The City of Edinburgh Council

PM_{10} Air Quality Action Plan

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

June 2026

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1 Executive Summary

This Air Quality Action Plan has been produced as part of the statutory duties required by the Local Air Quality Management framework. It outlines proposed actions to be taken to improve air quality in the Salamander Street Air Quality Management Area (AQMA) between 2025 and 2030, in relation to the local pollutant PM_{10} (Particulate Matter).

Emissions from industry, transport and fugitive sources, including port activities and construction sites, will be addressed as well as considering the future land-uses in the area and the impact of domestic burning.

This action plan is in addition to the Council's January 2024 Air Quality Action Plan which focuses on city wide locations where there are risks of exceedances of the nitrogen dioxide (NO_2) Air Quality Strategy Objectives, predominately arising from road traffic pollution. Other strategic measures were included to reduce Particulate Matter (PM) pollution in general, especially from domestic and commercial power/heating which can contribute to concentrations of both NO_2 and PM.

The Council takes a precautionary principle to reducing air pollution as enshrined in the national air quality strategy - Cleaner Air for Scotland 2. There is scientific consensus that exposure to air pollution is harmful to people's health in terms of premature mortality and morbidity and is associated with adverse health impacts, particularly affecting the most vulnerable in society, children, older people, and those with pre-existing health conditions.

Since the declaration of Salamander Street AQMA the Council and partners, supported by Scottish Government and the Scottish Environment Protection agency (SEPA), have been working collaboratively to improve air quality.

PM_{10} monitoring data (Salamander Street) shows concentrations are generally reducing, however, there remains challenges, with recent data (Tower Street) showing exceedances of the daily mean statutory objective.

Actions for the plan have been developed through effective partnership working and are presented under four themes:

- Industrial
- Roads and Transport
- Development Management
- Information to the Public
- Air Quality Monitoring.

The Council's priorities for the 2026 PM_{10} Air Quality Action Plan (AQAP) are:

- Strengthen relationships and practices between regulators and industry to further improve air quality and include a citizen science air quality monitoring project.
- Set up a forum with the Council, housing developers, landowners, businesses and community groups within and in the vicinity of the AQMA to address the cumulative impact of development on environmental protection matters.
- Continue to deliver sustainable transport interventions in the area which will reduce traffic levels with associated air quality benefits.
- Ensure early work on the City Plan 2040 takes account of the need to improve air quality and review evidence for appropriate Place-based policies and strategies that address the juxtaposition of land-uses in and around the Salamander Street AQMA.
- Promote information on local air pollution and provide advice to the public when pollution is high.

In this AQAP we outline how the Council and partners will act to effectively tackle air quality issues to meet and sustain statutory air quality objectives. Consideration is also given to the change of industry and land uses around the port and the introduction of new housing and sensitive receptors in and around the area.

In accordance with the requirements of Local Air Quality Management Policy Guidance PG(S)(24) the City of Edinburgh Council expects the Salamander Street AQMA to be revoked no later than 2030 and where possible, within the shortest possible time.

Responsibilities and Commitment

This AQAP was prepared by the Transport, Strategy and Partnerships service of the City of Edinburgh Council with the support and agreement of the following officers and other Service Areas:

- Deborah Paton Head of Transport Strategy & Partnerships
- Cliff Hutt Head of Roads & Infrastructure
- David Givan Chief Planning Officer & Head of Building Standards
- Dave Sinclair Interim Head of Network Management & Enforcement
- Andrew Mitchell Head of Regulatory Services
- Murray Black Neighbourhood Environmental Service Operations Manager
- Christine Downie Climate and Nature Strategy Manager
- Elin Williamson Head of Business Growth & Inclusion
- Laura Marshall Equality Diversity and Rights Representative
- Gavin Brown Interim Service Director – Operational Services of Place

Partners including Scottish Government, SEPA, NHS Lothian, Forth Ports, and Forth Green Freeport have also contributed to the production of the AQAP through their involvement in a Steering Group. A statutory consultation was undertaken in Summer/Autumn 2025 and feedback incorporated in the Plan. The Plan was approved by the Council's Transport and Environment Committee prior to submission to the Scottish Government and DEFRA at UK Government.

Progress each year will be reported in the Annual Progress Report (APR) produced by the City of Edinburgh Council, as part of statutory Local Air Quality Management duties.

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2 Introduction

This report outlines the actions that the City of Edinburgh Council and partners propose to deliver between 2026 and 2030 to reduce concentrations and exposure of air pollutants, especially Particulate Matter (PM_{10}) in the Salamander Street Air Quality Management Area (AQMA); thereby positively impacting on the health and quality of life of residents and visitors.

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.

The AQAP will be reviewed every five years, if required and progress on the actions will be reported annually within the Council's Air Quality Annual Progress Report.

The Council will also engage with the Scottish Government in the current review of the Cleaner Air for Scotland 2 Strategy and Local Air Quality Management. Proposals to tighten the air quality standards in-line with the World Health Organisation Guidelines, will be supported in terms of the public health benefits that this will bring.

What is particulate matter?[1]

Particulate Matter (PM) is everything in the air that is not a gas and as such it is made up from a huge variety of chemical compounds and materials, some of which are toxic. Due to the small size of many of the particles that form PM, some of these toxins may enter the bloodstream and be transported around the body, entering the heart, brain and other organs. Therefore, exposure to PM can result in serious impacts on health, especially in vulnerable groups of people such as the young, elderly and those with respiratory problems.

