehicle emissions. Price premiums for switching to electric powered vehicles can exceed 100% for many vehicles and 300% for the larger recycling and waste collection vehicles and coupled with supply problems and delays, means that switching the entire fleet is unrealistic proposition at the present time. Concerns also remain regarding how fit for purpose larger vehicles such as those used for recycling and waste collection are in practice.

3.50 To date 17 small vehicles / items of plant have been switched to ultra-low emission electric-powered alternatives where it has been affordable and practical to do so. This includes seven vans, two [pool] cars, two compact sweepers and six utility vehicles predominantly used in parks.

C. Decarbonising heating, ventilation and cooling systems

3.51 Decarbonising heating, ventilation and cooling systems is the most challenging area of activity as technology is still developing and generally not yet fit for purpose for premises with higher demand or complex requirements. Potential alternative heating and cooling solutions can also be very expensive in terms of one-off investment and could result in higher ongoing running costs, so viability can be an issue, particularly with the current financial constraints.

3.52 The Council, therefore, needs to develop a medium to long-term plan to ensure that the right choice is made as to what form of heat generation is most suited to a particular situation and when to make that change, given the continued emergence of alternative heating and cooling technologies and the scale of investment likely to be required.

3.53 To inform this approach energy and carbon audits have been commissioned for each of the Council's offices and operating premises – 24 sites in total. As these assessments are very technical in nature, this work has been undertaken by a combination of APSE Energy, the Local Government Energy Hub and specialist engineers. There has been some limited financial support [£42,000] from the Department for Energy Security and Net Zero, through their Low Carbon Skills programme.

3.54 These audits highlight areas of energy inefficiency and identify opportunities and options to optimise energy use, improve equipment and operational performance and ensure regulatory compliance in the future, thereby reducing the premises overall environmental impact. These audits also examine how and where medium-term financial benefits may be achieved.

3.55 The proposals arising from the first phase of these energy audits [covering nine sites] would require an investment of over £10m. Whilst these measures are likely to save around 1,100 tonnes of Co_2e emissions [about 38% of current building related emissions] they would also be accompanied by a significant increase in revenue running costs. Given the current financial climate this probably cannot be justified.

3.56 This will result in the implementation of the programme of work to decarbonise [or partly decarbonise] all heating, ventilation and cooling systems across the Council's estate being extended, possibly over a further five years. This should allow technology advances, costs

and the market generally to reach closer parity in terms of costs and performance with fossil-fuel alternatives.

3.57 Attempts have been made to secure external funding to support the decarbonisation of heating, ventilation and cooling systems. The main government backed scheme is the '*Public Sector Decarbonisation Scheme*' managed by Salix Finance on behalf of the Department for Energy Security and Net Zero. This finance scheme is intended to support the reduction of emissions from public sector buildings by 75% by 2037, compared to a 2017 baseline.

3.58 Now in its fourth round [but closed to new applications], unfortunately this scheme has been massively over-subscribed and coupled with radical changes in the proportion of funding to be found by the applicant [for example an increase in the contribution expected from the Council from 12% to 81% for the last bid for decarbonisation works at Chelmsford Sports and Athletics Centre] and an almost doubling of overall project costs means that, to date, the Council has not been successful in securing access to funding from this source.

3.59 In the interim decarbonising heating, ventilation and cooling systems will be limited to new projects or premises where major refurbishments are being undertaken. In these circumstances it may be easier to justify the additional investment needed to reduce carbon emissions over and above like-for-like replacement of plant and equipment with traditional fossil-fuelled options.

3.60 An example that has recently been completed is the refurbishment works as at South Woodham Ferrers Leisure Centre. This included installation of replacement high-efficiency gas fired boilers together with new variable speed water circulation pumps and associated adjustments to the heating and ventilation systems, some re-tiling, decoration, lighting replacement and other planned maintenance. The new boilers are expected to reduce gas consumption by 10% and the new pumps are expected to save between 50%-60% of the energy requirement compared to the older versions.

3.61 The primary objective was to improve the resilience of the plant and equipment and to reduce energy use and running costs. These works were supported by a capital grant of £233,256 from the Swimming Pool Support Fund, administered by Sport England on behalf of the Government. Total scheme costs were £335,580, the balance being funded directly by the City Council.

3.62 Early indications are that combining the LED lighting replacement and improving the controls of the plant have resulted in electricity reductions of over 23%. This equates to an anticipated reduction of around ,14 tonnes of CO2e emissions and £15,500 cost saving in electricity charges at today's rates.

3.63 Approval was given in December 2024 for the refurbishment and modernisation of Dovedale Sports Centre, including the expansion of health and fitness facilities and improved community access. The total scheme cost is anticipated to be in the order of £2.34m. Chelmsford College who are the other party to the joint use agreement will contribute £491,000.

3.64 Much of the plant and equipment servicing this facility is beyond its life expectancy and plant failures are frequent. The condition survey identifies replacement costs for boiler and heating systems in excess of £1m over the next five years. Therefore, the opportunity

has been taken to replace the gas fired boilers with air source heat pumps as part of the programme to decarbonise the Council's activities and operations. The additional cost for the provision of ASHP instead of fossil-fuelled boilers is £175,000.

3.65 The most significant decarbonisation challenge will be Riverside Leisure Centre. This complex has a very high heating and cooling demand due to the ice rink and swimming pools – accounting for 55% of the total gas consumption across the Council. Riverside already has a combined heat and power [CHP] installation although this was relocated from the old centre and is not optimised for the loading of the new facilities and is scheduled for replacement in 2029/30.

3.66 In simple terms, the CHP unit [also known as cogeneration] consists of an electrical generator combined with equipment for recovering and using the heat produced by that generator – capturing and using the thermal energy that would otherwise be wasted and released into the atmosphere.

3.67 The Council also receives a tax relief on the natural gas used to power the CHP unit. Although we pay for the gas to power the CHP unit, the saving from generating our own electricity and using heat in this way reduces our electricity bills by about 16 tonnes of carbon and £17,000 per month when the unit is fully operational.

3.68 The most recent condition survey for Riverside Leisure Centre identifies the need to replace the chiller units serving the ice rink, upgrade the combined heat and power plant and undertake repairs to the ice rink and sports hall [domed] roof. Taking the opportunity presented by the need to replace major items of plant and equipment, a comprehensive scheme is envisaged for Riverside that incorporates new low carbon heating and cooling systems together with on-site energy generation using a combination of next generation CHP equipment and solar photovoltaic panels, possibly with battery storage, fully integrated into the necessary roof repairs / replacement. This approach should offer economies of scale and is likely to be the most cost-effective way of lowering carbon emission from this site.

3.69 The Council is planning to develop a new cemetery and crematorium. Around 16% of gas consumption is from operations at the current crematorium, equating to the second largest level of carbon emission. The opportunity therefore will be taken to incorporate the latest lower-carbon technologies at this new facility and maximise the potential for on-site generation of renewable energy.

Examples of the cost and environmental benefit of selected initiatives / projects

Site	Project	Installed	Average annual savings / benefits
Riverside Ice and Leisure Centre	Replacement of Combined Heat and Power unit, improvements to air handling systems and building management controls	November 2013	• Generates around 49% of annual electricity consumption on site • £40,000 a year on gas consumption from a smaller, better sized CHP unit • Higher pool side temperatures • Stabilised electricity bills of the site • More efficient use of energy on site

Site	Project	Installed	Average annual savings / benefits
Coval Lane Office Civic Centre	Installation of roof mounted solar PV	December 2014	• 45,000 kWh electricity generated on site per year – around 17% of annual electricity consumption • £5,700 saving on electricity bill per year • Over £5,000 per year income from Feed in Tariff payments
Meadows MSCP	Replacement of lighting for LED lamps	December 2014	• 70,000 kWh per year saved on electricity bills – around £13,300 per year • Car park looks brighter and safer
Townfield Street MSCP	Replacement of lamps for LEDs and introduction of sensors	December 2014	• 110,000kWh per year saved on electricity bills – around £9,900 per year
Saltcoats Park Pavilion	Replacement of electric space heating, improved lighting controls, flow restrictors on changing room showers and replacement of electrically heated showers for oil fired hot water heating	September 2015	• 100,000 kWh saved per year on energy – around £10,000 per year • Despite switch from electricity to oil there is an emissions reduction of 23,000 kg CO_2e per year • Reduced water consumption • Improved hot water availability • More efficient use of resources
South Woodham Ferrers Leisure Centre	Installation of roof mounted solar PV	December 2015	• 39,000 kWh generated on site per year – around 9% of annual electricity consumption • £4,400 saved per year on electricity bills • Around £4,500 income from FIT payments per year
Freighter House Operational Services depot	Installation of roof mounted solar PV	December 2015	• 53,000 kWh generated on site per year – around 16% of annual electricity consumption • £5,500 saved per year on electricity bills • Around £6,000 income from FIT payments per year

