The City of Edinburgh Council

Air Quality Action Plan

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

January 2024

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Foreword

Air pollution is a serious threat to all our health, but especially the young, the old and people with existing health problems. Harmful levels of air pollution are damaging people's health, quality of life, and cutting lives short and poorer and more disadvantaged people are disproportionately affected.

Improvements in air quality have already been achieved across Edinburgh, which should be celebrated. These improvements have largely been focused on nitrogen dioxide, with key interventions including the impending Low Emission Zone, along with other supporting actions to reduce traffic emissions.

Even with these successes, from a health perspective there is no safe level of certain regulated pollutants, with Particulate Matter ($PM_{2.5}$) now being among those which health experts are most concerned about. $PM_{2.5}$ can penetrate the lungs and enter the body through the blood stream, affecting all major organs. Exposure to $PM_{2.5}$ can cause damage to the brain, our cardiovascular and respiratory system, provoking, for example stroke, lung cancer and chronic obstructive pulmonary disease (COPD).

$PM_{2.5}$ can come from many sources for example: domestic solid fuel burning, traffic exhausts, industry and farming. There can be considerable contribution from sources originating outside of Edinburgh. For these reasons this Plan aims to tackle more than just traffic pollution and looks to the future not only in tackling $PM_{2.5}$, but also linking up with the 2030 Climate Strategy and including actions relating to the feasibility of zero carbon city centres. Actions are included in the plan which aim to reduce emissions from domestic solid fuel burning, which is becoming a more urgent priority both nationally and locally.

Improvements in air quality, for both nitrogen dioxide and $PM_{2.5}$ can only happen by addressing the range of sources in an integrated way. We know we cannot do this alone. We have been working with key partners, including NHS Lothian, the University of Edinburgh, the Scottish Environment Protection Agency, and an array of others to ensure that actions are relevant, that our partners are on board with implementation, and that we have the most up to date evidence base we can. We will also continue to work with the Scottish Government to ensure that national action, through the Cleaner Air for Scotland strategy, complements and supports action in Edinburgh.

Air Quality is fully integrated within the City Mobility Plan, and the emerging City Plan 2030. Many of the key actions not only improve air quality, but also reduce climate pollution. In the future it will be easier to get around Edinburgh on foot, by bike or by public transport, helping to reduce traffic emissions. Where vehicles are needed our plan is to guide for the future of electric vehicles. We are also committed to ambitious placemaking measures for longer term shifts to reduce energy and to bring services closer to people.

We accept, however, that simply meeting minimum air quality standards is not good enough for the old and those with existing health problems. In recent years, the World Health Organisation has set the tightest standards yet for air pollution, which will be a huge challenge to achieve. We need to acknowledge this challenge, and ensure we prioritise the health and wellbeing of residents, workers, and visitors to Edinburgh in our pursuit for cleaner air.

Professor Scott Arthur

Convenor of the Transport and Environment Committee

The City of Edinburgh Council

2024

Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of the statutory duties required by the Local Air Quality Management framework. It outlines the actions that will be taken to improve air quality in Edinburgh between 2024 and 2028.

Air pollution is associated with adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer and more recent research associates it with dementia and brain ill-health. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often the less affluent areas.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion. The City of Edinburgh Council is committed to reducing the exposure of people in Edinburgh to poor air quality to improve health.

This Plan focuses on locations where there are risks of exceedances of the nitrogen dioxide (NO_2) Air Quality Objectives, but also identifies strategic measures which will ensure concentrations of pollutants are reduced across Edinburgh, especially $PM_{2.5}$. This approach is supported by that set out in the Cleaner Air for Scotland 2 strategy (2021), which provides national policy support for a precautionary public health approach to air pollution.

The AQAP is intended to complement the substantial amount of work which has been undertaken in relation to the Low Emission Zone, which was implemented on 31 May 2022 (and will be enforced from 1st June 2024). It also strongly supports elements of the Council's City Mobility Plan, 2030 Climate Strategy and the current Local Development Plan and emerging City Plan 2030.

For this AQAP, actions have been developed under eight broad themes:

- Low Emission Zone (LEZ)
- Strategic Transport
- Behavioural Change to Active Travel
- Public Transport

- Low Emission Vehicles
- 2030 Climate Strategy
- Integrated Policies and Guidance
- Domestic Solid Fuel Burning

The following issues need to be prioritised:

- Implementation of the LEZ, which should reduce and maintain concentrations of nitrogen dioxide to within legal standards in Edinburgh,
- Specific action in other areas of poor air quality such as St Johns Road AQMA and continued action in areas where AQMAs are being revoked to ensure air quality continues to improve e.g., Inverleith Row,
- Through collaborative working, ensure that wider strategic air quality action is implemented through existing policy areas. This will include strategic transport improvements, promotion of behaviour-change to reduce private vehicle use, promotion of low emission vehicles and controlling domestic emissions, and;
- Plans being developed and implemented for placemaking, climate change and noise reduction are closely co-ordinated and aligned with those for air quality in order to maximise co-benefits.

The AQAP outlines how the Council and partners will effectively tackle poor air quality to meet and maintain statutory air quality objectives and generally work towards improving air quality. However, there are a large number of air quality policy areas that are outside the influence of the Council, that could use evidence the Council has, and so we will continue to work with the Scottish Government and partner organisations on policies and issues beyond the Council's direct influence.

The AQAP, along with supporting information papers on delivering actions for public transport, active travel, parking and road safety, is fully integrated with the City Mobility Plan (CMP), having been through an extensive joint consultation. The Plan supports the strategic vision that the city is connected by a safer and more inclusive net zero carbon transport system, delivering a healthier, thriving, fairer and compact capital city and ensuring a higher quality of life for all residents. The AQAP will also tackle sources of air pollution wider than transport and include actions that aim to reduce domestic solid fuel burning.

Separately, further work will be undertaken in respect to the actions that are required to address Particulate Matter (PM_{10}) within the Salamander Street Air Quality Management Area. Emissions from industrial and fugitive sources from operations in and around Leith Docks are a contributory factor, as well as traffic. The steering group for this AQMA, consisting of Scottish Government, the Scottish Environmental Protection Agency (SEPA), Forth Ports and Council officials will reconvene in 2024.

In accordance with the requirements of relevant policy guidance (PG(S)(23)) the City of Edinburgh Council expects that all of the AQMAs within Edinburgh will be revoked by the end of this plan period (2028) and where possible, within a shorter timeframe.

Responsibilities and Commitment

This AQAP was prepared by the Placemaking and Mobility Strategy and Development team of the City of Edinburgh Council with the support and agreement from the Executive Director of Place, Service Directors for Sustainable Development and Operational Services and Heads of Service and managers for a wide range of Council disciplines. Collaboration was also undertaken with partner organisations; SEPA, Transport Scotland and NHS Lothian.

This AQAP is to be approved by the Transport and Environment Committee in February 2024. Progress on actions each year, will be reported in the Annual Progress Report (APR) produced by the City of Edinburgh Council, as part of the statutory Local Air Quality Management duties.

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1. Introduction

Air pollution is associated with adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer and more recent research associates it with dementia and brain ill-health. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often the less affluent areas[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

This report outlines the actions that the City of Edinburgh Council and partners will deliver between 2024-2028 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents, workers and visitors to the City of Edinburgh Council's administrative area.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within the Council's Air Quality Annual Progress Report (APR).

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010

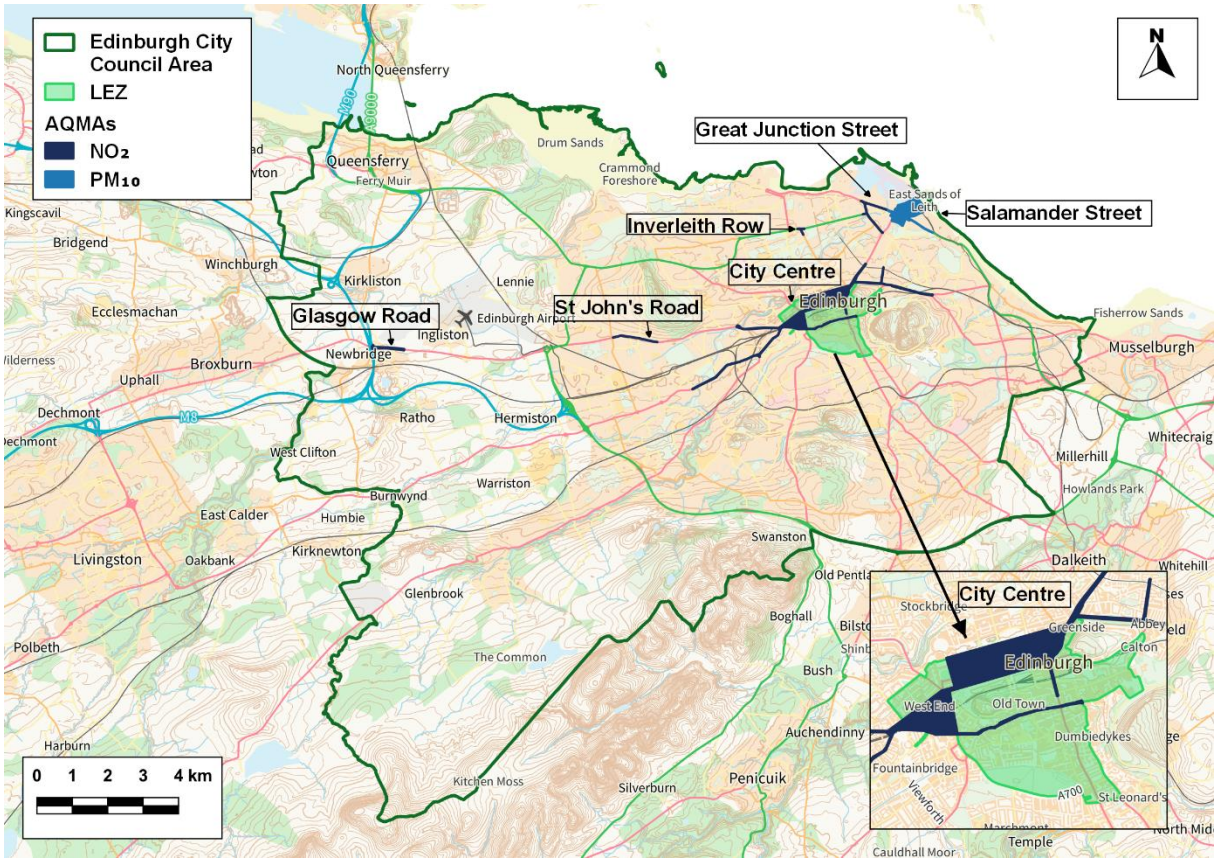
[2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

2. Summary of Current Air Quality in Edinburgh

The City of Edinburgh Council has declared six Air Quality Management Areas (AQMAs), five for the pollutant nitrogen dioxide (NO_2) and one for fine particulates (PM_{10}). Figure 1 shows the AQMAs within the Council area, and the Low Emission Zone (LEZ) boundary.

Figure 1 Edinburgh's AQMAs and Low Emission Zone



Road traffic is by far the greatest contributor to the high concentrations of NO_2 in the city. However, the AQMA at Salamander Street declared for PM_{10} exceedances is due to other sources as well as traffic. Emissions from industrial and fugitive sources from operations in and around Leith Docks are a contributory factor. Domestic and commercial power and heating (including gas and solid fuel) also contributes to NO_2, PM_{10} and $PM_{2.5}$ concentrations in the city.

2.1 Current Status of the Air Quality Management Areas (AQMAs)

The Scottish Government has approved the Council's intention to revoke the Inverleith Row AQMA as there has been a number of consecutive years of compliance with the objectives. Furthermore, air quality modelling has predicted a sustained reduction of NO_2 concentrations when the LEZ is operational. A revocation order is planned to be published in January 2024.

Approval has also been given to amend the St John's Road AQMA in order to remove the hourly exceedance designation, with the objective having been achieved for a number of years. Consideration of the revocation of the AQMA in full will be undertaken by the statutory Local Air Quality Management (LAQM) annual review and assessment process and reported in the Annual Progress Report (APR).

Within the Great Junction Street AQMA, there have been no reported breaches of NO_2 objectives since 2016. It is uncertain what the impact of the traffic management changes from the new tram network extension and the low traffic neighbourhoood in the local area will have on NO_2 concentration. Therefore, the Council will consider revoking this AQMA once the impacts of these are known.

In the Central and Glasgow Road AQMA, objectives are currently being achieved. Again, under the LAQM review and assessment process revocation of these AQMA will be considered and reported in the APR.