[1] Source: DEFRA, UK Government Particulate matter (PM_{10}/$PM_{2.5}$) - GOV.UK

PM is classified according to size. The UK currently focuses on estimating the fractions of PM emissions where particles are less than 10 micrometres in diameter (PM_{10}) and less than 2.5 micrometres in diameter ($PM_{2.5}$). This approach is based on scientific consensus and longstanding evidence regarding the extent to which different sizes of particles penetrate the respiratory system and are absorbed by the lungs. Particles larger than 10 µm are mainly deposited in the nose or throat, whereas particles smaller than 10 µm pose the greatest risk because they can be drawn deeper into the lung. The strongest evidence for effects on health is associated with fine particles ($PM_{2.5}$). The size of particles and the duration of exposure are key determinants of potential adverse health effects.

Different emission sources can produce different proportions and durations of coarse and fine particulate matter. For example, construction and demolition emit a higher proportion of coarse particles (PM_{10}), while in industrial combustion the majority of PM emissions are fine particles ($PM_{2.5}$).

“Primary” PM is emitted directly as particles (for example, soot or dust) and “secondary” PM is formed in the atmosphere from reactions between other pollutants (for example ammonia or non-methane volatile organic compounds). Both PM and the precursor pollutants that can form it can travel large distances in the atmosphere.

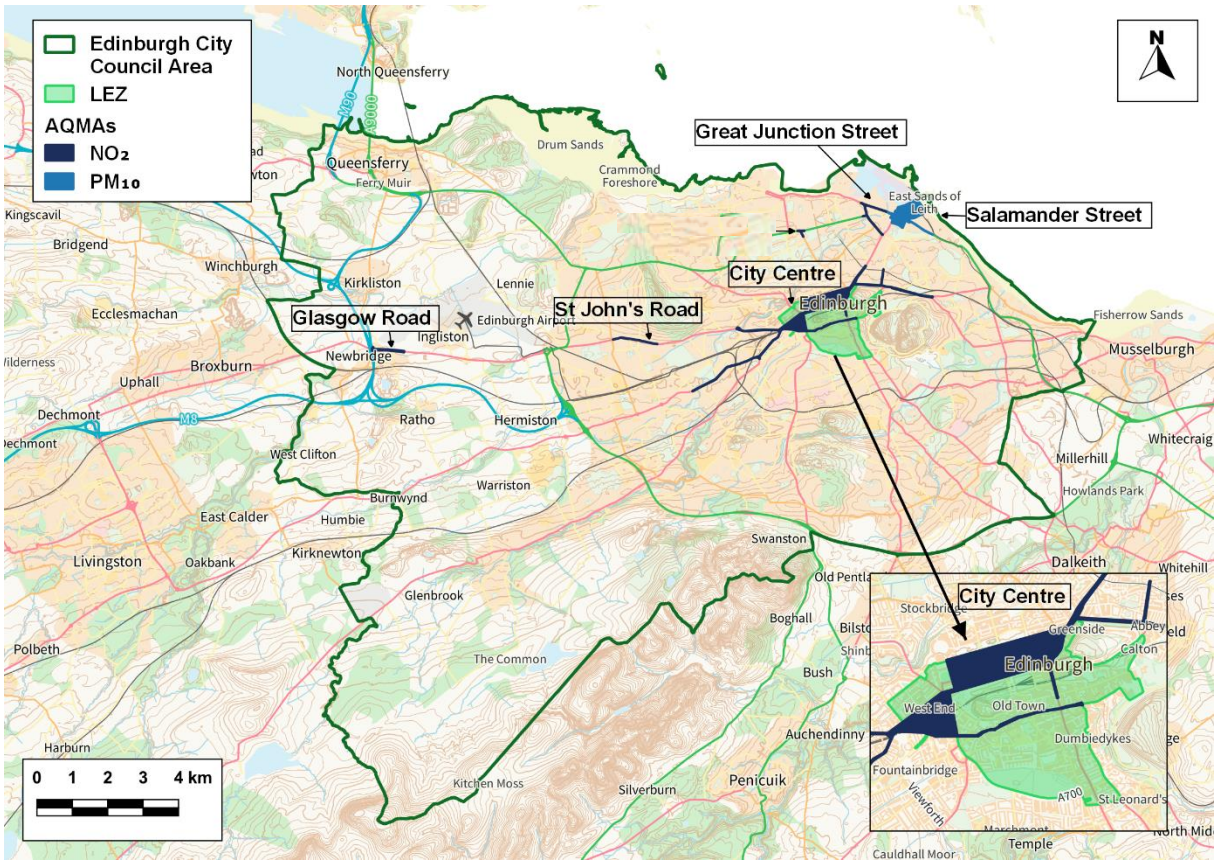
Around half of the PM that people in the UK are exposed to comes from either naturally occurring sources, such as pollen and sea spray, or is transported to the UK from international shipping and other countries. The remaining half of PM comes from human activities in the UK, such as wood burning, various industrial processes and tyre and brake wear from vehicles. As such, it is in the interest of the government and local authorities to identify and reduce all these emissions where possible.