Site	Project	Installed	Average annual savings / benefits
Chelmsford Sports and Athletics Centre	Installation of roof mounted solar PV	December 2015	• 39,000 kWh generated on site per year – around 16% of annual electricity consumption • £4,500 saved per year on electricity bills • Around £4,400 income from FIT payments per year
South Woodham Ferrers Leisure Centre	Upgrade lighting in changing rooms and toilets to LED	December 2016	• 32,000 kWh per year saved on electricity bills – around £6,080 per year
Chelmsford Sports and Athletics Centre	Changing room, corridors, offices, gyms and studios lighting changed to LED.	November 2017	• 29,320 kWh per year saved on electricity bills – around £5,570 per year
Meadows Surface car park	Upgrade all 36 lamps to LED	January 2018	• Unmetered supply so not assessed
Civic Centre Old Library Building	Upgrade basement corridor lighting to LED	January 2018	• Around £400 per year saved on electricity bills
Hylands House	Replacement of not water cylinder with electric unit allowing oil-fired boilers to be switched off in summer	May 2018	• 7,998 kWh per year saved on electricity bills – around £1,520 per year
Chancellor Park, Waterhouse Lane, Admirals Park and Chelmsford Crematorium	External lighting [mainly car parks] upgraded to LED	September 2018	• Around £1,400 saved on energy costs per year

Carbon emissions from the activities and operations of the City Council

3.70 The calculation of the City Council's carbon emissions adopts the methodologies and conversion factors for carbon reporting published by the Department for Energy Security

and Net Zero in association with the Department for Environment Food and Rural Affairs.

3.71 Under this system, emissions fall into different types, categorised as Scope 1, Scope 2 or Scope 3 emissions. The 'scope' indicates how far removed from the Council's control the emissions are; Scope 1 being directly burnt / emitted by the Council; Scope 2 being indirectly emitted [i.e., fuels used to produce the electricity consumed] and Scope 3 being any emissions caused by the business but emitted by other parties 'upstream' or by supply chains.

3.72 Scope 1 and Scope 2 emissions are tightly prescribed by the guidance and are included in the carbon baseline calculation for the Council's activities and operations.

3.73 There is more discretion in respect of which Scope 3 emissions are included in the calculation. At present the only Scope 3 emissions that can be reliably included in the baseline are those from employee business mileage as they are readily attributed to the activities and operations of the Council.

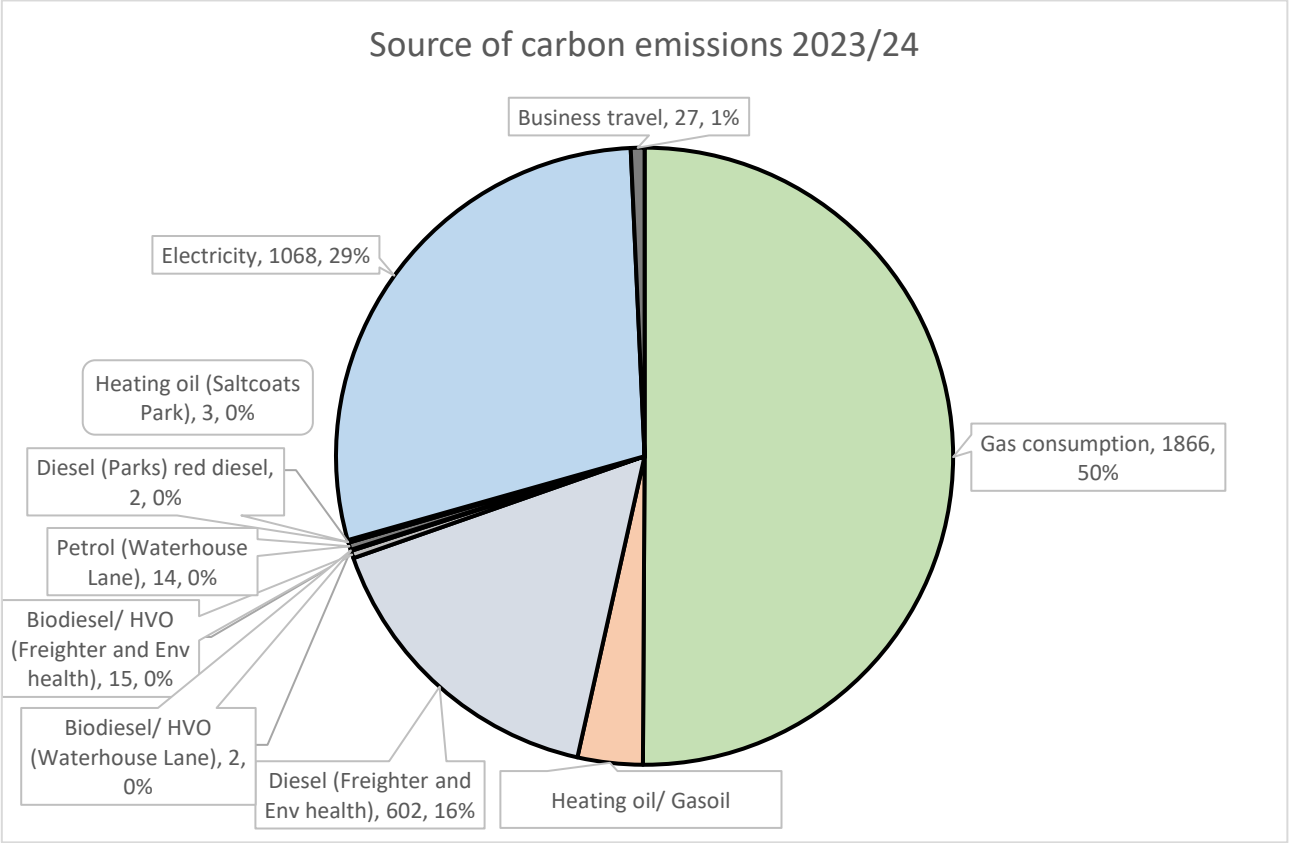
3.74 The baseline period for when the Climate and Ecological Emergency was declared by the Council was the financial year 2019/20, when the carbon emissions from the Council's activities and operations during that period were calculated as being 5,370 tonnes of CO_2e.

3.75 In 2023/24 total emissions arising from the activities and operations of the City Council equated to 3,728 tonnes CO_2e. These are compared to the 'baseline' assessment which was undertaken in 2019/20 in the table below. Greenhouse gas reports for the Council are published annually on the Love Your Chelmsford website, the latest being for 2023/24 Green-house-gas-report-2023-24.pdf

Tonnes CO_2 equivalent	2023/24	Baseline year (2019/20)
Scope 1 (direct) emissions	2,633	3,637
Scope 2 (from electricity) emissions	1,068	1,663
Scope 3 (indirect) emissions	27	70
Total Gross emissions	3,728	5,370
Carbon offsets	-	-
Energy purchased from green tariffs	-	-
Total annual net emissions	3,728	5,370
Intensity measurement (per F.T.E employee; excluding casual staff)	840 FTE	833 FTE

Greenhouse Gas conversion figures are taken from the Greenhouse gas reporting: conversion factors 2023 - GOV.UK (www.gov.uk)