There continues to be a downward trend in annual concentrations of PM_{10} in the Salamander St AQMA. There have been no exceedances in the annual PM_{10} objective since 2019. There was marginal compliance with the 24-hour objective in 2022.

The status of the AQMAs is summarised in Table 3.1 (overleaf). Further details can be found at: https://www.edinburgh.gov.uk/downloads/download/13180/air-quality-management-areas.

Table 2.1 – Summary of the status of AQMAs in Edinburgh

AQMA	Objectives declared	Current Status
Central	NO_2 annual mean	Exceedances of annual mean objective at multiple locations in 2019, one location in 2020 and no exceedances in 2021 or 2022.
	NO_2 1-hour mean	No exceedances since 2018
St Johns Road	NO_2 annual mean	No exceedances since 2020.
	NO_2 1-hour mean	No exceedances since 2015. *AQMA currently being amended to remove this designation.*
Great Junction Street	NO_2 annual mean	No exceedances since 2016.
Glasgow Road	NO_2 annual mean	No exceedances since 2019.
Inverleith Row	NO_2 annual mean [2]	No exceedances since 2017. *AQMA currently being revoked.*
Salamander Street	PM_{10} annual mean	No exceedance since 2020.
	PM_{10} 24hr mean	No exceedance since 2015, although close to the objective in 2022.

2.2 Air Quality Data

Even without the effect of the pandemic, long term trends show concentrations of the main pollutants are decreasing at most locations across the city, albeit there are areas of concern, especially in the Central AQMA. This area has historically had the greatest number of sites exceeding the objectives and some of the highest concentrations in the city. The appraisal work for the Low Emission Zone scheme concluded that the City Centre was a priority for action.

The impact of the COVID-19 pandemic was significant for air quality during 2020 and 2021. Restrictions on travel resulted in a significant drop in NO_2 concentrations at almost all locations across the city with just one location within the Central AQMA breaching the legal objective. No objectives for fine particulate matter (PM_{10} and $PM_{2.5}$) were breached, including within the PM_{10} Salamander Street AQMA, for the first year since it was declared in 2017.

Monitoring data from 2020 or 2021 are unlikely to be representative in terms of long-term trends. For the purpose of this AQAP, consideration has been given to pre-pandemic pollution concentrations as well as 2022 data. In some cases, 2022 data are higher than in 2021, but still on a downward trajectory from pre-pandemic levels.

In 2019, exceedances of the NO_2 annual objective were monitored within St John's Road and the Central AQMAs. Exceedances of the NO_2 annual objective were also reported within the Glasgow Road AQMA, however once distance correction calculations were carried out, the estimated concentrations were below the objectives. There were measured exceedances outwith but adjacent to the Central AQMA, which will continued to be monitored.

2022 data shows compliance with current air quality objectives across Edinburgh. Although one diffusion tube in Queensferry Road was exceeding, when corrected for relevant exposure (where the air quality objectives apply), it was well below the objective.

The overriding downward trend reveals the longer-term positive effects of emissions reduction measures such as the increased use of lower emissions (newer) vehicles. Reduction in traffic, predominately associated with the effects of the pandemic may also be having an effect.

This AQAP focuses predominately on the NO_2 (traffic related) AQMAs, although the need to reduce local air pollutant emissions across Edinburgh is also noted and incorporated. The Salamander Street AQMA, declared for PM_{10}, will have a separate focus as detailed above.

For Scottish Local Authorities, $PM_{2.5}$ has now been prescribed in regulations with an annual mean objective of 10 µg/m^3 to be achieved by 2020. This objective has not been exceeded at any monitoring location in the last 5 years.

3. The City of Edinburgh Council's Air Quality Priorities

The priority for this revised AQAP is to ensure the Council and partners are working towards meeting the statutory air quality objectives but also, where practicable and feasible, to reduce local air pollution emissions across the city.

These priorities are consistent with Cleaner Air for Scotland 2 (CAFS2), in which the first theme is adopting a precautionary public health approach to air pollution reduction, with compliance with domestic and international air quality standards being a minimum.

Continuing economic growth in the city and wider region presents a challenge for air quality. Population growth creates an inevitable demand for all modes of transport and supported infrastructure. The Council is preparing a new Local Development Plan for Edinburgh - the City Plan 2030, which sets out policies and proposals for development in Edinburgh between 2020 and 2030. Alignment with local air quality management and in developing local and national air quality strategies will be crucial to ensuring sustainable economic growth.

Alongside the City Plan 2030, the City Mobility Plan, the Edinburgh 2030 Climate Strategy and plans for noise reduction and the different aspects of transport, will shape the Council's priorities over the 5 years of this AQAP.

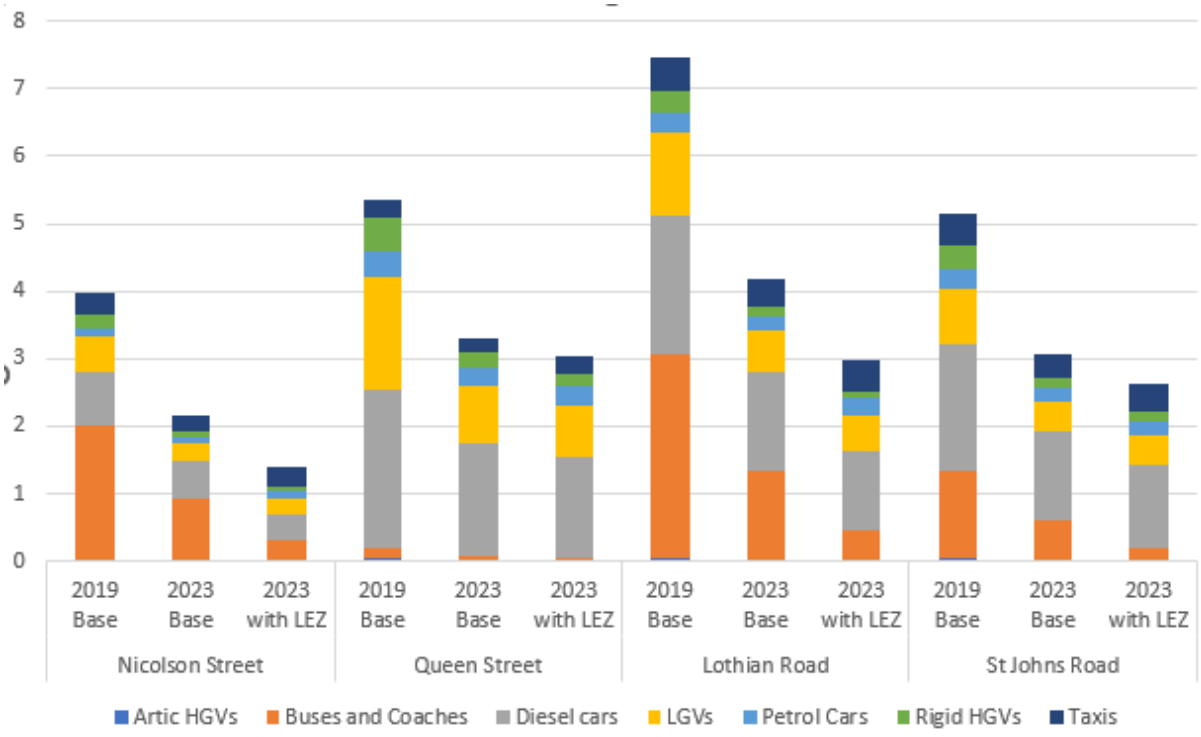
Actions underway within Edinburgh are driven by national as well as local priorities. The full policy context is set out in Appendix C.

3.1 Source Apportionment

The measures presented in this AQAP are intended to be targeted towards the predominant sources of emissions within the Council's area. Source apportionment exercises were therefore carried out on traffic emissions.

In 2021, as part of the feasibility work for the LEZ, SEPA presented in the Low Emission Zone Evidence Report[4]. This included percentage source contributions (as emissions) for the overall LEZ area, and at key locations within, and just outside, the LEZ in order to illustrate the variation at different locations across Edinburgh. Figure 2 illustrates emissions factors (NOx emissions in tonnes per kilometre per year) at four locations within and outside the LEZ. Figures for 2019 baseline and 2023 with and without (Base) LEZ are presented.

Figure 2: Source Apportionment: Emission Factors (tonnes/km/yr) from all Vehicle Sectors



[4] Available at https://www.edinburgh.gov.uk/downloads/file/30519/cleaner-air-for-scotland-%E2%80%93-national-modelling-framework-low-emission-zone-evidence-report-%E2%80%93-edinburgh-scottish-environment-protection-agency-september-2021

Total emissions from all vehicle categories will fall significantly between 2019 and 2023, with the implementation of the LEZ showing further reductions.

The contribution from each vehicle class is different on a street-by-street basis. The figures show that proportionally buses and coaches will have the greatest emissions reductions through the implementation of the LEZ. Significant reductions are predicted from all vehicle categories, except for petrol cars, which are predicted to increase emissions marginally due to an increase of petrol cars (which are mostly compliant) travelling through the LEZ. Lothian Road, within the LEZ has one of the highest predicted concentrations, however total emissions will decline significantly with the LEZ, with proportionally buses having the greatest reductions. Queen Street outwith and on the boundary of the LEZ, sees slight reductions from all vehicle categories however diesel cars are the predominant contributor.

These findings are also supported by work that was carried out in the St John's Road and Great Junction Street AQMAs. With grant funding the Council contracted Ricardo AEA to undertake remote sensing emissions testing in February and July 2020. This consisted of specialist equipment at the roadside, alongside automatic number plate recognition cameras to collect details of the vehicle's tail-pipe emissions in the real-world. Real-world emission factors were derived from the study and then combined with the local fleet data, where it was possible to apportion the overall vehicle tail-pipe emissions to the different vehicle categories.

Figures 3 and 4 below show the apportionment of car, LGV, bus and rigid HGV emissions to vehicles by fuel type and Euro standard based on the fleet composition during the survey campaigns.

Vehicle classes for which the emission factors are particularly uncertain (because there were fewer than 10 valid emissions measurements) were excluded from the source apportionment plots. In general, these vehicles would be expected to contribute a small proportion of the total NOx emissions as only a small number of these vehicles were seen on the road during the campaigns.

Figure 3 Apportionment of emissions to cars, vans, buses and rigid HGVs by fuel type and Euro standard (E) based on real-world emission factors and fleet composition at St John's Road

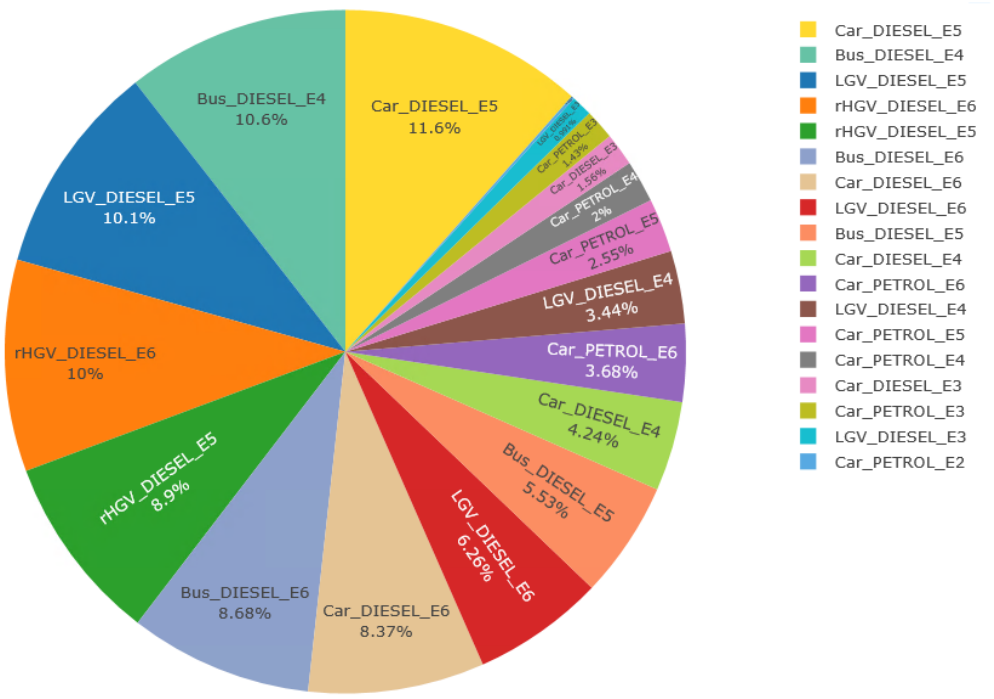
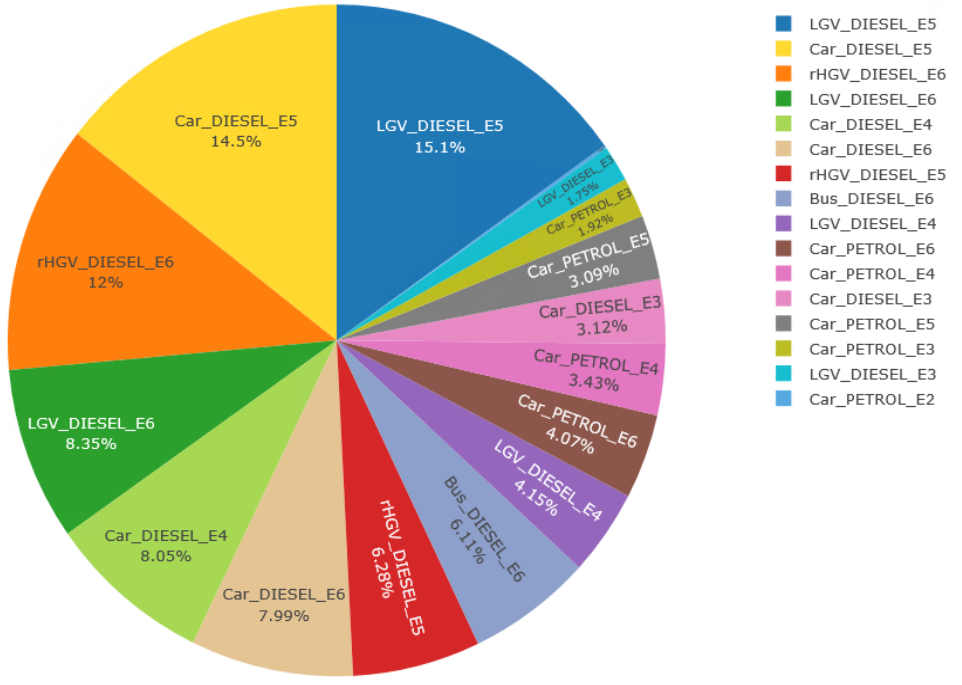