3 Summary of Current Air Quality in the City of Edinburgh Council and Salamander Street Air Quality Management Area

The City of Edinburgh Council has declared five Air Quality Management Areas (AQMAs), four for the pollutant nitrogen dioxide (NO_2) and one for Particulate Matter (PM_{10}) - the Salamander Street AQMA.

Figure 1 shows all the AQMAs within the Council area, as well as the Low Emission Zone (LEZ) boundary in the city centre.

Figure 1 – Edinburgh's AQMAs and Low Emission Zone



The City of Edinburgh Council's 2024 Air Quality Action Plan

The Council recently agreed the 2024 Air Quality Action Plan[2] (AQAP) which focused on the NO_2 AQMAs and locations across the city where there were risks of exceedances of the NO_2 AQS Objectives, predominately arising from road traffic pollution. The LEZ was a significant feature of this AQAP which aimed to reduce NO_2 and PM emissions, however, other strategic measures were also included to help reduce PM pollution, especially from domestic and commercial power/heating (including gas and solid fuel) which can contribute to NO_2, PM_{10} and $PM_{2.5}$ concentrations.

Salamander Street Air Quality Management Area (AQMA)

The Salamander Street AQMA was declared in 2017 following the PM_{10} City Wide Detailed Assessment carried out by the Council[3]. It identified emissions from industry, transport and fugitive sources, including port activities as contributory factors to PM_{10} exceedances.

Currently demolition and construction associated with development in the area is also considered to be a significant source.

In this AQAP we outline how the Council and partners will act to effectively tackle air quality issues to meet and sustain statutory air quality objectives.

PM_{10} Monitoring data

Monitoring of PM was originally undertaken at a roadside-type monitoring site at Salamander Street utilising the TEOM analyser until 2020, prior to a FIDAS instrument being installed. Supplementary monitoring was introduced at an urban industrial-type location on Tower Street in 2019 using a FIDAS analyser.

Monitoring is undertaken in association with government technical guidance (TG22)[4]. In 2023 further guidance was produced for Scottish local authorities, detailing a

[2] https://www.edinburgh.gov.uk/downloads/file/22762/air-quality-action-plan

[3] https://www.edinburgh.gov.uk/downloads/file/22774/detailed-assessment-particles-2016

[4] TG22, DEFRA LAQM-TG22-August-22-v1.0.pdf

correction factor to be applied to FIDAS data[5]. In association with this guidance the Council publishes the corrected and uncorrected data.

The latest Air Quality Annual Progress Report has information on monitored data and analysis up to 2024 and can be accessed on the Council's website: https://www.edinburgh.gov.uk/pollution/local-air-quality-management/1

The data shows that the Annual Mean AQS Objective for PM_{10} is being achieved in the AQMA and the Daily Mean AQS Objective is exceeded, considering the most recently available data (2024). The exceedance is attributed to ongoing housing development sites immediately to the east and south of the Tower Street monitoring station involving demolition, groundworks and construction. A significant increase in the annual mean PM_{10} concentration was also observed in 2024 because of these developments, but it remained below the annual objective.

Tables 1 and 2 shows recent data from the monitoring sites within the AQMA. For comparison, data from monitoring at the urban background site (St Leonards) is also presented.

Table 1 - Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$)

Site ID	Site Name	Site type	Annual Mean PM_{10} Concentrations ($\mu g/m^3$) (Data capture %)					
			2019	2020	2021	2022	2023	2024
ID8	Salamander Street	Roadside	**18.1**	14.8	15.4	14.3	12.7	12.9
			N/A	N/A	17.0	15.7	14.0	14.2
			95%	85%	100%	99%	98%	99%
ED12	Tower Street	Urban Industrial	10.7	8.6	9.9	10.0	9.2	14.4
			11.8	9.5	10.9	11.0	10.1	15.9
			97%	97%	100%	100%	100%	100%
ID7	St. Leonard's	Urban background	10.9	8.1	8.5	9.2	8.6	9.3
			11.3	8.9	9.3	10.1	9.4	10.2
			91%	99%	99%	99%	100%	85%

(Notes for table overleaf)

[5] Scottish Air Quality website Scottish_Government_Guidance_Note_LAQM_Reporting_of_Scottish_PM_data_v0.1.pdf

Notes for Table 1:

Exceedances of the PM_{10} annual mean objective of 18 µg/m^3 are shown in bold.

Data in grey coloured cells is corrected FIDAS data under terms of the LAQM Scottish Guidance Note, May 2023.

N/A – Not Applicable (correction not required).

Table 2 – Daily (24-hour) Mean PM_{10} Monitoring Results

Site ID	Site Name	Site type	Number of PM_{10} 24-Hour Means > 50µg/m^3 (Data capture %)					
			2019	2020	2021	2022	2023	2024
ID8	Salamander Street	Roadside	5 N/A 95%	2 (51.2) N/A 85%	3 6 100%	5 6 99%	0 0 98%	0 0 99%
ED12	Tower Street	Urban Industrial	1 2 97%	0 0 97%	0 0 100%	1 3 100%	2 3 99%	**8** **13** 100%
ID7	St. Leonard's	Urban background	1 N/A 91%	0 0 99%	0 0 99%	1 2 99%	0 0 99%	0 0 85%

Notes for Table 2:

Exceedances of the PM_{10} 24-hour mean objective (50 µg/m^3 not to be exceeded more than seven times per year) are shown in bold.