3.76 The sources of carbon emissions in 2023/24 are shown below:



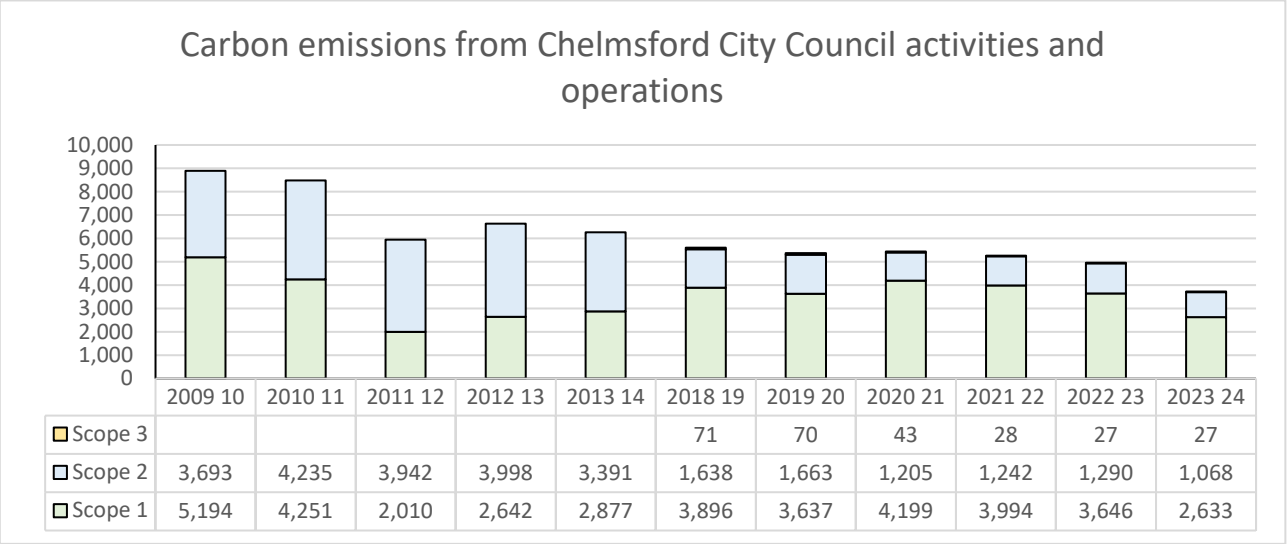
3.77 The trend of emissions by scope since 2009 are shown in the table below. Emissions in 2023/24 fell by 25% compared to the previous year and by 30% against the baseline year [2019/2020]. Scope 3 emissions [vehicle use by staff] remained the same as the previous year despite more vehicle miles being reported. This is due to improvements in emissions standards of vehicles. The main changes that contribute to the reduction include:

- A change in use of fuels for recycling and waste collection, street care and grounds maintenance activities
- Further investment in the LED lighting replacement programme

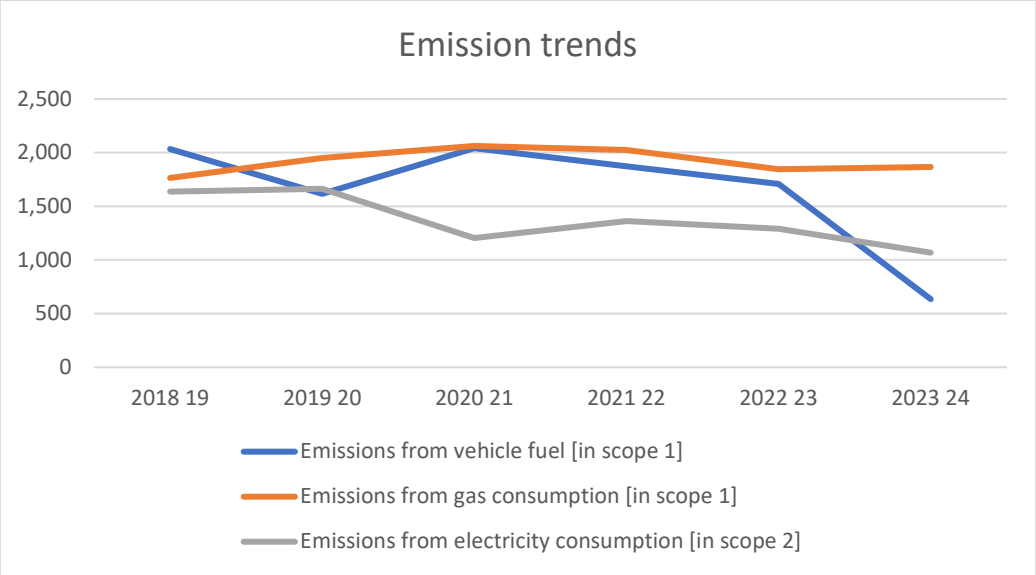
3.78 Emissions from vehicle fuel fell by around 61% compared to the baseline reflecting the switch to HVO fuel in October 2023.

3.79 Scope 3 emissions remain the same as the previous year despite more vehicle miles being reported. This is due to improvements in emissions standards of vehicles used by staff.

	2009 10	2010 11	2011 12	2012 13	2013 14	2018 19	2019 20	2020 21	2021 22	2022 23	2023 24
	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq	tonnes CO2eq
Scope 1	5,194	4,251	2,010	2,642	2,877	3,896	3,637	4,199	3,994	3,646	2,633
Scope 2	3,693	4,235	3,942	3,998	3,391	1,638	1,663	1,205	1,242	1,290	1,068
Scope 3						71	70	43	28	27	27
Total	8,887	8,486	5,952	6,640	6,268	5,605	5,370	5,447	5,264	4,963	3,728
Change yr on yr [tonnes CO2eq]		-401	-2,534	688	-372	-663	-235	77	-183	-301	-1,235
Change yr on yr [%]		-4.5%	-29.9%	11.6%	-5.6%		-4.2%	1.4%	-3.4%	-5.7%	-24.9%
Compared to base line								77	-106	-407	-1,642
Compared to base line [%]								1.4%	-2.0%	-7.6%	-30.6%



	2009 10	2010 11	2011 12	2012 13	2013 14	2018 19	2019 20	2020 21	2021 22	2022 23	2023 24
Scope 3						71	70	43	28	27	27
Scope 2	3,693	4,235	3,942	3,998	3,391	1,638	1,663	1,205	1,242	1,290	1,068
Scope 1	5,194	4,251	2,010	2,642	2,877	3,896	3,637	4,199	3,994	3,646	2,633



	2018 19	2019 20	2020 21	2021 22	2022 23	2023 24
Emissions from vehicle fuel [in scope 1]	2,032	1,617	2,041	1,873	1,707	635
Change yr on yr [tonnes CO2eq]		-415	424	-168	-166	-1,072
Change yr on yr [%]		-20.4%	26.2%	-8.2%	-8.9%	-62.8%
Compared to base line			424	256	90	-982
Compared to base line [%]			26.2%	15.8%	5.6%	-60.7%
Emissions from gas consumption [in scope 1]	1,764	1,949	2,062	2,023	1,845	1,866
Change yr on yr [tonnes CO2eq]		185	113	-39	-178	21
Change yr on yr [%]		10.5%	5.8%	-1.9%	-8.8%	1.1%
Compared to base line			113	74	-104	-83
Compared to base line [%]			5.8%	3.8%	-5.3%	-4.3%
Emissions from electricity consumption [in scope 2]	1,638	1,663	1,205	1,361	1,290	1,068
Change yr on yr [tonnes CO2eq]		25	-458	156	-71	-222
Change yr on yr [%]		1.5%	-27.5%	12.9%	-5.2%	-17.2%
Compared to base line			-458	-302	-373	-595
Compared to base line [%]			-27.5%	-18.2%	-22.4%	-35.8%

3.80 The calculations do not include emissions from properties owned by Chelmsford City Council but occupied by a third party where the tenant receives energy bills directly or emissions from buildings where Chelmsford City Council is the tenant, and the landlord pays energy bills directly [the financial control approach].

3.81 The calculations do not include electricity generated by the solar photovoltaic arrays situated on Council premises or electricity generated by the combined heat and power plant at Riverside Leisure Centre; instead, the gas used to generate the electricity is included in the gas consumption data as per best practice guidance. Electricity used to charge Council operated electric vehicles is include from the existing supplies and not counted separately.

4 Protecting and expanding natural habitats and increasing biodiversity – meeting Chelmsford City Council's biodiversity duty

4.1 The Environment Act 2021 introduced a 'biodiversity duty' for public authorities in England requiring that:

- Consideration be given to what can be done to conserve and enhance biodiversity
- Policies and objectives be adopted that enhance biodiversity
- Plans and actions be implemented to achieve and deliver this biodiversity duty

4.2 Building on the vision exemplified in the 25 Year Environment Plan[13], with new powers and duties from the Environment Act, Agriculture Act and Fisheries Act, the Environmental Improvement Plan[14] [EIP] sets out a comprehensive approach to halting and then reversing the decline in nature. This also includes a landmark commitment that the public would be able to access green space or water within a 15-minute walk from home.