Figure 4 Apportionment of emissions to cars, vans, buses and rigid HGVs by fuel type and Euro standard (E) based on real-world emission factors and fleet composition at Great Junction Street



The Council also undertook source apportionment work for the Glasgow Road AQMA based on a 2022 traffic survey. An ANPR camera survey was conducted in September 2022, in order to obtain locally robust information on both the vehicle types and Euro standards of the vehicles using Glasgow Road. Proportions of vehicle types and Euro standards are illustrated below. Analysis has been undertaken at the diffusion tube monitoring locations within the AQMA, in order to provide a context in relation to concentrations, as set out in LAQM Technical Guidance (TG22).

Figure 5 Apportionment of emissions at diffusion tube monitoring locations to vehicle types based on fleet composition at Glasgow Road

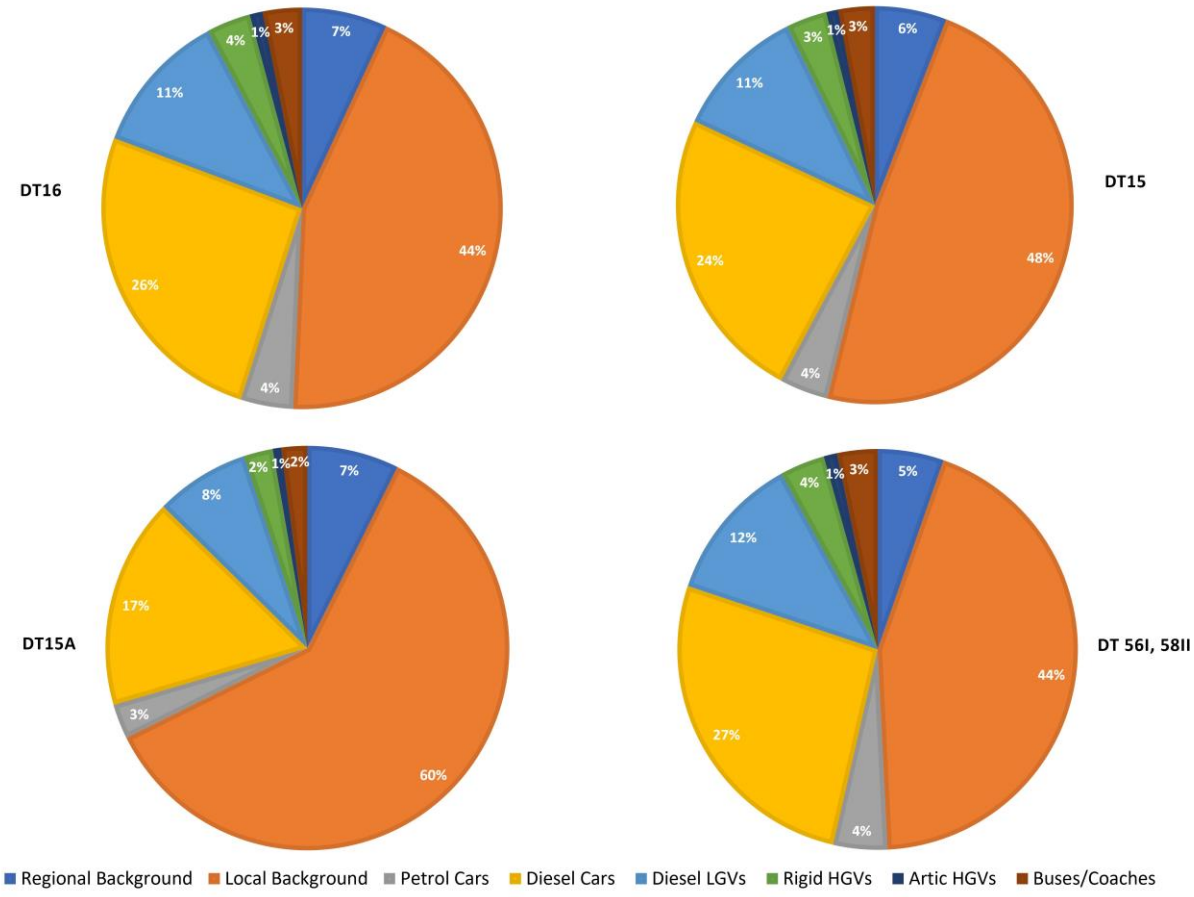


Figure 5 shows that at all of the monitoring sites, background concentrations (local and regional) make up a large proportion of the overall emissions. It should be noted that background concentrations are likely to be significantly influenced by general motorway traffic, especially from the adjacent M9.

In terms of the traffic emissions, the majority of emissions are from diesel cars and LGVs, with smaller proportions of emissions from petrol cars, HGVs and buses.

Figure 6 shows the traffic emissions apportioned (ie not including background), for a clearer illustration of the breakdown of NOx emissions from the adjacent road traffic.

Figure 6 Apportionment of emissions to vehicle types based on fleet composition at Glasgow Road

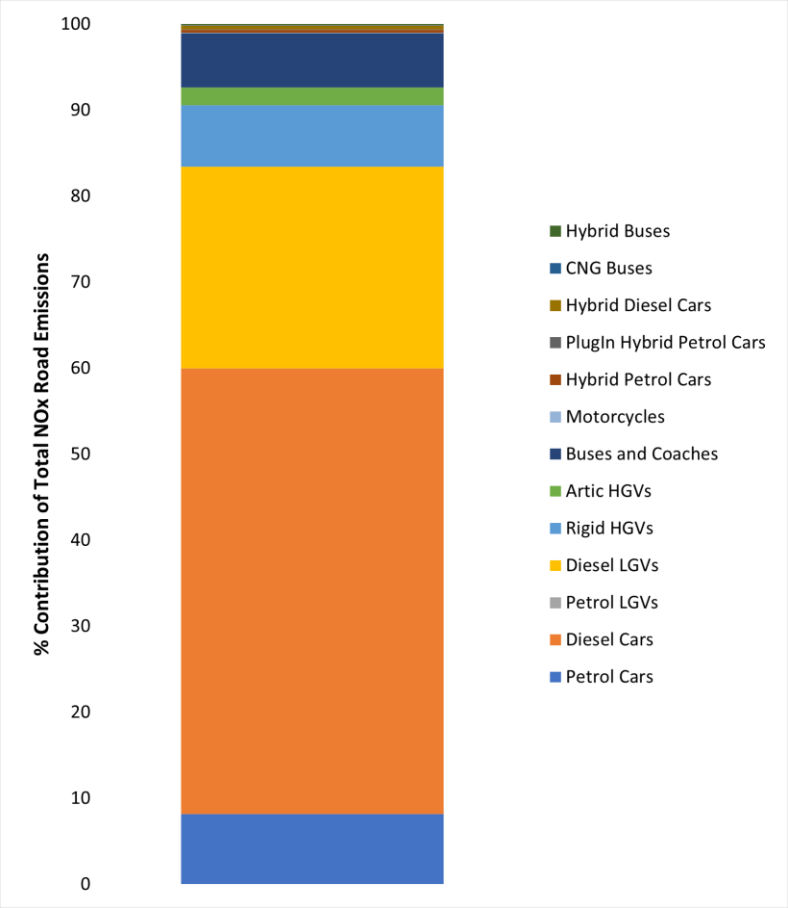
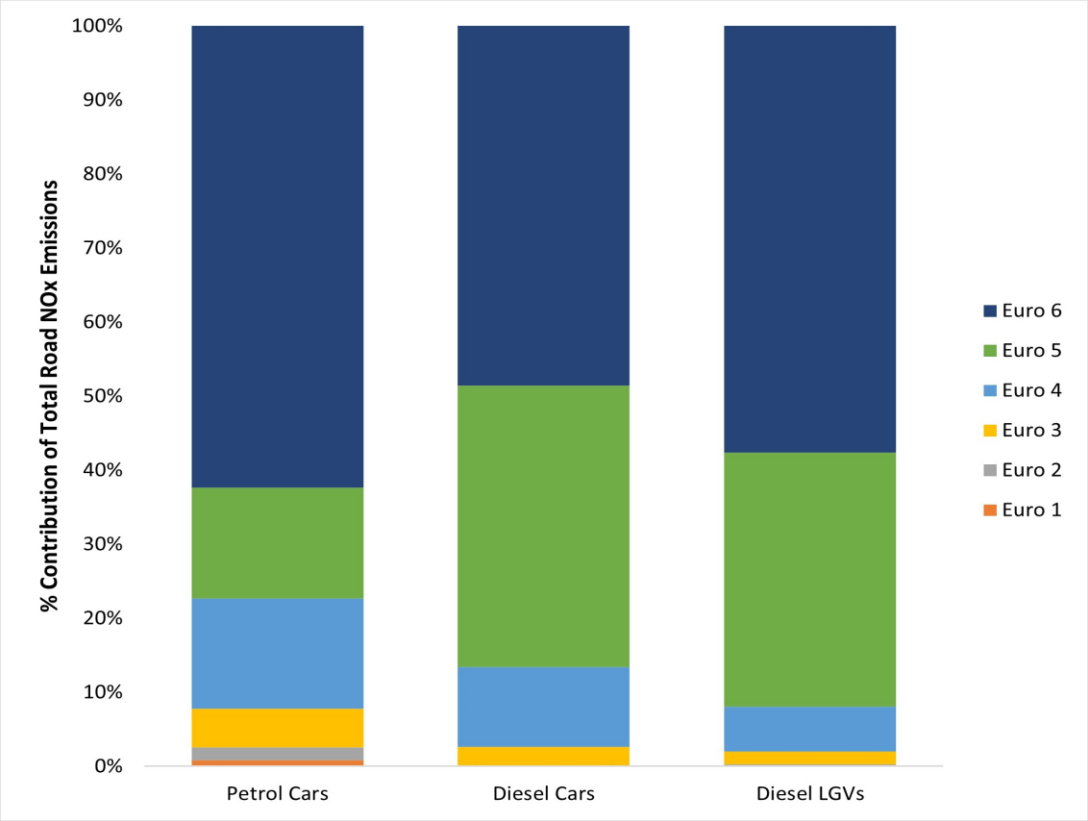


Figure 7 shows the breakdown in emissions between Euro classes for the main contributors to overall emissions. Due to their numbers in the fleet, emissions from Euro 5 and 6 vehicles predominate, with very little contribution to emissions from vehicles older than Euro 4.

Figure 7 Apportionment of emissions to Euro classes for Petrol cars, diesel cars and LGVs based on fleet composition at Glasgow Road



The source apportionment work has been based on modelled scenarios of future traffic and emission predictions, real-world tailpipe emission factors and recent surveyed traffic, which has provided a comprehensive analysis of emissions in Edinburgh. Overall, it illustrates that there is a need to include all vehicle types across a range of actions within the AQAP.