If the period of valid data is less than 85%, the 98.1st percentile of 24-hour means is provided in brackets.

Data in grey coloured cells is corrected FIDAS data under terms of the LAQM Scottish Guidance Note, May 2023.

N/A – Not Applicable (correction not required).

PM_{10} Trends

Since monitoring commenced at Salamander Street in 2009, annual mean concentrations of PM_{10} have generally reduced. At Tower Street, since monitoring commenced in 2019 concentrations have fluctuated. See Figure 2.

Trend analysis has been carried out using the Excel simple regression statistical program with data for the past five years, which is the recommended minimum number of years for trend analysis. This considers trends since monitoring commenced at Tower Street. The analysis shows there is a downward trend (decreasing concentrations) at Salamander Street and an upward trend (increasing concentrations) at Tower Street. See Figure 3.

Figure 2 - Annual Mean PM_{10} Concentrations (µg/m3) at Salamander Street and Tower Street (since monitoring began)

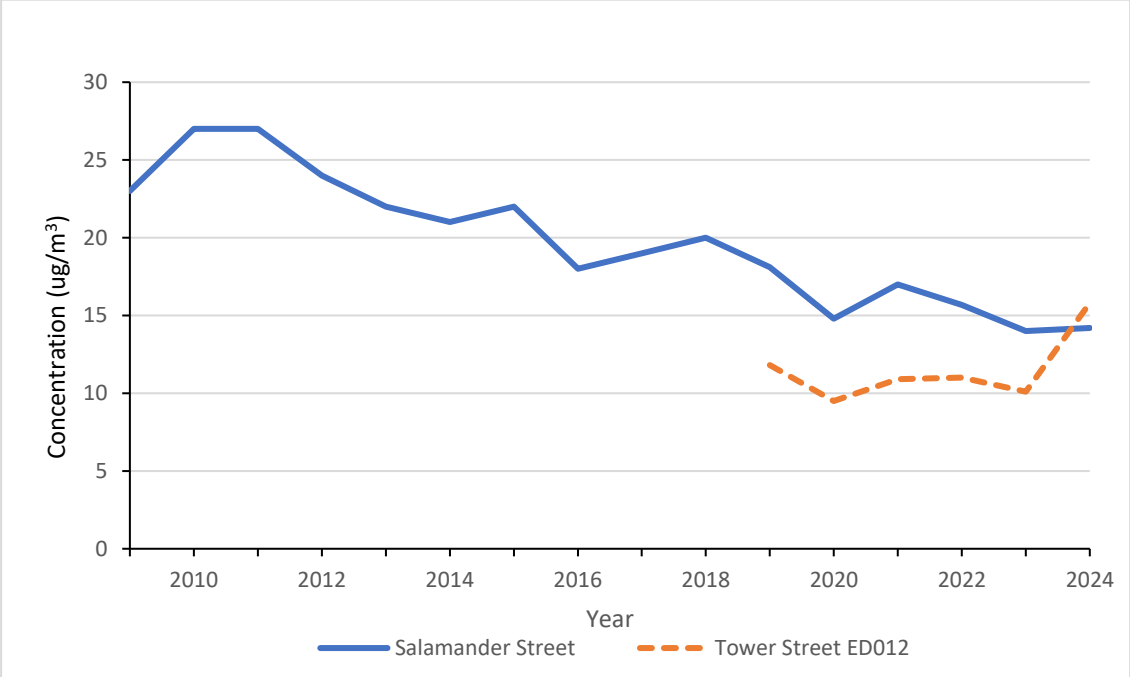
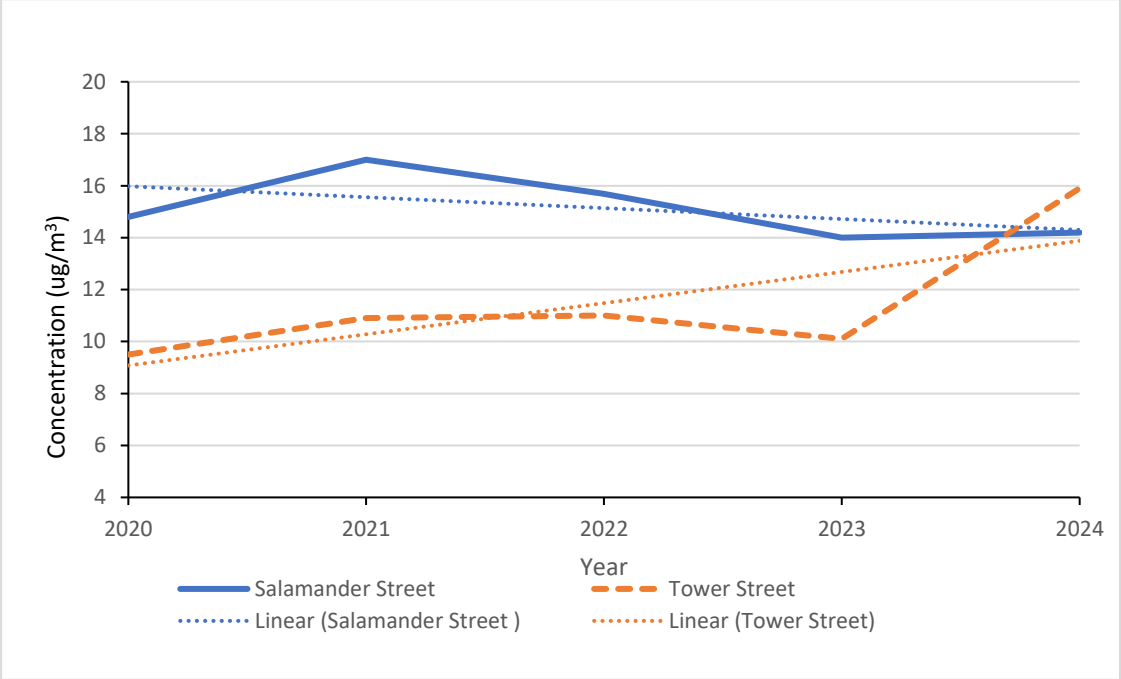