4.3 Section 102 of the Environment Act 2021 amended the duty to conserve biodiversity under Section 40 of the Natural Environment and Rural Communities Act 2006. Section 40 now places a duty on public bodies to conserve and enhance biodiversity (the 'general biodiversity objective') in relation to:

- The land that the Council manage, including any protected areas and sites
- Planning and development decisions
- Any advice given
- Raising awareness within the community
- How the Council's activities and operations affect the environment

4.4 Section 40A of this Act also requires a biodiversity report to be prepared [no later than 1 January 2026] providing a summary of the policy changes and action taken by the City Council to comply with the biodiversity duty.

4.5 The 2021 Act also mandated a 10% net gain in biodiversity through the planning system.

4.6 Extensive research has established that an abundant green infrastructure, including a network of interconnected parks, green spaces, waterways and natural spaces, is at the heart of a more sustainable way of living, making a significant contribution to mitigating the impacts of climate change:

[13] 25 Year Environment Plan
[14] Environmental Improvement Plan 2023

- Absorbing carbon dioxide from the atmosphere
- Improving air quality
- Limiting the impacts of pollution
- Reducing the incidence of noise nuisance
- Decreasing the risks of and mitigating the effects of flooding
- Making places more attractive, comfortable, and safer

4.7 Green spaces, waterways and other natural spaces are central to preserving and restoring ecosystems and creating a network of 'travel corridors' for wildlife, protecting and expanding natural habitats, enhancing and enriching biodiversity and helping wildlife populations to thrive.

Climate and Ecological Emergency

4.8 Since its declaration in 2019, the Climate and Ecological Emergency has influenced key policies set by the Council and has been a driver for the planning and delivery of the Council's activities and operations, including measures to conserve natural resources and reduce environmental impacts, such as minimising single use plastics, eliminating the use of peat and limiting the use of pesticides in the grounds maintenance operations undertaken by the City Council.

4.9 Latterly policies, plans and actions have been put in place in order to comply with the City Council's biodiversity duty as prescribed by the Environment Act 2021.

Our Chelmsford Our Plan

4.10 The recently refreshed[15] 'Our Chelmsford Our Plan' places a focus on sustainable and environmentally responsible growth and creating a distinctive sense of place, protecting, expanding and improving the quality, accessibility and attractiveness of green areas, natural spaces, rivers and waterways, improving habitat value and increasing biodiversity. 'Our Chelmsford Our Plan' was refreshed in December 2023 incorporating all the priorities identified in the Climate and Ecological Emergency Action Plan. The key strategic actions identified to help deliver those priorities over the next few years are set out in section 7.

Procurement Policy

4.11 In November 2020 the Council introduced 'social values', as defined by the Public Services (Social Value) Act 2012, into its purchasing policy and procurement activities, giving weight to economic, social and environmental wellbeing in the procurement of its contracts, in particular improving environmental sustainability by reducing waste, conserving natural resources and lowering energy consumption.

4.12 The Council adopted the National Themes Outcomes and Measures Framework[16] [TOMS] to enable consideration to be given to the social value impact of its suppliers, these

[15] Our Chelmsford Our Plan approved at Council on 6 December 2023

[16] The Themes Outcomes and Measures Framework [TOMS] was compiled by Social Value UK and launched in 2017. It is updated and developed annually. It is endorsed by the Local Government Association (LGA) and used for consistent reporting by both the private and public sectors

measures generally representing at least 10% of the selection criteria used for procurement decisions.

4.13 The Council adopted 11 core social value outcome measures[17] the most relevant to helping to address the climate and ecological emergency being:

- Increasing biodiversity and land use
- Reducing CO_2 and greenhouse emissions
- Increasing use of sustainable materials
- Reducing waste and increasing re-use, recycling and composting
- Decreasing in water usage

Parks, Green Spaces and Waterways Strategy

4.14 The Council adopted a Strategy for Parks, Green Spaces and Waterways in June 2022, setting the context, and providing a framework for:

- The protection, creation, and enhancement of specific habitats and landscapes in and around Chelmsford
- Encouraging people to connect with the natural environment through the active use of parks, green spaces, and waterways, that are clean, safe, and easily accessible, thereby enjoying positive experiences whilst using them
- Ensuring that parks, green spaces and waterways are planned and managed in a sustainable way, reducing unnecessary waste and helping to preserve natural resources

4.15 The scope of the Strategy includes all publicly accessible open space such as parks, playing fields, recreation grounds, sports pitches, residential open spaces, highway verges, local nature reserves, commons, woodlands, conservation sites, public rights of way, allotments, equipped play areas, cemeteries, closed church yards and disused burial grounds, outdoor gyms, waterways and riverside corridors. In total the City Council is directly responsible for the management and maintenance of 731.40 hectares [1,807.33 acres] of publicly accessible green space.

4.16 Parks and green spaces in Chelmsford are extensively used for a wide variety of purposes. In addition to general recreation, they provide key walking and cycling routes, are used for play, for people to experience and appreciate the natural environment or simply to relax and enjoy an attractive space.

4.17 Surveys have consistently shown that over 90% of residents use parks and green spaces in Chelmsford in some way and at some time. More than three million visits to the main parks are recorded each year, with many more using other green spaces and river corridors for informal recreation and quiet contemplation, which are unrecorded.

4.18 Well maintained, accessible parks, green spaces and waterways are highly valued by residents and are always considered to be an important contributor to the 'quality of life' in the local area. This is reflected in national surveys with 91% of those responding

[17] More detail setting out the criteria for evaluation and description of the measures is set out in the Chelmsford City Council 'Social Value Procurement Policy'

believing that parks and green spaces significantly improve the quality of life. In the most recent survey[18] about the value of green spaces in Essex:

- 99% of the respondents agreed that good quality green spaces make an area a better place to live
- 98% agreed that being able to access nature and green space is important
- 98% agreed that it was important that nature and biodiversity in the locality was protected and preserved

4.19 The Strategy is supported by a targeted 'Improvement Plan' and site-specific management plans. Many important habitats are located within parks, green spaces, the meadows alongside rivers and the woodlands around the area. Protecting and expanding natural habitats and increasing biodiversity is a key focus of the site management plans for these areas.

4.20 New wildflower meadows and naturalised bulb planting areas of differing scales also have been created at selected locations as part of the programme to enhance wildlife habitats, create green links and increase species diversity.

A Plan for Improving the Rivers and Waterways in and around Chelmsford

4.21 A Plan for Improving the Rivers and Waterways in and around Chelmsford was endorsed at the City Council's Policy Board on the 14 July 2022. The Plan sets out options and opportunities to improve the appearance, attractiveness and recreational use of the rivers and waterways in and around Chelmsford and to promote schemes and activities that enhance their habitat, ecological and biodiversity value. Improving connectivity, by providing cycleway and footpath links through the river valleys and beyond, also is an integral part of the plan.

4.22 The Plan to Improve Rivers and Waterways is a 10-year programme focused on:

- Putting in place measures to improve navigation on the rivers and waterways and expand recreational use
- Ensuring that future development proposals are complementary to the river environment, creating attractive 'softer' river frontages / riverside terraces, revitalising the presentation and use of waterways, improving accessibility and where possible incorporating 'renewable energy' initiatives
- Identifying opportunities to extend and improve green spaces adjoining the rivers and waterways, including options for greening the 'engineered / canalised' sections of the river to improve their appearance and attractiveness
- Promoting schemes and activities that enhance the habitat, ecological and biodiversity value of the river corridors, including the declaration of areas as local nature reserves
- Identifying ways to improve pedestrian and cycle movement along river corridors including opportunities that could be taken to extend and improve the network of riverside footpaths and cycleways

[18] Research and Citizen Insight [Essex County Council Policy Unit July 2021]

4.23 If the full potential of the rivers and waterways is to be realised, a combination of low-cost actions and larger-scale high impact projects needing significant capital investment will be required. The level of investment in total over the next 10 years is likely to be in the region of £13m to £15m. There should be scope to lever in external funding to offset some of these costs. Delivery of some elements of the programme will be determined by the phasing of the main City Centre development sites, including replacement for the current flood gates.

Policy for creating and managing species-rich grassland

4.24 In April 2022 the City Council implemented a policy for '*Creating and Managing Species-rich Grassland*'. This involved changes to maintenance regimes for green spaces across the whole of the City Council area, placing much greater emphasis on increasing the biodiversity of grassland areas rather than maintaining relatively sterile frequently close mown greensward. This policy change involved a reversal of the previous approach where, as a matter of course, grassland was regularly mown unless, and by exception, there was a reason not to do so, to one where a more relaxed maintenance regime is adopted that will benefit wildlife and promote biodiversity, as the first option.