3.2 Required Reduction in Emissions

Predictions on emission reductions were calculated through the Council's participation in the Cleaner Air for Scotland's National Modelling Framework (NMF) process to develop the City NMF Model, for the Low Emission Zone (LEZ) assessment work. These findings have been well defined in SEPA's evidence reports.

The NMF assessment work suggested that there will be locations in the Central and St John's Road AQMAs which may still have roadside exceedances at the kerbside locations post LEZ implementation, but current monitoring data at relevant receptors

(normally buildings, rather than kerbside locations), indicates that the exceedance area for the Air Quality Objectives has been reducing substantially. The latest monitoring data from 2022 suggest that at locations of relevant exposure, there were no exceedances of the air quality objectives. It should also be noted that although compliance with air quality objectives is important, from a health perspective, a general reduction in emissions of the key pollutants (including PM_{10} and $PM_{2.5}$) may provide better health outcomes than focussing on hotspot locations. For this reason, wider, more strategic measures have been included.

3.3 Key Priorities

Based on the evidence provided above and consultation outcomes as set out in Chapter 4, the following issues need to be prioritised:

- Implementation of the LEZ, which should reduce and maintain concentrations of nitrogen dioxide to within legal standards in Edinburgh,
- Specific action in other areas of poor air quality such as St Johns Road AQMA and continued action in areas where AQMAs are being revoked to ensure air quality continues to improve e.g., Inverleith Row,
- Through collaborative working, ensure that wider strategic air quality action is implemented through existing policy areas. This will include strategic transport improvements, promotion of behaviour-change to reduce private vehicle use, promotion of low emission vehicles and controlling domestic emissions, and;
- Plans being developed and implemented for placemaking, climate change and noise reduction are closely co-ordinated and aligned with those for air quality in order to maximise co-benefits. In particular, the actions within this plan are fully integrated with the City Mobility Plan (CMP) Implementation Plan, and consultation on this plan.

4. Development and Implementation of the City of Edinburgh Council's AQAP

4.1. Consultation and Stakeholder Engagement

In developing this AQAP, we have worked with other local authorities, partner organisations, businesses and the local community in compiling actions that improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 1.

This AQAP was originally considered by the Council's Transport and Environment Committee in December 2022. Thereafter, a period of statutory consultation and engagement was undertaken in combination with related placemaking and mobility-led plans. This approach maximises the strategic understanding of the interlinkages and opportunities for coordinated delivery of actions.

The consultation on the AQAP was extensive and wide ranging, as part of the process for delivering the City Mobility Plan (CMP). The process incorporated stakeholder consultation (in-person workshops and public drop-in sessions), an online survey open to the public, focus groups and market research.

The response to the consultation and stakeholder engagement is provided in Appendix A: Response to Consultation, which also provides links to relevant documentation online.

Table 1 – Consultation Undertaken

Consultee	Consultation Undertaken
The Scottish Government	Yes
The Scottish Environment Protection Agency (SEPA)	Yes
Transport Scotland	Yes
All neighbouring local authorities	Yes

Consultee	Consultation Undertaken
Other public authorities as appropriate, such as NHS Scotland and Health Boards	Yes
Bodies representing local business interests and other organisations such as community groups as appropriate	Yes

This version of the Air Quality Action Plan will be presented to the Council's Transport and Environment Committee for approval in February 2024, prior to submission to the Scottish Government.

4.2. Steering Group

A Steering Group was set up in order to take the AQAP forward. Three steering group meetings were initially held (9th March, 7th April and 27th June 2022) and involved the collaboration of officers across the Council in different disciplines, and partner organisations; SEPA, Transport Scotland and NHS Lothian.

Meetings with specific members of the Group, and others with relevant responsibilities were also held. These have included meetings relating to Climate Change work, the Council's Travel Plan, EV infrastructure and Parking Strategy and Public Transport. SEPA have provided specific information on the LEZ and NMF modelling development.

The Steering Group was made up of the following members:

- Executive Director of Place
- Service Director – Sustainable Development
- Service Director – Operational Services

As well as the Council Heads of Service and managers for:

- Placemaking and Mobility
- Planning and Building Standards
- Network Management and Enforcement (Transport)
- Policy and Insight (Sustainability)

- Regulatory Services
- Finance and Procurement
- Communications

In addition, the project team consisted of

- Environmental Health Officers
- Placemaking and Mobility Strategy and Development Team Leader
- Air Quality Consultants LTD.

Associate members from external bodies included SEPA, Transport Scotland and NHS Lothian.

A further Steering Group meeting was held on the 31st October 2023 to specifically discuss the outcomes of the consultation and any required changes to actions.

As suggested during the consultation process, and agreed by the Steering Group at the meeting on the 31st October, the group will continue to meet in order to provide governance for the plan, to ensure that implementation of the range of measures is progressing, and identify any challenges to implementation. This approach will also feed into the annual reporting to the Scottish Government on progress of the AQAP.

4.3. Integrated Impact Assessment

The Council's Integrated Impact Assessment (IIA) process and guidance has been developed by the four local Lothian local authorities and NHS Lothian and is relevant for developing action plans. The IIA process ensures legal obligations are met in terms of equality, socio-economic disadvantage, climate change, sustainability, the environment and human rights, by assessing the impact the action plan could have on certain population groups.

A IIA workshop was carried out on 22nd September 2022 with representatives of the following disciplines within the Council; Transport, Placemaking, Environment and Heritage, Strategy and Insight, Environmental Health and Planning.

Findings to date highlight that there will be positive impacts across all sectoral considerations – equality, health, well-being and human rights, environment and sustainability and economic impacts. Impacts were also highlighted that have the potential to cause negative effects however all but one of these was able to be

mitigated through education and communication and working effectively with key stakeholder and partner organisations. Potential negative impacts on commercial biomass providers could not be negated.

Further research and discussion has been undertaken to ascertain how gypsy/travelling communities could be impacted in respect to future policy development on solid fuel burning. Ongoing work with these communities will continue to provide information on air quality in an accessible way, covering both the LEZ and domestic burning, where relevant.

4.4. Strategic Environmental Assessment

A Strategic Environmental Assessment (SEA) screening process was also undertaken for those actions not previously considered under the SEA requirements in other Council strategies e.g., City Mobility Plan, 2030 City Plan or Climate Strategy.

The screening exercise showed that the relevant actions were likely to have slight positive impacts, but the effects were not expected to be significant. Therefore, concluding that a SEA is not required.

A report detailing the screening assessment was submitted to the SEPA Gateway for consideration, as per due process, and responses have been incorporated into the final plan.

5. AQAP Actions

Table shows the AQAP actions for Edinburgh, to be implemented over the five-year time period for the Plan. The table contains:

- A list of the actions that form part of the plan.
- Expected or actual completion year for measures.
- Measure status (whether the measures are planned, in progress, completed or delayed)
- The responsible individual and departments/organisations who will deliver these measures.
- How the measure will be funded (Scottish Government or other).
- Estimated cost of implementing each measure (overall cost and cost to the local authority).
- Expected benefit in terms of pollutant emission and/or concentration reduction.
- Key milestones towards delivery.

NB: Please see future Air Quality Annual Progress Reports, compiled as part of the statutory LAQM process, for updates on the implementation of these actions.

The Council's proposed AQAP actions consist of measures under eight key themes:

- Low Emission Zone (LEZ)
- Strategic Transport
- Behavioural Change to Active Travel
- Public Transport
- Low Emission Vehicles
- 2030 Climate Strategy
- Integrated Policies and Guidance
- Domestic Emissions.

It should be noted that there is some overlap between the overriding themes, with some of the actions cutting across multiple categories. For example, measures which support the 2030 Climate Strategy are also likely to support behavioural

change to active travel, support low emission vehicles, or reduce domestic emissions. The LEZ will support a modal shift to active travel and public transport as well as encouraging residents to use lower emission vehicles.

In accordance with the requirements of Scottish policy guidance (PG(S) (23)) predictions are considered in respect to the likely effect on AQMAs in Edinburgh. The Council expects that all of the AQMAs within the city of Edinburgh will be revoked by the end of this plan period (2028) and where possible within the shortest possible time.

Table 2 – Air Quality Action Plan actions is detailed overleaf.

Table 2 – Air Quality Action Plan Actions

Theme	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisations	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Action	Key Milestone	Comments
1. LEZ	1.1 Implement the Low Emission Zone and key actions such as the road network mitigation measures, signage, enforcement systems, communication plan and further development of the LEZ through continued working with Scottish Government to monitor and evaluate performance and maintain City NMF modelling work.	Promoting Low Emission Transport – Low Emission Zone	2025	Partially completed	The City of Edinburgh Council (CEC) (Placemaking and Mobility, Network Management and Communications)	CEC, Scottish Government, Transport Scotland	Partially funded	£1 million - £10 million	NOx emissions from traffic sources within LEZ by 55% (equivalent to 25-30 tonnes/year), when compared to 2019 levels	Initial implementation on 31st May 2022 Enforcement begins 1st June 2024.	
	1.2 Work with Transport Scotland and SEPA to look at opportunities to promote zero-carbon city centres within the existing LEZs governance structure.	Promoting Low Emission Transport – Low Emission Zone	Ongoing	Planned	CEC (Placemaking and Mobility), SEPA, Transport Scotland	CEC	Funded (staff time)	None	None	Initial meeting 2024	Cleaner Air for Scotland Strategy action
2. Strategic Transport	2.1 In the context of a strategic approach to traffic management that seeks to reduce motorised traffic and encourage public transport and active travel, seek to ensure that traffic management projects achieve positive impacts on air quality especially in locations in breach of, or at risk of breaching, air quality objectives, and include mitigations for negative impacts.	Traffic Management – Strategic Highway Improvements	Applicable to each scheme	In progress	CEC (Network Management)	Applicable to each scheme	Applicable to each scheme	Applicable to each scheme	Modelled emission reductions for individual schemes	Applicable to each scheme	In conjunction with City Mobility Plan and Council Asset Programmes

Theme	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisations	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Action	Key Milestone	Comments
	2.2 Complete design work for improvements at St John's Road / Drumbrae Junction as part of the Circulation Plan's A8 Corridor programme and implement improvements.	Traffic Management – Strategic Highway Improvements	As per agreed delivery programme	Preliminary design and traffic modelling undertaken	CEC (Placemaking and Mobility)	CEC, Scottish Government, Transport Scotland,	Unfunded	£500k-£1million	Not quantifiable	Detailed design work completed.	
	2.3 Ensure that any new traffic management schemes within the Glasgow Road AQMA achieve improvements in local air quality and reduce exposure to pollutants	Traffic Management – Strategic Highway Improvements	Ongoing	Scheme currently under consideration	CEC (Placemaking and Mobility and Network Management)	City Deal	Funded	To be confirmed (TBC)	TBC	Agreed outline business case 2024	
3. Active Travel	3.1 Engage in Clean Air Day on an annual basis	Promoting Travel Alternatives/ Public Information	Ongoing	In progress	CEC (Placemaking and Mobility)	CEC, Scottish Government, Transport Scotland	Unfunded	<£10K per annum	Not quantifiable in terms of one day awareness raising	Consider sister campaign Clean Air Night 2024.	
	3.2 Work with Council education officers and schools, to increase air quality awareness & make improvements across the school community	Promoting Travel Alternatives/ Public Information	Ongoing	In progress	CEC (Placemaking and Mobility), and SEPA	CEC, Scottish Government	Unfunded	<£10K per annum	Not quantifiable in terms of awareness raising	Work with schools on LEZ boundary	
	3.3 Support citizen science and sensor projects looking at air quality to encourage behaviour change towards sustainable travel modes	Promoting Travel Alternatives	Ongoing	Planned	CEC (Placemaking and Mobility), Communities and Partners	CEC, Scottish Government	Applicable to each scheme	Applicable to each scheme	Not quantifiable	Ad-hoc projects	Potential collaborative working with the University of Edinburgh