Figure 3 - Trend Analysis of Recent Annual Mean PM_{10} Data at Salamander Street and Tower Street



4 The City of Edinburgh Council's Air Quality Priorities

The Council's priorities and drivers for pursuing actions to improve air quality are based on public health principles.

Air pollution is associated with many adverse health impacts. It is recognised as a contributing factor in the onset of lung and heart disease, as well as cancer, and evidence is growing in respect to links between air pollution and a decline in mental ability and dementia.

Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with pre-existing health conditions. The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[6].

The City of Edinburgh Council is committed to reducing the exposure of people in Edinburgh to poor air quality to improve health.

4.1 Source Apportionment

The AQAP Actions presented in this plan are intended to be targeted towards the predominant sources of PM_{10} emissions within the Salamander Street AQMA.

A source apportionment exercise was carried out by the Council in early 2025 and updated in October 2025 with new Background Maps[7]. Table 3 (percentage source contributions) and Figure 4 show the results of the source apportionment exercise for PM_{10} in the AQMA.

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

[7] Scottish Air Quality Website - 2025 Background Maps based on 2021 (projections from 2021 to 2040) - https://www.scottishairquality.scot/data/mapping/data

Table 3 – Source apportionment for PM_{10} in Salamander Street AQMA based on Scottish Background Maps 2025 (Base year 2021)

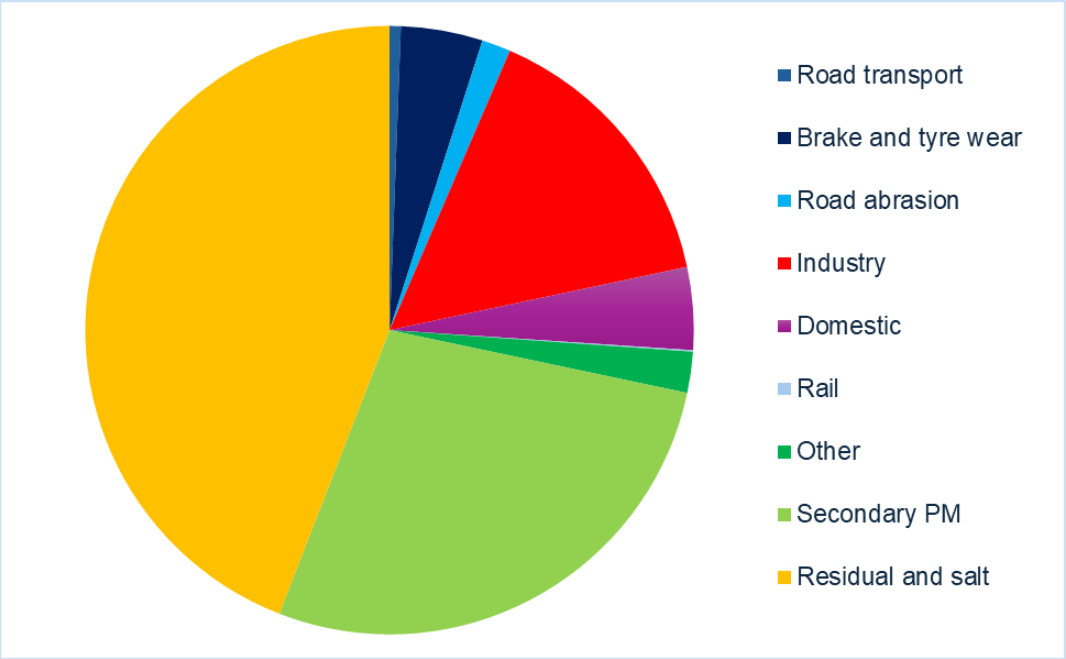
Source sector	Source apportioned PM_{10}	Normalised source apportioned PM_{10} *
Road transport	0.6%	2.1%
Brake and tyre wear	4.4%	15.3%
Road abrasion	1.6%	5.4%
Industry (including point sources)	15.4%	53.6%
Domestic	4.4%	15.5%
Rail	0.1%	0.3%
Other	2.2%	7.7%
Secondary PM	27.9%	-
Residual and salt	44.6%	-

Notes for table: * Background secondary PM and residual & salt sources were removed, and remaining concentrations normalised.

Other sector - includes aircraft, ships, off-road and other emissions.