4.25 The best practice guidance published by Plantlife[19] informed the development of the Policy. This is widely regarded as offering the most practical framework for shifting the balance of land management practices so that species-rich habitat becomes predominant over close mown grass swards.

4.26 The policy for creating and managing species-rich grassland also covers designated 'local wildlife sites' – areas of land that are deemed to have substantive nature conservation value. The most recent review of designated local wildlife sites in Chelmsford was undertaken by Essex Ecology Services Ltd in 2016.

4.27 Over the years the Council has adopted a programme to selectively relax maintenance regimes for grassland area where it is considered that this will benefit wildlife and promote biodiversity. This is most apparent in the creation of large-scale 'hay meadows', for example in Hylands Park, and some roadside verges, for example the embankments alongside the Great Leighs by-pass.

4.28 Before the change in policy, approximately 165.33 hectares of grassland in the City Council's care [20%] benefited from a more relaxed cutting regime, designed to encourage wildflowers, wildlife and greater biodiversity.

4.29 However, considering the climate and ecological emergency and given the Council's biodiversity duties set out in the Environment Act it was evident that a quantum change in the approach for the management and maintenance of grasslands would be required.

4.30 This change in policy and approach was implemented in April 2022 and already has had a significant impact on the way grasslands are perceived, valued and appreciated, with an increase in wildlife and biodiversity already evident. Overall, these changes have been successfully implemented with some relatively minor adjustment made following the first-year review in light of feedback received. Whilst immediate effects are clear, further

[19] Managing Grassland Road Verges and the Good Verge Guide [Plantlife, September 2019 and January 2021]

monitoring will take place over the next five years in an attempt to confirm the broader biodiversity impact.

Local nature reserves

4.31 A key priority identified in 'Our Chelmsford Our Plan' is to identify sites with underlying habitat potential and wildlife value, so that management practices can be adjusted to maximise that potential, with a view to declaring the area as a local nature reserve. Three areas have been designated as local nature reserves since 2021, adding to the three LNRs that already exist.

4.32 On 13 July 2021 part of Admirals Park was declared a Local Nature Reserve. This is a locally important site for wildlife located in the western river corridor of the Rivers Wid & Can. It provides wildlife and habitat connectivity to the City Centre, Marconi Ponds LNR and the surrounding area; as well to Hylands Park and open countryside areas to the west. Many bird, mammal and reptile species rely on these connecting river valley habitats to move around an urban dominated landscape and provide connectivity between other nature reserves and wildlife sites.

4.33 Habitats at Admirals Park of significant value to wildlife are large areas of flood plain, species rich meadow and newly planted trees and woodland areas. These make important contributions as nesting habitat for birds, provide food for mammals and birds and act as a local CO_2 sink.

4.34 On 12 April 2022 Frankland Fields in South Woodham Ferrers was declared a Local Nature Reserve. The site was originally farmland, part of Peatlands Farm until the 1990s. Frankland Fields is now part of the mosaic of different habitats in this area, including meadow grassland, scrub, woodland, meadow with trees, amenity grassland and a watercourse. The meadows are diversely populated including wildflowers such as yellow rattle, grass vetchling, bush vetch, oxeye daisy, birdsfoot trefoil, and creeping and meadow buttercup.

4.35 The Bumblebee Conservation Trust has identified Frankland Fields LNR as an important site for the shrill carder bee and brown-banded carder bee. With their population numbers declining, sites like this are vital for their survival. The grassland at Frankland Fields is ideal for them, nesting in old mouse holes or building nests of grass or plant fibres.

4.36 The management of the site aims to increase biodiversity and maintain the open grassland land, whilst keeping the site accessible to all. Management activities include the removal of invasive scrub and maintaining the 'cut and clear' regime for the meadows to improve grassland species mix.

4.37 Connectivity to other nearby sites is a key management objective to allow wildlife to move through the wider area, connecting to nearby Fen Washland LNR and Kendall Park LNR, as well as RAMSAR sites (of wetland importance, particularly for waterfowl) located on both banks of the River Crouch, a large area to the East of South Woodham Ferrers and the River Crouch Site of Special Scientific Interest.

4.38 John Shennan Field was declared as a Local Nature Reserve in October 2024 having been managed and maintained with this in mind since 2016. The site, extending to 6.5 hectares in area, is a patchwork of different habitats, a combination of woodland / scrub and

species rich grassland, part of which is fenced to restrict access to protect the habitat for ground nesting birds.

Greening and mass tree planting programme

4.39 Trees and woodland are generally recognised as providing a range of environmental and quality of life benefits and are seen as increasingly important in helping to alleviate the impacts of the current climate emergency. The proven benefits of trees [particularly those located in urban areas] include:

- Protecting conserving and enhancing the natural environment and increasing biodiversity through the introduction of native and pollinator rich plant species that provide habitats and food for wildlife
- Improving the water holding capacity of an area, slowing water-flows, providing natural flood management, helping to mitigate flood risk
- Providing shade and improving heat absorption during periods of hot weather
- Reducing air pollution and improving air quality
- Helping to manage and reduce carbon emissions
- Providing opportunities for people to enjoy healthy and active lives, providing mental, physical health and wellbeing benefits
- Improving environmental quality and the quality of life generally

4.40 An assessment undertaken by Forest Research UK in 2018 suggested that the tree canopy cover in Chelmsford was 13.8%, compared to a UK average of 16%. Forest Research conclude that there is evidence that a minimum tree canopy cover of 20% is needed to secure all the benefits that trees can provide in urban areas.

4.41 The Environment Act 2021 now sets legally binding environmental targets which include increasing tree and woodland cover to 16.5% of total land area in England by 2050.

4.42 A priority highlighted in the Climate and Ecological Emergency Action Plan and the original version of 'Our Chelmsford Our Plan' was to '*undertake a greening programme to significantly increase the amount of woodland and the proportion of tree cover in Chelmsford*'. The intention was to put in place a sustained medium-term mass tree planting and woodland creation programme to plant at least 148,000 additional trees and to create 71 hectares of woodland with a target to achieve tree cover of at least 20% in the Chelmsford area by 2030.

4.43 Subsequent to this, the target for tree planting has been increased to 192,000 trees to reflect the anticipated population in 2030, representing one tree planted for every resident in the City Council area.

4.44 The budget allowed to complete the mass tree plants and woodland creation programme, including land purchases was originally set at £4.4m, but was reduced to £1.633m in February 2024, spread over ten years largely due to lower demand for additional land acquisitions.

4.45 The Making Places Supplementary Planning Document [adopted in January 2021] sets out the tree planting obligations for new developments in and around Chelmsford, requiring that at least three new trees are planted for every new home built [around 41,400 trees]. It is anticipated that the main growth sites identified in the Local Plan will deliver around

30,000 new trees over the period to 2022 to 2036, leaving around 11,400 to be provided by other developments not associated with the main growth sites. It is likely that the majority of these will be provided by house builders / developers on green spaces directly associated with the new development.

4.46 The core elements of the mass tree planting and woodland creation programme are:

a. Tree planting on sites managed and maintained by the City Council, often involving community planting days. This is anticipated to deliver around 75,000 additional trees in total
b. 'Gapping-up' existing woodland areas, tree belts, hedgerows and areas planted with whips with feathered trees. This is anticipated to add 150 feathered trees per year, around 1,500 in total
c. Planting larger 'standard' or 'specimen' trees in parks, on communal green spaces and on highway verges. Some of this planting will need to be undertaken by, or on behalf of, housing associations or the Highway Authority as they are the predominant landowners in some of these areas. A reasonable target would be for 400 individual trees to be planted every year, amounting to some 4,000 in total
d. Tree planting on other publicly owned land for example parish council sites, schools etc. This is expected to amount to around 4,000 additional trees in total
e. A campaign to encourage householders to plant trees in their gardens. If successful, this could result in an additional 2,500 trees planted in total

4.47 This would leave around 105,000 trees to be planted that would need to be accommodated on land not currently in public ownership. At a planting density of 1 tree per 3 square metres, this would equate to around 30 hectares of land that would need to be set aside for tree planting.