Theme	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisations	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Action	Key Milestone	Comments
4. Public Transport	4.1 Support improvements to public transport, including enhancing and expanding the bus / mass transit network, bus priority measures, regional interchanges and flexible and smart ticketing, as set out in the CMP Implementation Plan	Promoting Travel Alternatives	Ongoing	In progress	CEC (Placemaking and Mobility)	CEC, Scottish Government, Transport Scotland	Funding secured to enable significant progress	£1 million - £10 million	Not easily quantifiable as part of a wider set of measures, but potential to improve air quality significantly, particularly in conjunction with 4.2.	Review of committed actions in CMP Implementation Plan	Long Term Plan Implemented through CMP
	4.2 Support projects to decarbonise the Edinburgh bus fleet.	Promoting Low Emission Transport	Ongoing	In progress	CEC (Placemaking and Mobility)	CEC, Scottish Government, Transport Scotland, Bus operators	Partially funded	>£10 million to deliver, but initially reviewing how this will be delivered.	Not easily quantifiable as part of a wider set of measures, but potential to improve air quality significantly, particularly in conjunction with 4.1.	Review of EV charging infrastructure and available technologies	Conclude optioneering for delivery of net zero carbon fleet and agree preferred technologies by end of 2025
5. Low Emission Vehicles	5.1 Continue the ECO Stars fleet recognition scheme	Vehicle Fleet Efficiency – Fleet Efficiency and Recognition Schemes	Ongoing annually	In Progress	CEC (Regulatory Services)	Scottish Government	Funded (Annual funding)	<£10K	Not quantifiable	Annual renewal of scheme	Largest scheme in Scotland
	5.2 Update Edinburgh Planning Guidance to incorporate a greater provision of electric vehicle (EV) infrastructure in new developments	Promoting Low Emission Transport-Priority Parking for LEVs	2024	Planning phase	CEC (Planning and Building Standards)	CEC	Funded (staff time)	<£10K	Not quantifiable for the whole policy change	Publication of updated Guidance	

Theme	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisations	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Action	Key Milestone	Comments
6. 2030 Climate Strategy	6.1 Discourage the uptake and use of biomass in commercial settings through Planning Policy to ensure no negative impacts on local air quality and to support the transition to low carbon technologies	Promoting Low Emission Plant -Other Policy	2025	In progress	CEC (Planning and Building Standards)	CEC	Funded (staff time)	<£10K	Not quantifiable for the whole policy change	Publication of updated Guidance	
7. Integrated Policy	7.1 Use UK APAS (Air Pollution Assessment Service) to investigate the impacts of City Plan development on air quality in the long term	Transport Planning and Infrastructure - Other	2028	In progress	CEC (Planning and Building Standards), and SEPA	CEC SEPA	Funded (staff time)	<£10K	Will not specifically reduce emissions or concentrations	Final development of the model at end of 2024	Part of CAFS National Modelling Framework
	7.2 Lobby Scottish Government for an update of licensing laws to tackle concerns such as patio gas heaters and external solid fuel burning in licensed premises and use of petrol / diesel generators in street trading	Promoting Low Emission Plant – Other Policy	2028	Planned	CEC (Regulatory Services)	CEC	Funded (staff time)	<£10K	Emissions reductions will be very localised and hence not quantifiable	Update in licensing laws	
	7.3 Continue to enforce against vehicle idling and expand awareness raising campaigns, including commercial fleet representatives at Events Planning and Oversight Group and consider the Council's own vehicle telematics data	Traffic Management – Anti-Idling Enforcement	Ongoing	In progress	CEC (Network Management and Enforcement and Communications)	CEC	Funded (staff time)	<£10K	Emissions reductions will be very localised and hence not quantifiable	Enforcement mechanism already in place.	
	7.4 Ensure Placemaking strategies and guidance including Place Briefs take account of air quality.	Policy Guidance – Development Control	2024	In progress	CEC (Planning and Building Standards & Placemaking and Mobility)	CEC	Funded (staff time)	<£10K	Not quantifiable	Review of Edinburgh Design Guidance	Action in Cleaner Air for Scotland 2 Strategy

Theme	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisations	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Action	Key Milestone	Comments
8. Domestic Emissions	8.1 Local information campaigns to support the national (CAFS) message, e.g., communications from the Council in winter on energy needs to work in partnership with air quality messaging	Public Information	2028	Planning phase	CEC (Placemaking and Mobility, Communications)	CEC, Scottish Government	Unfunded	Depends on ambition of campaign	Not quantifiable	Scottish Government CAFS Public Engagement Framework published	
	8.2 Work with Scottish Government to review the Clean Air Act and encourage abolition of permitted development rights for flues for woodburning stoves and biomass boilers	Promoting Low Emission Plant – Other Policy	2024	In progress	CEC (Regulatory Services)	CEC	Funded (staff time)	<£10K	Not quantifiable	Respond to formal Scottish Government consultation	Review commenced 2023
	8.3 Review complaints and gather information on solid fuel burning to see whether there are any ‘hotspot’ areas within the city to inform any targeted intervention	Promoting Low Emission Plant – Other Policy	2026	Planning phase	CEC (Regulatory Services and Placemaking and Mobility)	CEC, Scottish Government	Unfunded	<£10K	Information gathering - will not in itself reduce emissions or concentrations	Delivery of a completed study	
	8.4 Develop a Whole House Retrofit (WHR) delivery programme for retrofitting social housing across the city to the highest energy standards, to reduce energy demand and tackle fuel poverty.	Promoting Low Emission Plant – Other Policy	Completion of the works beyond 2030	In Progress	CEC (Housing Strategy & Development)	Housing Revenue Account Capital Programme	Funded	>£10 million investment	Not quantifiable for the whole policy change	Pilots complete 2024/25	

Action 1: Implement the Low Emission Zone and Mitigation Measures and look at opportunities to promote zero emission city centres

A Low Emission Zone (LEZ) is an area where targeted action is taken to improve air quality, by penalising the most polluting vehicles entering the zone. Drivers of those which are non-compliant will have to pay a penalty charge if travelling within the area, which effectively bans non-compliant vehicles.

The Edinburgh LEZ covers most of the city centre with the boundary including the West End, Queen Street and the New Town, Greenside at the top of Leith Walk, Abbeyhill on the east, Pleasance, Meadows and Tollcross (See Figure 1). The LEZ, which includes all types of vehicles (with few exemptions), was implemented on 31st May 2022 and has a 2 year 'grace period' before being enforced from 1 June 2024. Further information about the zone, including exemptions, funding support and consultation updates can be found at: https://www.edinburgh.gov.uk/lez.

Detailed and tailored traffic and air quality data collection exercises between 2016 and 2020 in Scotland's four major cities underpinned the development of the LEZs and created local city models through the National Modelling Framework (NMF).

For Edinburgh, this work showed how the LEZ will have a positive impact on the Central AQMA as well as other parts of the city centre and wider suburban area. NOx emissions from traffic sources within LEZ are expected to reduce by 55% (equivalent to 25-30 tonnes/year), when compared to 2019 levels, which will result in lower pollutant concentrations, however, it was also recognised that this did not necessarily mean that compliance with the air quality objectives would be met at all locations within the LEZ. Other actions are necessary to ensure full compliance and maintenance of the objectives.

The full modelling and assessment work has been considered by the Council and the decision was made in March 2022 to proceed with the LEZ implementation. Delivering the LEZ is the first and most significant action in this Plan as the Council works towards the start of enforcement (1 June 2024). Continued assessment will be undertaken through the LAQM regime of the predicted air quality improvements to support its delivery:

Action 1.1 Implementation of the Low Emission Zone including key actions as follows:

- Road network mitigation including engagement with key stakeholders on proposed changes,
- Signage and lineage notifying drivers at LEZ boundary and approach roads,
- Enforcement infrastructure and systems,
- Communications timed across the period to June 2024 to ensure maximum early compliance, including information about grants available,
- Further develop the LEZ through continued working with the Scottish Government to monitor and evaluate the LEZ by publishing regular updates on performance, and;
- Continue to update the LEZ City Model developed under the National Modelling Framework to reflect changes to the road network and more recent fleet predictions from ANPR data collected.

Through Scottish Government and Transport Scotland grant awards, approximately £2.03million has been committed to development and implementation costs for LEZ. Council staffing and legal costs are not included. An estimated £400k per annum operational and maintenance costs are currently unfunded. Any revenue surplus from penalty fines will cover operational/maintenance costs or be re-invested to support the LEZ scheme's objectives, however this revenue stream is anticipated to be limited due to the deterrent nature of Scotland's LEZ regime.

In addition, to LEZ implementation the Cleaner Air for Scotland 2 strategy suggested local authorities work with Scottish Government, Transport Scotland, citizens and other relevant partners to explore opportunities to promote zero carbon city centres within the existing LEZ structures. An action is also included to this effect:

Action 1.2 Work with Transport Scotland and SEPA to look at opportunities to promote zero-carbon city centres within the existing LEZs governance structure.

Action 2: Support and Implement Strategic Transport Improvements

As set out in the City Mobility Plan, "*investment in the city's travel infrastructure, services and network's management needs to be focussed on making sustainable travel the best choice, not just the right choice"*.

As Scotland's fastest growing city, the transport system in Edinburgh must evolve in a sustainable way, to cater for a rapidly growing population and to support the city becoming net zero by 2030.

Edinburgh's approach to land use planning, through the 20-minute neighbourhood concept means that people will have less distance to travel to meet their daily needs. Many journeys will, however, require changes across travel modes. Interchanges between public transport, active travel and other modes must be well planned and implemented, conveniently placed, seamlessly integrated and easy to understand.

Measures which support strategic transport improvements are currently committed by Council, with detailed staged timescales set out in the CMP Implementation Plan:

- develop and deliver a strategic approach to road space allocation between modes of travel to define the degree of priority to be given to different modes on different streets,
- expand the tram/mass rapid transport network to the north and south of the city as well as to Newhaven,
- review the city's bus network to better align with the Council's strategic priorities including improving accessibility, integration and reducing congestion in the city centre,
- develop public transport interchanges at key locations in the city to enable better connections between services and modes,
- investigate opportunities to expand and create strategically placed transport hubs on the edge of the city where people travelling into Edinburgh can switch to or between public transport and active travel,

- identify opportunities for mobility hubs[5] in existing communities and major new developments that provide a range of sustainable travel choices and amenities including public transport, shared mobility, click and collect and electric vehicle charging, this includes completing a study to define regional Park and Ride,
- Deliver Low Traffic Neighbourhoods (LTNs) in Corstorphine and Leith with an aspiration to deliver LTNs more widely, depending on the outcomes of the initial schemes,
- Use innovative approaches to managing traffic flow, for example incorporating air quality sensors to manage traffic flow in real time in line with the Digital and Smart City Strategy,
- Extend the coverage and operational period of parking controls in the city to manage parking availability for the benefit of local residents and people with mobility difficulties. The supporting information paper on delivering actions for parking will ensure a review of the pricing strategies to help reduce vehicle emissions,
- Review of major junction efficiency across the city, including consideration of air quality. Junction reviews are also being undertaken with respect to any potential impacts from the LEZ to ensure that the network management strategy for the LEZ mitigates congestion and the resulting pollutants,
- In 2019, a traffic modelling study investigated the optimum junction layout for the A8/Drumbrae South junction, which would aim to reduce vehicle emissions on the St John's Road corridor, particularly between the junctions of Clermiston Road and Drumbrae South. This work should be reconsidered in the context of specific actions of this Plan alongside other specific measures which support strategic transport improvements for air quality improvements.

[5] Mobility hubs, whilst serving as places that enable and promote multiple transport modes, can also serve as easily-accessible attractions in their own right – performing a role as 'community hubs'. A mobility hub can, therefore, be both a place for travellers to leave from and be a place to go to; as a shared workspace for instance, or as a parcel drop-off or pick-up point, or as a group of electric vehicle charging points.

The following actions are specific actions to be contained within the Action Plan to support strategic transport improvements:

Action 2.1 In the context of a strategic approach to traffic management that seeks to reduce motorised traffic and encourage public transport and active travel, seek to ensure that traffic management projects achieve positive impacts on air quality especially in locations in breach of, or at risk of breaching, air quality objectives, and include mitigations for negative impacts.

Action 2.2 Complete design work for improvements at St John's Road / Drumbrae Junction as part of the Circulation Plan's A8 Corridor programme and implement improvements.

Action 2.3 Ensure that any new traffic management schemes within the Glasgow Road AQMA achieve improvements in local air quality and reduce exposure to pollutants.

Action 3: Promote Active Travel to Reduce Private Vehicle Use

Achieving change in travel mode choice to active travel can be an effective strategy to manage transport demand and so reduce NOx and PM emissions. Changes in travel mode may come about through incentivisation, public engagement or a regulatory scheme (such as the LEZ which will have an impact on modal choice). Measures to provide information on alternative ways of travelling or encouraging lift sharing can be implemented relatively quickly compared to provision of transport infrastructure or the development and introduction of cleaner vehicles, and in many cases can be a more cost-effective approach.

Edinburgh has a number of strategies and specific projects aimed at promoting active travel which are largely being implemented through the City Mobility Plan. The City Mobility Plan is complemented by the emerging City Plan 2030, which includes key components for encouraging behavioural change to active travel. In addition, the Edinburgh City Centre Transformation Programme also contains a number of measures to provide infrastructure for Active Travel within the city centre.