The residual-and-salt source is the most significant sector for PM_{10} concentrations in Salamander Street AQMA (44.6%), followed by secondary PM (27.9%). As it is very difficult to regulate and mitigate emissions from these sectors, source apportionment for the remaining sectors was separated and normalised. Removing residual-and-salt and secondary PM, industry (including point sources) is by far the greatest local source of PM_{10} in the AQMA (53.6%), with the next greatest contributions from domestic (15.5%), break and tyre wear (15.3%) and road abrasion (5.4%).

Figure 4 – Source apportionment for PM_{10} in Salamander Street AQMA



4.2 Description of Sources

Regulated Industry

The Pollution, Prevention and Control (PPC) permit regime which regulates the environmental impact of industrial activity is enforced by SEPA. PPC processes in and around Leith docks range from bulk handling and batching of cement to treatment of raw materials (flour milling). Permitted mobile processes e.g. crushing of rocks, waste and building materials, can operate at different locations. Waste Management Licenses (WML) are also regulated by SEPA. From 1 November 2025, existing and new activities will transition to being regulated by SEPA under the Environmental Authorisations (Scotland) Regulations 2018 (EASR).

Table 4 and Figure 5 summarise the PPCs and WML in and around the AQMA, historically (surrendered) and currently (live).

Table 4 – Historic and Current SEPA Licensed Sites in/around the Salamander Street AQMA

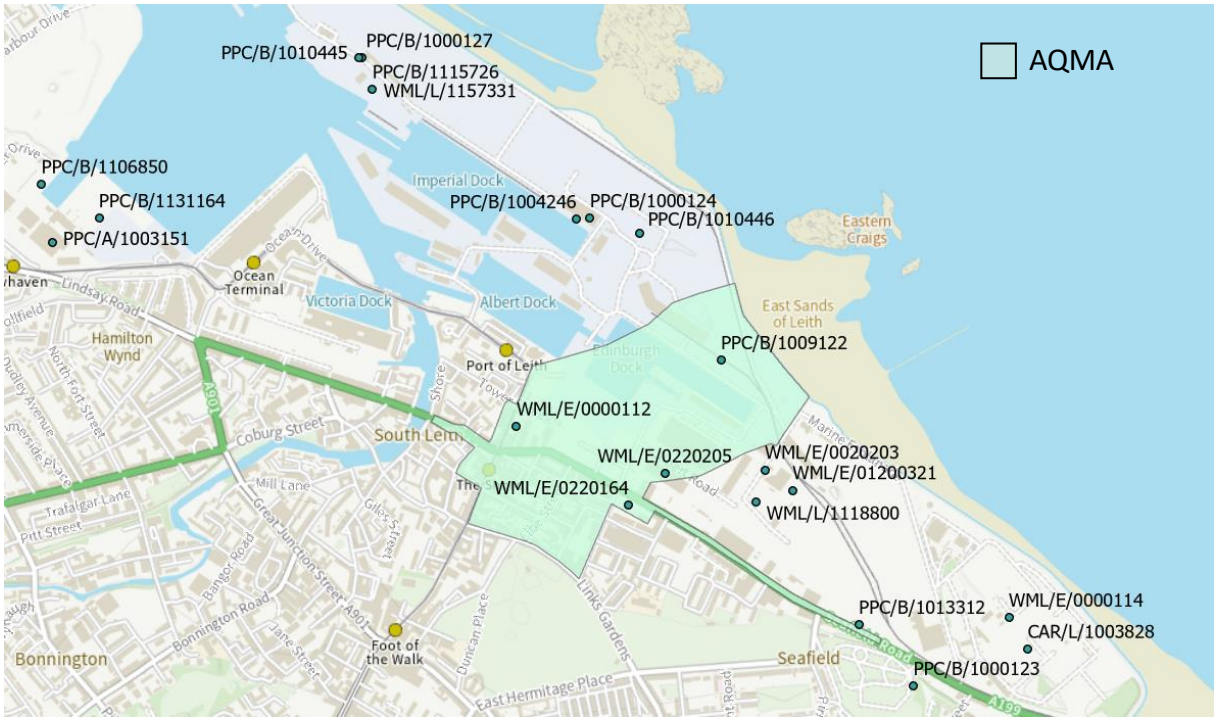
Licence Number	Site	Permit Status	Comments
PPC Sites			
PPC/B/1000123	Seafield Crematorium	Live	Cremation of human remains
PPC/B/1000073	Breedon Trading Limited	Surrendered	Roadstone coating plant
PPC/B/1000124	Breedon Trading Limited	Live	Cement batching plant
PPC/B/1000126	Bredero Shaw	Surrendered	Pipe coating
PPC/B/1000127	LJF Custom Coatings	Live	Mobile plant*
PPC/B/1000161	Lafarge cement	Surrendered	Cement batching
PPC/B/1004246	Forth Ports Plc	Live	Bulk unloading of cement
PPC/B/1004358	Breedon Trading Limited	Surrendered	Concrete batching plant
PPC/B/1009122	Forth Ports coal handling	Live	Permit surrender under consideration
PPC/B/1009123	LJF Custom Coatings	Surrendered	Coating process. Mobile plant
PPC/B/1010445	LJF Custom Coatings	Live	Mobile plant*
PPC/B/1010446	LJF Custom Coatings	Live	Mobile plant*
PPC/B/1010520	Aggregate industries	Surrendered	Cement batching
PPC/B/1013312	Shell Leith	Live	Fuel (petrol) station
PPC/B/1115726	Dales Marine Services Ltd	Live	Coating of surfaces
PPC/B/1131164	Aggregate Industries	Live	Concrete Batching Plant
PPC/A/1003151	ADM milling	Live	Treatment of raw materials, flour milling
PPC/B/1106850	ASDA	Live	Fuel (petrol) station
WML sites			
WML/L/1118800	NWH Group Limited	Live	
WML/E/114	Seafield WWTW	Live	
WML/L/1157331	Dales Marine Services Ltd	Live	