4.48 The preference would be for the City Council to acquire suitable sites to protect the tree planting in perpetuity. An alternative would be for tree planting to take place under licence from a third-party landowner with similar guarantees. However, identifying suitable land and putting in place legal arrangements that provide sufficient levels of protection has proved to be difficult. It is unlikely, therefore, that the mass tree planting and woodland creation programme can be completed, without the City Council acquiring additional land specifically for that purpose.

4.49 Wherever possible, a UK grown and sourced planting mix has been used for woodland creation, comprising the following native species:

Field Maple (Acer campestre)	Common Alder (Alnus glutinous)
Downey Birch (Betula pubescens)	Hornbeam (Carpinus betulus)
Hazelnut (Corylus avellana)	Hawthorn (Crataegus monogyna)
Wild Privet (Ligustrum vulgare)	Crab Apple (Malus sylvestris)
Cherry Plum (Prunus cerasifera)	Blackthorn or Sloe (Prunus spinosa)
English Oak (Quercus robur)	Goat Willow (Salix caprea)
Guelder Rose (Viburnum opulus)	Dog Rose (Rosa canina)
Scots Pine (Pinus sylvestris)	English Yew (Taxus baccata)
Holly (Ilex aquifolium)	Wild Service Tree (Sorbus torminalis)

4.50 By the end of the 2024/25 planting season an additional 85,868 trees had been planted [44.7% of the target]. Net expenditure incurred to the end of the financial year 2024/25 is expected to be £280,000.

Planting season	Woodland whips	Standard / feathered trees	Total trees planted
2018/19	1,920	182	2,102
2019/20	14,170	188	14,358
2020/21	15,058	475	15,533
2021/22	16,872	691	17,563
2022/23	17,025	302	17,327
2023/24	1,790	159	1,949
2024/25	16,846	190	17,036
Total	83,681	2,187	85,868

4.51 An opportunity arose in 2024 to acquire 11.31 hectares [27.95 acres] of Grade 3 pastureland located in Little Waltham, just south of Essex Regiment Way, with access directly off Back Lane. The land was marketed as potentially suitable for equestrian or agricultural use, or for 'natural capital' investors. Sporting, timber and mineral rights were included in the sale.

4.52 The land is in the strategic green wedge that runs along the Chelmer River valley. This green wedge is increasingly important giving separation between the new developments at Channels / Beaulieu and the existing settlements of Broomfield and Little Waltham. The green wedge is protected from development in the Local Plan.

4.53 The Council was able to purchase this land at a total cost of £480,000 including stamp duty and legal fees etc., equivalent to just over £16,000 per acre. The land was purchased partly for tree planting but also to improve its nature potential and increase biodiversity in a key river margin environment. This was a rare opportunity to acquire a large area of land at a reasonable value, located in such a key position. No similar opportunities have been identified in the last five years.

4.54 In 2023/24, large scale tree planting had been curtailed due to a lack of suitable land. Without acquiring additional land such as this the targets set out in the Climate and Ecological Emergency Action Plan and recently reinforced in Our Chelmsford Our Plan cannot be met.

4.55 A baseline ecological / habitat survey of the area was completed in 2024 to inform the development of a 10-year management plan for the site, forming the basis for a possible future declaration as a local nature reserve. An initial phase of tree planting [6,000 to 8,000 whips] will be completed during the current planting season [end March 2025].

4.56 To complete the mass tree planting and woodland creation programme as originally envisaged, it is anticipated that future spending on tree planting will be in the order of £660,000, together with further land acquisition costs of around £500,000.

4.57 Urban trees are increasingly recognised for the many benefits they provide, such as removing carbon dioxide and pollutants from the air, providing habitats for wildlife, and making urban areas more attractive, enjoyable and healthy places to live and spend time

in. To help manage and understand this important resource, Trees for Cities, Brillianto, the Woodland Trust and Forest Research have undertaken a national assessment of tree canopy coverage across 283 town and cities in England using the '*i-Tree Canopy*' mapping tool.[20] An average canopy cover of 15.8% was estimated across all areas.

4.58 Tree canopy cover for the urban wards of Chelmsford is shown in the table below. This assessment highlights those geographic areas that currently have lower than average tree coverage.

Source: Forest Research UK GB Ward Canopy Cover WebMap (arcgis.com)		Tree canopy cover
Chelmer Village and Beaulieu Park	Dec-21	12.00%
Galleywood	Dec-21	9.90%
Goat Hall	Dec-21	14.10%
Great Baddow East	Dec-21	15.20%
Great Baddow West	Dec-21	10.50%
Marconi	Dec-21	14.00%
Moulsham and Central	Feb-21	18.90%
Moulsham Lodge	Dec-21	10.20%
Patching Hall	Dec-21	13.40%
Springfield North	Dec-21	7.70%
St Andrews	Dec-21	13.40%
The Lawns	Dec-21	19.00%
Trinity	Dec-21	16.30%
Waterhouse Farm	Dec-21	14.80%
Little Baddow, Danbury and Sandon	Jul-20	26.60%
South Woodham, Elmwood and Woodville	Jan-22	5.30%
Chelmsford overall		13.00%
South Woodham Ferrers overall		7.50%

4.59 It is now widely acknowledged that the presence of trees is essential to public health and wellbeing, yet not everyone has good access to trees and their benefits where they live. The '*Tree Equity Score UK*' – promoted by the Woodland Trust – is a mapping tool [based on lower super output areas] designed to measure on a scale 0 to 100 how well the benefits of trees are reaching communities, particularly those living on low incomes or others disproportionally impacted by extreme heat, pollution and other environmental hazards. It covers urban areas only and is a way of helping to identify areas where additional tree planting would be of benefit.

4.60 Chelmsford currently has an overall tree equity score of 88, comparable to Colchester, but slightly lower than Brentwood, Basildon and Epping. From this modelling the priority areas in urban Chelmsford for additional tree planting are Broomfield, north Springfield and Beaulieu, Melbourne, Westlands, parts of Moulsham / Moulsham Lodge and parts of Great Baddow and Galleywood.

[20] UK Urban Canopy Cover - Forest Research and i-Tree Canopy

4.61 An added benefit of the tree planting programme is the ability of trees to absorb and store carbon and the potential for carbon-offsetting through large-scale tree planting over the longer-term. A net-zero carbon position for the City Council's activities and operations is unlikely to be achieved by 2030 without some degree of carbon-offsetting.

4.62 Carbon sequestration describes the long-term storage of carbon dioxide or other forms of carbon helping to slow the accumulation of greenhouse gases in the atmosphere. When trees grow, they convert CO_2 to carbohydrates through a process of photosynthesis, producing oxygen as a side-effect. While a tree grows it continues to convert CO_2.

4.63 The amount of CO_2 a tree will offset depends on several factors including the type of tree and where it is planted. On average a single broadleaf will absorb in the region of 1 tonne of carbon dioxide during its lifetime, assuming this is approximately 100 years[21]. Based on 192,000 new trees planted by the City Council the carbon offset value could be in the region of 1,920 tonnes per year over the 100-year lifespan, although the profile of carbon sequestration will not be even [higher as the tree matures]. Further work will be undertaken to test these assumptions as further research emerges.

5 Encouraging people, communities and businesses to get involved in caring for their local environment and adopting more sustainable ways of living and working

5.1 'Love Your Chelmsford' has been developed as a point of reference for 'all things green' in Chelmsford and surrounding areas, providing inspiration, advice and opportunities to access and participate in a programme of community activities and events. The intention is to encourage people and organisations to get actively involved in caring for their local environment, taking direct responsibility for tackling climate, environmental and ecological issues, embracing more sustainable ways of living and working, thereby helping meet the carbon reduction challenges for the area.

5.2 'Love Your Chelmsford' promotes positive, environmentally responsible lifestyle choices and seeks to encourage more sustainable behaviours for the benefit of current and future generations. The current focus of the 'Love Your Chelmsford' programme is on:

- Promoting ways to reduce or eliminate waste
- Maximising the amount of waste that is recycled or composted
- Improving energy efficiency and lowering energy consumption
- Identifying opportunities for generating and accessing renewable energy
- Suggesting more sustainable travel options
- Inspiring more sustainable fashion [clothing] choices
- Encouraging participating in the 'greening' activities and the mass tree planting programme

[21] https://www.viessmann.co.uk/en/heating-advice/boilers/how-much-co2-does-tree-absorb.html https://www.encon.eu/en/calculation-co2#:~:text=To%20summarise%20the%20various%20studies,by%2031%20to%2046%20trees

- Promoting healthy eating and more sustainable food choices and encouraging a 'grow your own' mentality
- Promoting the more sustainable use of open fires and wood burning stoves in the home
- Monitoring air quality to promote health and wellbeing benefits
- Improving local environmental quality by keeping Chelmsford clean, free of pollution and discouraging '*environmental crime*'
- Promoting '*green careers*'

5.3 Community engagement through the 'Love Your Chelmsford' programme continues to flourish with the City Council supporting an extensive volunteering programme for all sectors of the community and businesses.