Measures which the Council is currently undertaking which will promote active travel are as follows, with detailed staged timescales set out in the CMP Implementation Plan :

- Enhance and where necessary expand the walking/ wheeling network to serve and connect key destinations around the city,
- Expand and enhance the citywide network of cycle routes to connect key destinations across the city, including increasing segregated cycle infrastructure on main roads,
- Limit the level of parking in new developments based on current and planned levels of walking/ wheeling, cycling and public transport access and the capacity of surrounding streets, and include requirements for car club and bike hire space,
- Include cycle parking facilities in new developments,
- Expand the School Streets Programme to further primary schools across the city,
- Lead by example by promoting active travel through the Council's Travel Plan,
- Declutter streets by minimising signage, bins and other street furniture to create an uncluttered space for both movement and place functions so they are accessible for all and support street uses and activities,
- Smarter Choices Smarter Places Programme which supports behaviour change to more active and sustainable forms of transport amongst Edinburgh's citizen's and working communities, and;
- Support the CAFS2 national public engagement strategy.

The following actions are specific measures to be contained within the AQAP to help promote active travel:

Action 3.1 Engage in Clean Air Day on an annual basis over the 5-year period of this plan. Depending on the theme of Clean Air Day, this could be linked to other initiatives (such as working with schools, increasing awareness of solid fuel burning, car free streets or Clean Air Night);

Action 3.2 Work with Council education officers and schools, to increase air quality awareness & make improvements across the school community.

Action 3.3 Support citizen science and sensor projects looking at air quality to encourage behaviour change towards sustainable travel modes.

Action 4: Support and Implement Public Transport Improvements

For a city of its size, Edinburgh has a well-regarded public transport network and plans are in place to ensure its continued improvement. By 2030, the Council's vision is for Edinburgh's transport system to be one of the greenest, healthiest and most accessible in northern Europe.

The City Mobility Plan contains a number of policy measures to improve public transport, which take into account the principles agreed in respect to road space allocation, with public transport priority schemes optioneering and detailed business cases to follow.

The timescale for an age limitation and vehicle engine (emission) policy for taxis and private hire vehicles has been extended in light of the COVID-19 pandemic, to alleviate pressure on the sector. As of 1 April 2023, any new licensed taxi (or private hire) vehicle, or a replacement vehicle under an existing licence, is to be Euro 6 engine standard. Significant progress has been made by taxi operators with approximately 75% of the fleet already at least Euro 6. The extension of these dates allows licence holders to retain existing vehicles for a longer period (18 months) than would previously have been allowed, however these timescales complement the LEZ, with grants available from Transport Scotland.

Current measures which are already committed by the Council to support public transport improvements are as follows, with detailed staged timescales set out in the CMP Implementation Plan:

- Enhance and expand the bus/ mass rapid transit network,
- Expand and enforce bus priority measures to improve journey time reliability and operational efficiency within the city and wider region,
- Expand existing and create new reginal interchanges, and
- Ensure ticketing is integrated across public transport operators and smart, flexible tickets can be purchased via contactless payment.

The following actions are specific measures to be contained within this AQAP to support public transport improvements:

Action 4.1 Support improvements to public transport, including enhancing and expanding the bus / mass transit network, bus priority measures, regional interchanges and flexible and smart ticketing, as set out in the CMP Implementation Plan.

Action 4.2 Support projects to decarbonise the Edinburgh bus fleet. This may include a more strategic view on future infrastructure and routing, retrofitting existing buses as an emerging technology and investigating finance models. It may also include wider collaboration with other key service operators in the city, such as shared electric charging infrastructure, to support holistic and spatially efficient solutions.

Action 5: Support the Use of Low Emission Vehicles

The primary objective of promoting a switch to low emission vehicles is the reduction of carbon and local pollutant emissions from transport. However, it does not have additional benefits such as congestion reduction, or increased levels of physical activity that are generated by measures to encourage active travel modes. Provision of suitable infrastructure to support low emission vehicles is critical to their introduction. For commercial vehicle operators, the financial case for investing in electric vehicles is strongly dependent on ensuring high vehicle usage.

ECO Stars is a free fleet recognition scheme that encourages commercial and public operators to run their vehicle fleets more efficiently by helping them to reduce fuel consumption, improve efficiency and reduce emissions. ECO Stars is operated on behalf of the Council by TRL and is the largest ECO Stars scheme in the UK, with 312 operators covering more than 10,000 vehicles.

The Council is committed to leading by example through membership of ECO Stars and the acquisition of lower emission vehicles for its own fleet. The proportion of the Council's entire fleet being Euro 6/VI and above, continues to increase from 51% in 2020 to 80% in 2023. The number of electric vehicles significantly increased with all new cars now electric. These improvements will continue, with the impact of the LEZ and the restrictions that this will place on some fleet units, being assessed. The careful planning of key replacement vehicles will mitigate the effect on operations. Steps have also been taken to reduce the total number of vehicles in the fleet overall, through a process of rationalisation.

In 2017, the Council approved Edinburgh's first Electric Vehicle (EV) Action Plan, with the key purpose of developing a strategic and co-ordinated approach to charging hubs (in some cases at Park and Ride sites). This was to encourage the uptake of EVs, while reducing carbon emissions, improving air quality and unlocking wider economic benefits. More recently, the Council approved a Business Case for the installation of on-street EV charging infrastructure and developed a detailed project plan, to strengthen the existing network. £2.2m funding was awarded from Transport Scotland through the Switched-on Towns and Cities Fund for installing EV on street chargers. For new development, the current requirement is that one of every six spaces should include a fully connected and ready to use electric vehicle charging point, in developments where ten or more car parking spaces are proposed.

Current measures being undertaken by the Council to support low emission vehicles are:

- Encourage the switch to cleaner vehicles by supporting the growth of the EV infrastructure, including the development of a citywide charging network, and ensuring that mobility hubs include provision for EV charging where appropriate,
- Monitor progress in other low and zero emission technologies (for example hydrogen) for different vehicle types,
- Reduce emissions from the Council fleet. This is being undertaken as part of the Council's Emission Reduction Plan, where the approach will be to reduce vehicle miles travelled thanks to route optimisation strategies, to prioritise electrification for cars and light vans, begin the roll out of low-carbon heavy vehicle fleet (with new electric refuse collection vehicles purchased in 2023), and partner with Scottish Government and Scottish Enterprise to pilot innovative low-carbon alternatives to heavy fleet,
- Work towards 'EV only' for business travel by taxi,
- Further charging infrastructure in residential areas is proposed, aimed at long stay/overnight charging in areas of the city where residents lack off-street parking,
- Support car clubs to expand, through the planning system as well as by provision of car club spaces across the city,

- Over 70 on-street car club bays are to receive electric vehicle chargers for exclusive use by car club operators, to support their transition to a lower emission fleet whilst improving the shared mobility offering in the city,
- Continue working with Scottish Futures Trust and Transport Scotland to develop a business case focused on partnering with the private sector to help fund and deliver EV charging infrastructure up to and beyond 2030,
- Work with third sector partners to pilot the replacement of business journeys by car with e-cargo bikes and roll-out e-cargo bike training to target staff groups (in line with the City Emissions Reduction Plan),
- Expand the implementation of logistics hubs to provide 'last mile' support for large-sized deliveries and dispatch items made by larger delivery vehicles. In some cases, these may combine with mobility hubs,
- Continue to investigate further opportunities for projects which involve innovative solutions for deliveries,
- Supporting public sector transition to electric vehicles by Identifying opportunities to align to investment in EV infrastructure for public service and blue light fleet at strategic locations across the city, which also delivers 'down-time' availability for citizens and businesses, where possible, and;
- Delivering electric vehicle infrastructure by developing electricity grid infrastructure and capacity to respond to increased demand from growth in EV use; and developing pilot proposals for blended finance public-use EV charging hubs in locations which align with the City Mobility Plan's aims of increasing sustainable travel and avoid adding to city-centre congestion.

The following are specific actions to aid transition to low emission vehicles.

Action 5.1 Continue the ECO Stars fleet recognition scheme

Action 5.2 Update Edinburgh Planning Guidance to incorporate a greater provision of electric vehicle (EV) infrastructure in new developments.

Action 6: Support Actions in the Council's 2030 Climate Strategy

There is a link between emissions of greenhouse gases and poor air quality. The co-emission of greenhouse gases and short-lived air pollution is well established in

some sectors, including fossil fuel electricity production, industrial manufacturing, space heating, transportation and agriculture[6]. National and local commitments to a net zero greenhouse gas budget create major opportunities for delivering additional economic and environmental co-benefits including an improvement in ambient air quality, and vice versa.

For local air pollutants, in contrast to greenhouse gas emissions, it matters if emissions shift closer to areas of population (even if total national emissions decrease). For example, local air pollution from district heating biomass boilers can have disproportionate impacts on people close by compared with large power generation facilities remotely located, and with tall chimneys.

The 2030 Climate Strategy sets out a series of strategic actions across a number of priority areas and to support the delivery of the strategy, an implementation plan has been developed setting out deliverables, milestones, timescales, resources, and an approach to measuring outcomes and impact. It is anticipated that the implementation plan will evolve over the lifespan of the 2030 Climate Strategy.

This AQAP fully supports measures set out in the 2030 Climate Strategy, which include the following priority areas:

- Accelerating energy efficiency in homes and buildings,
- Enabling the development of a citywide programme of heat and energy generation and distribution infrastructure,
- Accelerating the decarbonisation of public transport,
- Renewing the focus on climate resilience and accelerating adaptation of the city,
- Supporting citizen empowerment, behaviour change and community activism, and;
- Supporting business transition and the green economy.

[6] Air Quality Expert Group (2020) Impacts of Net Zero Pathways on future Air Quality in the UK. Available at: https://uk-air.defra.gov.uk/assets/documents/reports/cat09/2006240802_Impacts_of_Net_Zero_pathways_on_future_air_quality_in_the_UK.pdf

In particular, supporting behaviour change, actions around accelerating energy efficiency in homes and buildings, developing heat and energy generation and reducing the need for fossil or solid fuels, as well as supporting business transition, should also reduce emissions of local pollutants.

The LEZ has a secondary objective to contribute towards net zero greenhouse gases target which will predominantly occur as a result of a shift to sustainable travel modes, rather than from fleet compliance. This is supported by CAFS2 which contains an action to look at opportunities for promoting zero carbon city centres within the LEZ governance structure.

In addition, the following new specific action is included in the AQAP in relation to the Climate Strategy:

> ***Action 6.1*** Discourage the uptake and use of biomass in commercial settings through Planning Policy in order to ensure no negative impacts on local air quality and to support the transition to low carbon technologies.

Action 7: Integrated Policies and Guidance to Support Better Air Quality

Integrated policies and guidance, including a coherent message to residents and visitors to Edinburgh, is essential to support the aims of this AQAP. This is also a key theme in CAFS2. There are a number of policies already in place which will help support air quality, which have been outlined in previous sections of the Plan. Most of these policies cannot be quantified in terms of the impact on pollutant concentrations at specific locations, but they will lead to an overall reduction in emissions across Edinburgh, which in turn will reduce concentrations.

CAFS2 request local authorities, with support from the Scottish Government to assess how effectively air quality is embedded in plans, policies, City Deals and other initiatives, and more generally in cross departmental working, identifying and addressing evidence, skills, awareness and operational gaps. An action is recommended to this effect.

The appropriate regulatory framework is in place to guide new and existing developments in the city to minimise emissions, for example by reducing travel demand, bringing services closer to people and opening up possibilities for increasing cycling and walking. The emerging City Plan 2030 sets out the strategy for

proposals and policies to shape development and inform planning decisions in the city over the next 10 years and beyond. Air quality is embedded within the City Plan within 'Making Edinburgh a sustainable, active and connected city'. The City Plan 2030 aims to reduce reliance on the car (incorporating a target to reduce car kilometres travelled by 30%) and ensure that Edinburgh moves towards its climate change targets, whilst delivering new homes, particularly to the west of the city.

The aim of Action 7 overall is to ensure that air quality is considered fully and consistently within the planning process, both within policy, guidance and development management. Specifically, that developers know what is required of them, and that mitigation, proportionate to the impacts of the development is routinely implemented. This will be undertaken by reviewing the Edinburgh Design Guidance, to ensure that it fully covers the air quality considerations of new developments. In addition, wider planning processes will also consider air quality, such as the City Mobility Plan, Edinburgh City Centre Transformation Programme and the 2030 Climate Strategy (Action 6).