Licence Number	Site	Permit Status	Comments
WML/E/0000112	Peter Thomson Dalton	Live	Site not operating. Permit surrender required.
WML/E/0220164	Dalton Group Limited	Live	
WML/E/0220205	TKC Waste Management Ltd	Live	Site not operating. Permit surrender required.
WML/E/0020203	All Urban Waste Disposal	Live	
WML/E/01200321	NWH construction Services	Live	
CAR/L/1003828	Veolia Water Outsourcing LTD	Live	

Notes for table: Source: SEPA, March 2025

*Mobile plant registered and predominately operational Ellon, Scotland

Figure 5 – SEPA Licensed Sites in/around Salamander Street AQMA



One major cement batching plant that operated on Bath Road has surrendered its PPC permit. However, a new cement batching plant operates adjacent to the Chancelot flour mill. Other PPC permits have been surrendered in recent years.

SEPA have stated that the number of regulated sites continues to decrease and there are currently no concerns regarding performance and emissions from the remaining sites in the vicinity of the AQMA. However, actions to strengthen links

between the Council and SEPA when considering new applications, dealing with complaints (environmental events) and inspections are included in the Action Plan. SEPA is responsible for investigating environmental events where they are related to a regulated site. Where an environmental event resulting in air pollution is associated with an activity not regulated by SEPA this is covered by the Statutory Nuisance provisions of the Environmental Protection Act 1990 and Public Health etc (Scotland) Act 2008 and enforced by the local authority.

Fugitive and Uncontrolled Emissions

Other industry processes and issues falling outside the scope of permitting can contribute to the PM_{10} concentrations in the AQMA and adjacent area.

Fugitive or uncontrolled sources relate to dust emissions, which in turn can lead to elevated PM_{10} concentrations include, but are not limited to[8]:

- Landfill sites;
- Coal and material stockyards;
- Materials handling;
- Major construction works; and
- Waste management sites.

These types of emissions are generally difficult to quantify and source apportion, hence monitoring of air quality can give valuable insight.

Handling and Storage of materials at Port of Leith

On-site activities in the port (and major construction sites) can involve bulk handling of dusty materials. Emissions can arise when materials are off-loaded, handled and then stored and moved within the docks. Materials which pass through the port include grain, animal feed, iron ore, cement and aggregate.

[8] LAQM-TG22-August-22-v1.0.pdf

Wind-blown dust from storage or stockpiles and dusty surfaces or the passage of vehicles over unpaved ground can also create dust and elevated concentrations of PM_{10}.

Further review of these processes and potential to control dust generation form part of this Action Plan.

Construction Sites / Open Ground

Dust and PM_{10} emissions from the construction industry is acknowledged as an important local source. Emissions of dust/PM to air can occur during the preparation of the land (e.g. demolition, land clearing, and earth moving), and during construction. A significant proportion of dust emissions may result from site plant and road vehicles moving over temporary roads and open ground. If mud is allowed to get onto local roads, dust emissions can occur at some distance from the originating site.[9]

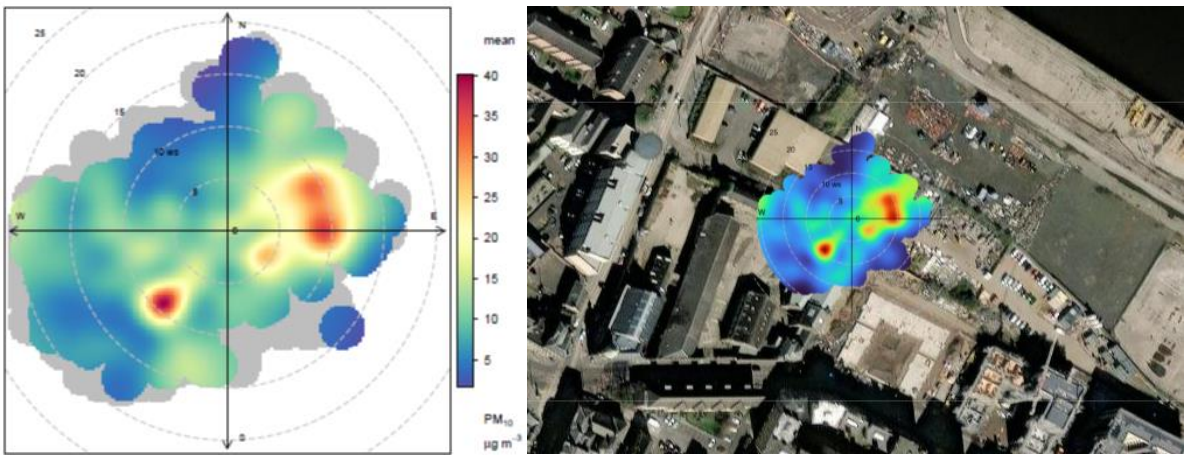
Developers and landowners are therefore required to reduce this local impact. Control measures include reducing deliveries by road, vehicle wheel washing, road sweeping and washing, and the use of dust suppressants would all be relevant in addition to general on-site management, mitigation and good practice.