5.4 For parks, green spaces and waterways there are around 1,500 active volunteers, typically 'working' almost 10,000 hours each year, with an equivalent 'work-value' in excess of £116,000 per year[22]. Feedback about the programme is generally very positive, reflected in the high retention rates of volunteers.

5.5 'Love Your Chelmsford' also undertakes promotional campaigns to encourage behaviour changes, ranging from initiatives to reduce food waste to promoting more sustainable fashion and the reuse and re-purposing of clothing and other textiles, as well as ongoing activities such as river cleans and environmental 'days of action'. Between April 2023 and December 2024 there were 8,136 volunteer litter picking equipment requests. 11 schools have 'signed-up' to a litter picking commitment in their local area as part of their environmental education programme. Chelmsford Litter Wombles have recently recruited their 1,000th member and the most recent river clean event was supported by around 100 volunteers.

5.6 A 'Greener Chelmsford' grant scheme has been established, with £100,000 made available from the Community Infrastructure Levy, to support capital projects that:

- Involve measures to improve the 'green infrastructure' of Chelmsford, protecting and expanding natural habitats and increasing biodiversity
- Improve the environmental quality, attractiveness and recreational potential of public spaces, rivers and waterways
- Increase the amount of woodland and the proportion of tree cover in Chelmsford
- Involve measures to lower energy consumption, ensure the most efficient use of water resources, reduce pollution and improve air quality
- Involve measures to reduce the amount of waste generated and ensure that as much as possible of any waste that is generated is reused, recycled or composted
- Lower carbon emissions

Space to Thrive

5.7 'Space to Thrive' has been very successful in engaging with local people and communities to take action to put nature conservation and fighting climate change at the heart of

[22] Using the national volunteer hourly value calculator [£12.21 in 2024]

what they do. Essentially a marketing and communication campaign to support initiatives and projects that will help to combat climate change and encourage people to live more responsibly. Examples include the 'free tree giveaways', birdwatch initiatives, pond restoration works, grow your own schemes and photographic competitions to capture the human interface with nature.

5.8 The City Council is also working with some 600 primary school students planting wildflower plug and spring flowering bulbs as part of the school children and young people volunteer programme, including sites at Ford End, Trinity Road School, Widford School, Maltese Road School. Some of these activities are accompanied by 'school assembly' talks on conservation projects in parks and local nature reserves.

5.9 Through the volunteer programme, students from Thriftwood College and Chelmsford College have been engaged in horticultural projects, hosted by the City Council, as part of their 'extended learning' programme. This offers both practical and work experience to students that may not otherwise have had the opportunity. This programme has been running for 13 years and has involved around 520 young people in total.

5.10 Since 2022 the City Council has run an intern programme for students from Chelmsford College as part of their extended learning courses. This is based in Central Park. This offers work experience placements for students with learning difficulties. Both students who participated last year have now been employed as apprentices, one externally and one with the City Council's grounds maintenance team.

5.11 In a third of local authority areas more than 70% of households don't have access to nature within a 15-minute walk according to new research from Wildlife and Countryside Link. The report, Mapping Access to Nature in England, states that even within the most nature access-rich areas, only 11 out of more than 300 local authorities have 90% or more of households within 15 minutes-walk of nature.

5.12 An 'access to nature' commitment is included in the adopted Local Plan, with a standard that no person should live more than 300m [or 15-minute walk] from their nearest area of natural green space and there should be at least one accessible site of at least 20 hectares within 2 km.

6 Biodiversity net gain [for local planning authorities]

6.1 In respect of planning services, there is a statutory requirement for grants of planning permission to deliver a minimum of 10% gain in biodiversity value [Biodiversity Net Gain]. Developers need to ensure they can demonstrate a net gain through the application of the biodiversity gain hierarchy.

6.2 The hierarchy emphasises that onsite biodiversity gains should be considered firstly, followed by registered offsite biodiversity gains (either delivered on the developers' own land or through the purchase of biodiversity units from a habitat bank), and, as a last resort, through the purchase of statutory biodiversity credits. Development with planning permission subject to the statutory requirement to achieve biodiversity net gain will not be able to commence until a Biodiversity Gain Plan has been approved by the City Council as Local Planning Authority.

6.3 A key component of the adopted Chelmsford Local Plan is to balance the need to accommodate future growth requirements with the need to minimise the effect on the environment, through sustainable development. It seeks to plan positively for the creation, protection and enhancement of networks to ensure a net gain for biodiversity and green infrastructure. Key priorities and policies within the adopted Local Plan include:

- Strategic Priority 7 (Protecting and enhancing the Natural and Historic Environment, and the Green Belt) - includes planning positively for the creation, protection and enhancement of networks to ensure a net gain for biodiversity and green infrastructure in line with the Council's Green Infrastructure Strategic Plan
- Strategic Priority 8 (Creating well designed and attractive places, and promoting healthy communities) - includes seeking to achieve a net gain for biodiversity by providing new green spaces including high quality green infrastructure built into the designs and masterplans of new development
- Strategic Policy S4 (Conserving and enhancing the natural environment) – describes how the Council will plan for a multifunctional network of green infrastructure which protects, enhances and, where possible, restores ecosystems, securing a net gain in biodiversity across the Council's area
- Strategic Policy S9 (Infrastructure requirements) – requires new development to provide or contribute towards ensuring a range of green and natural infrastructure, net gain in biodiversity and public realm improvements
- Policy DM16 (Ecology and Biodiversity) – describes how new development should deliver a net gain in biodiversity where possible, by creating, restoring and enhancing habitats, and enhancing them for the benefit of species

6.4 Following adoption of the Local Plan in 2020, a mandatory requirement for all new developments (unless exempt) to achieve at least 10% biodiversity net gain (BNG). This came into place in 2024. The emerging new Local Plan fulfils this statutory obligation and seeks to go further in relation to protecting and enhancing biodiversity. This includes strengthening Strategic Policy S4 (Conserving and Enhancing the Natural Environment) and Policy DM16 (Protection and Promotion of Ecology, Nature and Biodiversity) to require developments (unless exempt) to provide a minimum 10% biodiversity net gain above the existing ecological baseline value of the site to help ensure that the environment is left in a better state than before the development.

6.5 The emerging new Local Plan proposes to go further than the statutory requirement of 10% net gain in respect of the Chelmsford Garden Community and East Chelmsford Garden Community developments by requiring a minimum 20% biodiversity net gain.

6.6 The Pre-Submission Local Plan includes information on the implementation of the policies and biodiversity net gain expectations of the Council. It requires proposals for biodiversity net gain to be acceptable to the Council in terms of design and location, take into account local priorities set out in the Local Nature Recovery Strategy (LNRS) which guides the delivery of biodiversity net gain projects in Essex, the Essex Green Infrastructure Strategy and the Chelmsford Green Infrastructure Action Plan, and be informed by a comprehensive understanding of habitats and species associated with the site.

6.7 The Council's adopted local validation list sets out the documents that are required to be submitted with a planning application. This goes further than national validation requirements by requiring developers to submit draft post-development biodiversity values with their application, as well as the nationally required pre-development values. The local validation list requires the developer to use the Statutory Biodiversity Metric published by DEFRA (or any subsequent iteration of the Metric).

6.8 Planning applications must also be supported by a draft Biodiversity Net Gain Plan and supporting reports with information to demonstrate how a minimum of 10% biodiversity net gain (or 20% for the Garden Communities) will be achieved, implemented, managed and maintained. These should use the most up-to-date Department of Environment, Farming and Rural Affairs (DEFRA) Biodiversity Metric Calculators, in order for the level of biodiversity value before and after a development takes place to be clearly measured. All development proposals, including those for biodiversity enhancements, will also be required to demonstrate the application of the biodiversity gain hierarchy to ensure harm is avoided in the first instance.