The National Modelling Framework, developed through the extensive Low Emission Zone development work, ultimately provides a two-tiered standardised approach to modelling air quality – locally and at regional levels - using a nationally consistent methodology. The local, city models informed the LEZ design decision making, whilst the regional model will offer an air quality assessment-based tool within and across neighbouring local authority areas associated with large-scale planned developments. SEPA are leading on this work, which may entail the use of the UK APAS project[7] modelling in relation to human health effects. As a later work package, discussions will be undertaken with the Scottish Planning Group to integrate this into the Scottish planning process.

[7] The UK APAS project will develop an online tool to support UK risk assessment of air pollution effects on ecosystems, statutory reporting requirements and also the potential to support the issue of permissions for individual plans or projects (for example, Environmental Permits and planning permission). https://jncc.gov.uk/our-work/uk-aerius/

Use of construction Non-Road Mobile Machinery (NRMM)[8] is controlled locally through the planning process, where conditions and/or informatives are routinely applied to individual planning consents to minimise NRMM emissions during the construction phase of development. Further action will be supported through the CAFS2 process which commits to providing guidance based on existing industry-led guidelines such as the Supply Chain Sustainability School and the London NRMM guidelines. Guidance would focus on construction projects in AQMAs, cover construction NRMM with a net power rating of between 37kW and 560kW and seek to progressively tighten over time using the NRMM engine emission stages.

Wider collaboration will also continue with transport professionals (Council transport planners and Transport Scotland), planners, climate strategy colleagues and with NHS Lothian in order to identify future policy areas which will require consideration.

The following are specific actions to be contained within the Action Plan to support policy integration:

> ***Action 7.1*** Use UK APAS (Air Pollution Assessment Service) to investigate the impacts of City Plan development on air quality in the long term. SEPA is engaged with the UK Government and Devolved Administrations to develop the APAS in relation to modelling of human health effects (the project is currently looking at ecological receptors),
>
> ***Action 7.2*** Lobby Scottish Government for an update of licensing laws to tackle concerns such as patio gas heaters and external solid fuel burning in licensed premises and use of petrol / diesel generators in street trading,

[8] NRMM includes mobile machines, and transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads, such as that on construction sites, but also generators and other machinery NRMM does not utilise the Euro emission standards as adopted by vehicles. Rather, the UK Government introduced new legislation via the Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018, where the most recent NRMM stage is Stage V. However, not all NRMM machinery will comply with the Stage V level as they were manufactured before the 2018 Regulations were established

Action 7.3 Continue to enforce against vehicle idling and expand awareness raising campaigns, including commercial fleet representatives at Events Planning and Oversight Group and consider the Council's own vehicle telematics data, and;

Action 7.4 Ensure Placemaking strategies and guidance including Place Briefs take account of air quality.

Action 8: Control Domestic Emissions

Open fires and wood-burning stoves have risen in popularity over recent years. They are now an additional form of heating for many households in both urban and rural areas. This increase in burning solid fuels in our homes is having an impact on our air quality and now makes up the single largest contributor to UK wide Particulate Matter emissions at 38%[9]. This compares with industrial combustion (16%) and road transport (12%). What people burn and the appliance they use will have a significant impact on emissions. A report by King's College London[10], measuring local concentrations, found that wood burning accounts for up to 31% of the urban derived $PM_{2.5}$ in London.

The Scottish Government have commissioned research, to provide the context for Scotland, focusing on urban air pollution issues, particularly domestic combustion and its distribution, its effects on particulate matter and the consequences for human health. Issues around solid fuel burning in urban areas like Edinburgh will be very different to rural areas of Scotland. Once this research is available, specific action(s) will be explored and an update to this Action Plan made for consideration if necessary. See Appendix B.

Smoke Control Area Orders cover the entire Edinburgh Administrative Area and significant improvements in air quality have been achieved since their introduction due to use of natural gas in the domestic and commercial sectors. However, within

[9] Clean Air Strategy 2019 https://www.gov.uk/government/publications/clean-air-strategy-2019

[10] Font, Fuller et al, 'Airborne particles from wood-burning in UK cities' (2017), https://uk-air.defra.gov.uk/assets/documents/reports/cat05/1801301017_KCL_WoodBurningReport_2017_FINAL.pdf

the Council administration area, there are an increasing number of complaints about domestic burning. The recent trend to install wood burning stoves in urban areas as a secondary or amenity heating source is evident.

There needs to be careful messaging around the reduction in solid fuel burning, especially in the urban area and the need to 'burn better' (e.g. by considering burning less, using a more efficient means/applicance, using cleaner fuels, maintenance etc); which may appear as an endorsement of solid fuel burning. A longer-term shift towards low carbon renewable sources of heat and power, as being implemented through the 2030 Climate Strategy will reduce the overall emissions of this sector and provide benefits from both a climate change and air quality perspective.

Nationally, CAFS2 provides a number of actions around solid fuel burning, including encouraging the uptake of Ecodesign stoves, working with business and industry to support educational schemes (such as Woodsure and Ready to Burn), taking forward potential measures to control the supply of the most polluting domestic fuels – including a ban on house coal, and restricting the sulphur content of smokeless fuels to 2% and prohibiting the sale of wet wood. In developing programmes to support households and businesses in transitioning to low-carbon heating solutions, consideration will be given to the needs of those affected by controls on the supply of the most polluting domestic fuels. At a policy level, the Scottish Government will consider what changes are needed to current permitted development rights for flues for woodburning stoves and consider revision of the Clean Air Act.

The Council will support work being undertaken by the Scottish Government in reducing emissions from this source, and where necessary undertake the following actions:

> ***Action 8.1*** Local information campaigns to support the national message – for example communications from the Council in winter on energy needs to work in partnership with air quality messaging. Direct campaigns on Solid fuel burning need to balance messages around reducing burning, verses 'burning better',
>
> ***Action 8.2*** Work with Scottish Government to review the Clean Air Act and encourage abolition of permitted development rights for flues for woodburning stoves and biomass boilers, and;

Action 8.3 Review complaints and gather information on solid fuel burning to see whether there are any ‘hotspot’ areas within the city and inform any targeted interventions.

Action 8.4 Develop a Whole House Retrofit (WHR) delivery programme for retrofitting social housing across the city to the highest energy standards, to reduce energy demand and tackle fuel poverty.

Appendix A: Response to Consultation

Consultation on the Air Quality Action Plan (AQAP) was extensive and wide ranging, considering the detailed consultation process for the CMP and the statutory elements for the AQAP consultation itself.

A citywide consultation seeking views on five draft action plans (Active Travel, Public Transport, Road Safety, Parking, and Air Quality) and the emerging Our Future Streets (Circulation Plan) was undertaken over a 12-week period from 17 April until 9 July 2023.

Consultation activities were structured predominantly around stakeholder discussions including in-person workshops, market research, an online survey, public drop-in events, and focus groups capturing seldom heard and underrepresented groups.

The consultation gained further understanding of the some of the city's biggest priorities and difficult decisions needed to deliver committed targets, City Mobility Plan (CMP) objectives and ways in which we can further enhance related programmes such as Edinburgh's City Centre Transformation. Key targets include reducing car kilometres by 30% by 2030, reaching net zero by 2030, and achieving Vision Zero by 2050.

Support for the Air Quality Action Plan

The market research, which reflects the demographics of Edinburgh, indicated majority support for all of the actions specific to air quality and those which were designed to reduce emissions in the CMP. Within the online survey, although support for some of the measures was less than 50%, there was overall support for a transition to a zero-carbon bus fleet (65% support), electric vehicle charging infrastructure and discouraging biomass burning in commercial settings. Support for the transition to a zero-carbon bus fleet was also apparent in the Focus Groups.

The statutory consultees were also in support of the AQAP, some providing detailed comments on the drafting of the document (in particular to reduce the amount of information provided), with neighbouring authorities responding regarding actions which may impact on their areas, and the commitment to work collaboratively. In particular, perceived positive and negative effects of the Low Emission Zone (LEZ) on their areas were identified.

The Air Quality specific workshop with stakeholders provided detailed observations and suggestions around domestic solid fuel burning, integration of policy areas and strategic transport, which included public awareness campaigns, lobbying Scottish Government and working with partners across Edinburgh to deliver the actions discussed including the NHS and the University of Edinburgh.

The Focus Group participants supported the reduction of emissions but highlighted the equity issues of the LEZ (i.e., those experiencing poverty cannot upgrade vehicles to be compliant with the LEZ); better infrastructure for electric vehicles was supported.

A large number of air quality specific comments were also provided within written submissions as part of the wider CMP process from stakeholders such as Cycling Scotland, Sustrans, Edinburgh Bus User Group, Enterprise Holdings, University of Edinburgh, Homes for Scotland, residents groups and NHS Lothian. There was support for reducing emissions within Edinburgh, as well as for accelerating energy efficiency measures within homes. NHS Lothian commented that there are still health effects even where pollutant concentrations are below air quality objectives, which is supported by the more strategic actions within the AQAP (and also reflects Scottish Air Quality Policy). The University of Edinburgh offered support for the implementation of actions to raise public awareness.

Response to the consultation

In response to the consultation, we have ensured that the actions which have support have remained in the AQAP, and where there has been particular public support, these actions have increased in prominence and priority, including providing a more detailed implementation timescale. Concerns about the LEZ are reflected within the AQAP and in response to the consultation more signposting to available grants will be undertaken. Concerns about impacts of the LEZ outside of the zone will be monitored as part of the monitoring and evaluation of the scheme.

Following the Air Quality specific workshop there have been some changes to the actions, for example, it was suggested that rather than holding a workshop to increase collaborative working across the Council, the Steering Group should continue, and assist with the governance of the AQAP. We have widened the Steering Group out to further external partners, in order to ensure that actions are

delivered within the timescales in the plan. The Transport and Environment committee also agreed that Council should work with organisations like the British Heart Foundation and Asthma and Lung UK to ensure air quality in Edinburgh continues to improve beyond the minimum standard set by the Scottish Government.

Whilst amending the AQAP, we have continued collaborative working across the Council, and with external stakeholders to ensure that the actions are deliverable. For example, meetings have been held with colleagues in Education and Planning, those working with the travelling community, SEPA, as well as more formal collaborative working through a Steering Group meeting, which already included some external partner organisations.

Other changes following continued collaborative working have included amalgamating draft Actions 2.1 and 2.4 (Action 2.1 is ensuring that air quality assessments are undertaken for traffic management projects, Action 2.4 is about making use of the National Modelling Framework (NMF) model to undertake such assessments), with 2.4 being a mechanism by which 2.1 can be implemented. Draft Action 4.1 (To incorporate air quality considerations within the Public Transport Action Plan), has also been removed, as the action is no longer relevant because of the integration to a streamlined CMP implementation plan and therefore implicit consideration of air quality. In addition, draft Action 8.4 (delivery of net zero community pilots) has been removed, because no funding source is currently relevant, and it is unclear how this action would be delivered in the timescale of the AQAP.

SEPA provided detailed feedback, and in response to this, and an updated Action Plan template issued by Scottish Government, changes to the structure of the document have been made, in particular a streamlining of the information contained within it, to focus more on the actions themselves. This theme of streamlining has also been taken through to the CMP, to reinforce the integrated approach needed to deliver place-based approaches. Supporting information papers on delivering actions for public transport, active travel, parking and road safety, with the CMP has been developed into an overarching Implementation Plan. This will reduce duplication across the plans, and simplified material for stakeholders. The updated AQAP also contains more detailed information on implementation timescales, where available, in line with the Action Plan template and integrating with the CMP Implementation Plan.

Related outcomes from the wider CMP consultation

Whilst the proposal to review on-street parking charges based on vehicle emissions to help reduce harmful emissions from transport was not considered among the highest priorities, consideration will continue to be given to this to support the Council in improving air quality to further incentivise the transition to sustainable mobility.

Proposals to provide public electric vehicle (EV) charging hubs to help reduce harmful emissions from transport received majority support. The Council will continue to work with EV operators to identify a strategic approach to providing charging infrastructure in the city that supports the forecast growth in EV numbers, whilst managing the level of private vehicle use. This will also ensure that we do not subsidise the charging of EVs using public funds, and that pricing is agile enough to reflect market price fluctuations for electricity. A new delivery model will be developed based on assessment of areas of the city for charger provision to be provided directly by EV operators or the Council. The key target groups will be EV drivers, but also car clubs with electric fleet vehicles.

General support was given to expanding the areas served by Car Club to help reduce harmful emissions from transport. This action is aimed at maximising the strategic potential of car club operations in the city to support rather than compete with other sustainable modes of travel and will continue to be a key element of the Council's strategy to support air quality improvements and support more sustainable travel.

Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B.1 – Action Plan Measures Not Pursued and the Reasons for that Decision.