6.9 These Biodiversity Net Gain Plans are also required to include a costed long-term management and maintenance plan to include enough funding to last for a minimum period of 30 years after completion of the development. However, it describes how the Council will aim, where possible, to secure biodiversity net gain for the lifetime of the development in recognition of the climate and ecological emergency and of the wider long-term benefits that biodiversity net gain provides on improving health and well-being of local communities and improving the natural environment of the Council's administrative area.

6.10 Furthermore, the Pre-Submission Local Plan expects the requirements for biodiversity net gain to be provided within the application site boundary to ensure biodiversity in new development and to prevent the removal of biodiversity in developed areas. The Council will only consider off-site provision, or the purchase of off-site biodiversity units, if it can clearly be demonstrated that biodiversity net gain cannot be adequately achieved on-site in accordance with the biodiversity gain hierarchy.

6.11 The purchase of statutory Biodiversity Credits as a mechanism to achieve biodiversity net gain will only be considered as a last resort. Off-site measures will also be expected to be in reasonable proximity to the development, strategically located for nature conservation and be informed by local and national guidance and data including the LNRS, the Essex Infrastructure Strategy and Chelmsford Green Infrastructure Action Plan, to ensure that habitats do not become fragmented, and the users of the new development are able to benefit from being close to nature.

6.12 A significant amount of biodiversity gain is expected to come forward in the coming years alongside new planned development growth identified in the adopted Local Plan and the emerging new Local Plan. This will include biodiversity net gains arising from new employment floorspace and around 7,000 new dwellings forecast for delivery by 2029/30 (as illustrated in the Council's latest Housing Site Schedule April 2024).

6.13 Biodiversity net gain became mandatory for 'major[7]' planning applications submitted from 12 February 2024. It became mandatory for 'minor[8]' developments on 2 April 2024. The Council, as the Local Planning Authority, did not receive any 'major' planning

applications before 2 April 2024. Since 2 April, there have been 990 planning applications submitted.

6.14 There are a number of exemptions, set out in The Biodiversity Gain Requirements (Exemptions) Regulations, whereby planning applications are not required to demonstrate a 10% biodiversity net gain. The most common exemptions include householder development, self-build dwellings, and de minimis development (that is impacting less than 25 square metres of habitat). Taking into account the exemptions, there have been 97 applications which are required to provide at least 10% biodiversity net gain. The householder exemption applies to 654 of the 990 applications (66%).

6.15 For applications required to meet the statutory biodiversity net gain, the submission of a final biodiversity net gain plan and implementation of the plan is secured by a planning condition or through a legal agreement (Section 106 agreement).

7 Our Chelmsford Our Plan – strategic actions

7.1 Our Chelmsford Our Plan key includes priorities concerned with lowering energy consumption, reducing waste, carbon and greenhouse gas emissions, and improving air quality together with taking measures to protect, expand and improve the quality and accessibility of green spaces, improve habitat value and increase biodiversity.

7.2 The key strategic actions identified to help deliver those priorities over the next few years include:

- Implement changes to the configuration of the vehicle fleet and the way it is operated to lower carbon and greenhouse gas emissions
- Formulate and implement a programme to decarbonise heating and cooling systems
- Promote initiatives and actions to improve energy efficiency and reduce energy consumption across the Council's premises and operations
- Achieve Carbon Literate Organisation 'Silver' accreditation demonstrating the Council's commitment to decreasing energy and resource consumption and lowering carbon and greenhouse gas emissions from the Council's activities and operations
- Through the Essex Waste Partnership develop a new waste strategy for the area to co-ordinate and integrate the approach to the collection, treatment and disposal of municipal waste generated from households in Essex
- Provide advice and commercial collection services to assist businesses with complying with the new waste regulations introduced under the provisions of the Environment Act 2021
- Introduce low-cost, highly portable sensors to complement the existing air quality monitoring network
- Explore opportunities to acquire or secure public access to strategic landscape areas that will meet the accessibility standard for natural green space as well as providing suitable land for woodland creation / mass tree planting to achieve the 'greening' targets set

- Pursue land acquisitions to extend publicly accessible green space along river corridors as set out in the Chelmsford Green Infrastructure Strategic Plan 2018-2036
- Adopt new planning policies within the review of Local Plan which secure at least 10% biodiversity net gain on new development sites and at least 20% biodiversity net gain on new garden community sites
- Develop a programme to improve the habitat value of parks and green spaces, creating larger, better connected and more sensitively managed natural spaces and wildlife corridors in accordance with the 'biodiversity duty' introduced by the Environment Act 2021
- Adjust land management policies and practices on Council land to lessen any adverse impact on wildlife and nature and promote biodiversity
- Identify sites with underlying habitat potential, adjust management practices with a view to declaring as local nature reserves
- Implement a sustained large-scale tree planting programme over the next eight-years to establish new areas of woodland and increase the number of specimen and parkland trees on Council maintained land, with a target to achieve at least 20% tree cover in the Chelmsford area by 2032
- Acquire additional land to support the mass tree planting and woodland creation programme
- Work with the Environment Agency to develop a phased programme of works to mitigate flood risk and improve the flood resilience of Chelmsford, including catchment improvements and natural flood management interventions
- Implement a programme of activity to engage with individuals, communities and businesses promoting a greater appreciation of and the positive benefits of living in a greener and nature-rich place encouraging people to lead greener more environmentally sustainable lives
- Facilitate active engagement in the 'Love Your Chelmsford' programme encouraging volunteering and increase participation in environmental initiatives

Appendix A: Chelmsford City Council Climate and Ecological Emergency declared at full Council on 16 July 2019

"Council notes:

That the impacts of climate breakdown are already causing critical damage around the world. That the 'Special Report on Global Warming of 1.5°C', published by the Intergovernmental Panel on Climate Change in October 2018:

a. describes the enormous harm that a 2°C average rise in global temperatures is likely to cause compared with a 1.5°C rise, and
b. confirms that limiting Global Warming to 1.5°C may still be possible with ambitious action from national and sub-national authorities, civil society, and the private sector

That all governmental bodies (national, regional, and local) have a duty to act, and local governments that recognise this should not wait for national governments to change their policies.

That bold policies to cut emissions also have associated health, wellbeing, and economic benefits.

That a growing number of UK local authorities have already passed 'Climate Emergency' motions.

Council therefore resolves to:

- *Declare a 'Climate and Ecological Emergency' that* ***requires urgent action to make the Council's activities net-zero carbon by 2030***
- *Achieve* ***100% low carbon energy across the Council's full range of functions by 2030***
- *Ensure that all strategic decisions, budgets, and approaches to planning decisions are in line with a shift to net-zero carbon by 2030*
- *Support and work with all other relevant agencies towards making the City of Chelmsford and surrounding area net-zero carbon within the same timescale*
- *Ensure that Officers and political leadership teams within Chelmsford City Council embed this work in all areas and take responsibility for reducing, as rapidly as possible, the carbon emissions resulting from the Council's own activities*
- *Ensure that any recommendations are fully costed and that the Executive and Overview & Scrutiny bodies regularly review Council activities, taking account of production and consumption emissions, and produce an action plan within 12 months together with budget actions and a measured baseline*
- *Request that the Council's Overview & Scrutiny Committee considers the impact of Climate Change and the Environment when reviewing Council policies and strategies*

- *Work with influence and inspire partnerships across the city to help deliver this goal through all relevant strategies, plans and shared resources by developing a series of meetings, educational events for City Council staff and the wider community and partner workshops focusing on the Climate and Ecological Emergency*
- *Request that the Council and its partners take steps to proactively include young people in the process, ensuring that they also have a voice in shaping the future*
- *Establish a Chelmsford Climate Change Partnership within the remit of the Chelmsford Policy Board, involving councillors, residents, young people below voting age, academics, and other relevant parties, to prioritise carbon reduction measures, identify related benefits to employment, health, agricultural and transport sectors and develop a strategy in line with the 'net-zero carbon by 2030' target*
- *Establish a baseline for Chelmsford's ecological status and monitor progress year on year*
- *Report on the level of Council investment in the fossil-fuel industry and review the City Council's investment strategy to give due consideration to Climate Change impacts in their investment portfolio*
- *Ensure that all reports in preparation for the 2020/21 budget cycle and investment strategy note the actions the City Council will take to address this Emergency*
- *Call on the UK Government to provide such new powers and resources as are necessary to make this possible, and to work within the LGA to encourage other councils to back this plan*