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Domestic Emissions Solid Fuel Burning	Review and action relevant outcomes of the national study on domestic solid fuel burning.	Once the research becomes available the Council will review the findings and take relevant action on outcomes, through working with Scottish Government under the Cleaner Air for Scotland Strategy 2. This process will be picked up in the Edinburgh Air Quality Annual Progress Reports for the city, which monitor the actions in this Plan.

Appendix C: Policy Context

Scotland Policy Context

National Transport Strategy

Transport Scotland published the National Transport Strategy in February 2020. The document identifies four priorities which form the basis upon which decisions will be made and policies evaluated with regards to transportation in Scotland. Two of these priorities are particularly relevant to air quality; 'Takes Climate Action' and 'Improves our Health and Wellbeing'. The Strategy states:

> *"As well as causing adverse impacts on climate change, our transport system has negative impacts on our air quality. Transport generates just over one-sixth of Scotland's total particulate matter (PM_{10}) and over one-third of the total emissions of nitrogen oxides (NOx). The majority of these emissions are caused by road transport."(p22)*

Regarding the 'Takes Climate Action' Priority, the Strategy sets out the following policy: "*Reduce emissions generated by the transport system to improve air quality*". The Strategy elaborates:

> *"More people wanting to access our city centres, often by private car, is impacting on air quality, and subsequently on people's health. While Scotland's four largest cities are introducing low emission zones, which through the restrictions on the most polluting vehicles will ultimately help improve air quality, more will need to be done. The Transport (Scotland) Act 2019 will enable local authorities to introduce schemes under which a charge may be levied for employers providing workplace parking places." (p49)*

Regarding the 'Improves our Health and Wellbeing' Priority, the Strategy sets out the policy to "*Reduce the negative impacts which transport has on the safety, health and wellbeing of people*". The Strategy states:

> *"People are more likely to walk and cycle where safe and accessible active travel infrastructure is available. By embedding the Sustainable Travel Hierarchy, Scotland's transport system will be designed with sufficient walking*

and cycling options to help us become a healthier, more active and fitter nation and tackle medical problems caused by poor levels of activity. It will also reduce the adverse impact on our air quality and the risks from diseases this causes."(p59)

"Our ongoing work on planning reform will continue to improve links with transport infrastructure, in the long term benefiting air quality and greenhouse gas emissions, and improving health."(p59)

Scottish Planning Context

The Scottish Government published Scotland's fourth National Planning Framework (NPF4) in February 2023. Part 1 of the NPF4 sets out an overarching spatial strategy for Scotland in the future, which includes priorities, spatial principles and action areas. These include the aims that:

"Scotland's future places will be net zero, nature-positive places that are designed to reduce emissions and adapt to the impacts of climate change, whilst protecting, recovering and restoring our environment", and that: "Scotland's future places will have homes and neighbourhoods that are healthier, affordable and vibrant places to live".

Part 2 sets out proposed national developments that support the spatial strategy. Within this, Policy 1: 'Tackling the climate and nature crises' states that:

"When considering all development proposals significant weight will be given to the global climate and nature crises".

Policy 23: 'Health and safety' specifically refers to air quality, stating:

"Development proposals which are likely to have a significant adverse effect on health will not be supported" and "Development proposals that are likely to have significant adverse effects on air quality will not be supported. Development proposals will consider opportunities to improve air quality and reduce exposure to poor air quality. An air quality assessment may be required where the nature of the proposal or the air quality in the location suggest significant effects are likely".

Part 3 sets out policies for the development and use of land which are to be applied in the preparation of local development plans, local place plans and for determining the range of planning consents. Part 4 outlines how the strategy will be delivered.

The Scottish Executive Development Department has also produced 'Planning Advice Note (PAN) 51 (Revised 2006): Planning, Environmental Protection and Regulation'. It supports existing policy on the role of the planning system in relation the environmental protection regimes. The PAN quotes SPP1: "the planning authority should have regard to the impact of a proposal on air…quality, although the regulation of emissions or discharges will fall to be dealt with under other legislation". It then goes on to summarise the statutory responsibilities of the environmental protection bodies, as well as informing these bodies about the planning system, and the need for planning decisions to take account of a much wider range of material considerations and the weight to be accorded to them. This includes the LAQM regime.

Scottish Air Quality Context

Cleaner Air for Scotland has been superseded by Cleaner Air for Scotland 2 (CAFS2), which is a national cross-government strategy that sets out how the Scottish Government and its partner organisations propose to reduce air pollution to protect human health.

CAFS2 is shaped around 10 general themes, which are health, integrated policy, placemaking, data, public engagement and behaviour change, industrial emissions regulation, tackling non-transport emissions source, transport, governance, accountability and delivery, and further progress review.

CAFS2 recognises that air pollution, climate change, quality of the urban environment and mobility are strongly interconnected. From this, it follows that effective policy co-ordination across these broad themes, at both central and local government levels, will deliver co-benefits greater than those possible by considering each in isolation. Key to ensuring that these co-benefits are fully realised will be embedding placemaking principles, with a focus on nature-based solutions across policy areas to guide our way to a cleaner, healthier and more attractive environment.

Local Level Policy

City Mobility Plan

The Council published its City Mobility Plan (CMP) in 2021 which sets out the strategic approach to the sustainable, safe and effective movement of people and goods and a strong commitment to meeting the net zero carbon target by 2030 including through behaviour change, infrastructure provision and network management tools. It confirms a commitment to developing a LEZ scheme along with many other related measures such as electric vehicle charging infrastructure, expansion of Controlled Parking Zones and considering a Workplace Parking Levy, and a 'Pay as you Drive' scheme, if necessary, to tackle congestion and support cleaner air.

The CMP, alongside the adopted Local Development Plan and emerging City Plan 2030, aim to create a city where it is not necessary to own a car in order to get around. Development of the 20-minute neighbourhood concept reinforces the importance of having access to local services catering for daily needs within a 20-minute walk of anyone's front door (in Edinburgh's case, adopting a 10-minute walk there and 10-minute walk back principle).

The CMP contains objectives which this AQAP seeks to address directly or support in tandem with other measures to deliver improvements in Public Transport and Active Travel:

- Primary CMP Objective relevant to this AQAP:
    - Reduce harmful emissions from road transport.
- Secondary CMP Objectives relevant to this AQAP:
    - Increase the proportion of trips people make by active and sustainable travel modes,
    - Improve sustainable travel choices for all travelling into, out of and across the city,
    - Maximise the efficiency of our streets to better move people and goods,
    - Reduce the need to travel and distances travelled, and;

- Reduce vehicular dominance and improve the quality of our streets.

The CMP contains a number of policy measures which are also key to this AQAP including:

- Encouraging changes in behaviour towards the use of sustainable modes of travel through information provision, initiatives and campaigns,
- Requiring the provision of travel plans for major new developments as well as for existing workplaces, schools and other major trip generators,
- Expansion of the tram/ mass rapid transport network,
- Reviewing the city's bus network,
- City interchanges – public transport interchanges at key locations in the city, supported by taxi ranks,
- Bus priority measures,
- Other public transport improvements such as integrated, smart and flexible ticketing, bus and tram shelters,
- Regional interchanges (transport hubs on the edge of the city where people travelling into Edinburgh can switch to or between public transport and active travel),
- Supporting improvements to rail and rail integration,
- Enhance and where necessary expand the walking and wheeling network across the city,
- Expand and enhance the citywide network of cycle routes to connect key destinations across the city,
- Identifying opportunities for Mobility hubs that provide a range of sustainable travel choices and amenities,
- Strategic approach to road space allocation,
- Managing deliveries and servicing – edge of town consolidation and micro distribution centres,
- Encouraging the switch to cleaner vehicles,
- Supporting the transition to zero emission buses, and;
- 20-minute neighbourhoods to reduce the need for longer journeys.

City Plan 2030

Edinburgh's emerging new local development plan, City Plan 2030, sets out the strategy for development, proposals and policies to shape development and inform planning decisions in the city over the next 10 years and beyond. The representation period for the proposed City Plan 2030 concluded in December 2021 and the Council are currently considering the representations received prior to submitting the proposed plan to Scottish Ministers.

By 2030 the vision is for a sustainable city which supports everyone's physical and mental wellbeing, a city where you don't need to own a car to move around, a city which everyone lives in a home they can afford and a city where everyone shares in its economic success.

The City Plan reflects the target to be carbon neutral by 2030 as well as the commitment to build 20,000 affordable and low-cost homes over the next 10 years. The City Plan also reflects the programme to transform the City Centre and implement the City Mobility Plan, which will radically change how residents and visitors move around the city.

Within the current Edinburgh Local Development Plan which was adopted in November 2016, there is one policy that refers to air quality. Policy Env 22 refers to air, water and soil quality and states that:

"*Planning permission will only be granted for development where:*

- *there will be no significant adverse effects for health, the environment and amenity and either*
- *there will be no significant adverse effects on air, water or soil quality (…) or*
- *appropriate mitigation to minimise any adverse effects can be provided."*

2030 Climate Strategy

The vision of the 2030 Climate Strategy is that by 2030 Edinburgh will be a net zero and climate resilient city, with a transformed city centre connected to thriving local neighbourhoods where historic, natural and built environments are protected and valued for their contribution to people's wellbeing.

There are a number of synergies between measures being implemented through the Climate Strategy and those required to improve air quality. These include a reduction in travel (both through people working from home more of the time, or in local hubs reducing the need to travel for work), the city having a network of safe and attractive active travel routes and an integrated world-class sustainable public transport system which is affordable for everyone.

The Climate Strategy includes the vision that most citizens find they no longer need a car, with a network of Electric Vehicle (EV) charging hubs supporting electric commercial vehicles, car clubs and citizens who still need to own a private car, with the city centre a place for walking, cycling and wheeling with excellent public transport accessibility.

In relation to non-transport sources, the vision is that all homes will be well insulated, energy efficient and heated and powered by low-cost, renewable energy with a higher proportion of energy generated locally.

Although there are many co-benefits between the climate strategy and local air quality management, care is needed to ensure measures implemented to deal with greenhouse gas emissions do not inadvertently worsen local air pollution.

Low Emission Zone (LEZ)

In March 2022 the Transport and Environment Committee approved the City Centre Low Emission Zone (LEZ), following legal processes. The LEZ was introduced on 31 May 2022 and will be enforced from 1 June 2024. The ‘grace period’ of 2 years, aims to help individuals and organisations prepare for the scheme. National exemptions will apply for example, disabled persons (including blue badge holders), historic vehicles and emergency vehicles and there may be local time-limited exemptions that are approved by the council, although it is intended that these will be few and far between. Persons driving non-compliant vehicles into the LEZ will have to pay a penalty charge, effectively banning non-compliant vehicles.

The LEZ boundary includes the West End, Queen Street and the New Town, Greenside at the top of Leith Walk, Abbeyhill on the east, Pleasance, Meadows and Tollcross.

City Centre Transformation Programme

The Edinburgh City Centre Transformation (ECCT) Programme is an ambitious plan for a vibrant and people-focused capital city centre which seeks to improve community, economic and cultural life. It outlines a programme to enhance public spaces to better support life in the city, by prioritising movement on foot, by bike and by public transport in central streets while improving access for all.

Changes will include a walkable city centre right at the heart of the World Heritage Site, enabled by a pedestrian priority zone and a network of connected, high-quality, car-free streets, a connected network across the city centre of new segregated and safe cycle routes, enhanced bus priority measures, the creation of public transport interchanges and a reallocation of space in the city centre to reduce the impact of vehicles and free up space for other users. The ECCT is supported by the CMP and the emerging City Plan 2030.

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan
AQC	Air Quality Consultants Ltd
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
APR	Annual Progress Report
BEAR	Bus Emission Abatement Retrofit
CAFS	Cleaner Air for Scotland
CEC	The City of Edinburgh Council
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
ECCT	Edinburgh City Centre Transformation
ESS	Environmental Standards Scotland
EU	European Union
EV	Electric Vehicle
HETAS	Heating Equipment Testing and Approval Scheme
HGV	Heavy Goods Vehicle

LAQM	Local Air Quality Management
LEZ	Low Emission Zone
LPG	Liquid Petroleum Gas
LTN	Low Traffic Neighbourhood
MOVA	Microprocessor Optimised Vehicle Actuation
NLEF	National Low Emission Framework
NMF	National Modelling Framework
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NPF	National Planning Framework
OLEV	Office for Low Emission Vehicles
PAN	Planning Advice Note
PCM	Pollution Climate Mapping
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
SCOOT	Split Cycle Offset Optimisation Technique
SEPA	The Scottish Environment Protection Agency
SG	Scottish Government
SPP	Scottish Planning Policy

TBC	To be confirmed
TEOM	Tapered Element Oscillating Microbalance
TS	Transport Scotland
WHO	World Health Organisation