Assessment of monitoring data has been conducted through R-OpenAir tools[10], with hourly PM_{10} concentrations by measured wind speed and direction, for Tower Street in 2024. Complaints had been received about nearby demolition and construction works. Figure 6 shows the resultant Polar Plot. It is possible to indicate the direction of the demolition works (south-west) and where extensive groundwork and construction were undertaken (east) from the air quality monitoring station. These operations are likely to have resulted in the Daily Mean AQS Objective being exceeded in 2024. Due to the amount of new development proposed in the area, this will be an important source to control.

[9] Institute of Air Quality Management, Construction-Dust-Guidance-Jan-2024.pdf

[10] Scottish Air Quality website https://www.scottishairquality.scot/data/openair

Figure 6 – Polar Plots of 2024 PM_{10} Data at Tower Street – Impact from Construction sites



Domestic

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 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%[11]. This compares with industrial combustion (16%) and road transport (12%).

Smoke Control Area Orders cover the entire Edinburgh Administrative Area and significant improvements in air quality have been achieved since their introduction from 1960 legislation, largely due to the adoption of natural gas in the domestic and commercial sectors. However, within the Council administration area, there are an increasing number of complaints about domestic burning.

The Council's existing 2024 AQAP addresses domestic emissions by highlighting the need for careful messaging about reducing solid fuel burning. The national approach to promoting the need to 'burn better' (e.g. by considering burning less, using a more efficient

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

means/appliance, using cleaner fuels, maintenance etc); may appear as an endorsement of solid fuel burning, which may not be suitable in the urban environment.

The 2024 AQAP also has an action to 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.

A longer-term shift towards low carbon renewable sources of heat and power, as is being implemented through the City's 2030 Climate Strategy[12], will reduce the overall emissions of this sector and provide benefits from both a climate change and air quality perspective. The Council's programme to implement a Whole House Retrofit (WHR) for energy use in social housing across the city will reduce energy demand and also tackle fuel poverty.

The Council is also supporting work being undertaken by the Scottish Government in reducing emissions from this source, especially the review of the Clean Air Act.

Transport

Roads

Whilst legislation has been effective at reducing emissions of PM from the exhausts of internal combustion engines, the non-exhaust emissions (NEE) proportion of road traffic has increased[13]. Data from the UK National Atmospheric Emissions Inventory indicate that particles from brake wear, tyre wear and road surface wear currently constitute 60% and 73% (by mass), respectively, of primary $PM_{2.5}$ and PM_{10} emissions from road transport, and will become more dominant in the future. That is approximately 7.4% and 8.5% of all UK primary $PM_{2.5}$ and PM_{10} emissions, collectively exceeding those from the exhaust of the UK vehicle fleet.

Resuspended road dust is not estimated in the national inventory; however, it constitutes a significant road PM source[14]. Dust can accumulate on road surfaces from natural mineralogy e.g. soils or industrial sources e.g. sand, cement processing,

[12] 2030 Climate Strategy – The City of Edinburgh Council

[13] DEFRA, UK Government and Devolved Administrations 1907101151_20190709_Non_Exhaust_Emissions_typeset_Final.pdf

[14] DEFRA, UK Government and Devolved Administrations 1907101151_20190709_Non_Exhaust_Emissions_typeset_Final.pdf

and it is often heavily contaminated with brake and tyre wear. Some of this material is in the PM_{10} size range when depositing to the road surface and the action of tyres on surface dusts may also cause some grinding leading to the creation of smaller particles. Such particles are easily suspended from the road surface, both by shear forces at the tyre-road interface and by atmospheric turbulence in the wake of the vehicle. Elevated wind speeds also contribute to the resuspension of surface dust.

The most effective mitigation strategies for NEE are to reduce the overall volume of traffic, lower the speed where traffic is free-flowing (e.g. trunk roads and motorways), and promote driving behaviour that reduces braking and higher-speed cornering.

Resuspension of particles from the road surface can be lowered by reducing the material that is tracked onto public road surfaces by vehicle movements in and out of the docks, construction sites, waste-management sites and other similar sites; and potentially by road sweeping, street washing and application of dust suppressants to street surfaces, although the impacts on airborne PM from trials of these latter approaches have so far proven inconsistent and any benefits have been short-lived.

Low Emission Zones in Scotland are typically implemented to address vehicle exhaust emissions, through control of access to an area based on the type of vehicle and associated engine (Euro emissions) standards. As part of the Cleaner Air for Scotland Strategy, the four main Cities in Scotland have introduced LEZs. In May 2022, the Council gave notice to the Scottish Government that following robust options appraisal a City Centre LEZ would be introduced. Work to assess the scheme was undertaken in accordance with the Council's ongoing LAQM work, the National Low Emission Framework, National Modelling Framework, LEZ regulations and guidance and informed by engagement with members of the public and stakeholders. It also considered relevant impact assessments and alternative future scenario planning, in partnership with SEPA and Transport Scotland.

The contribution to air pollution in Scotland from non-exhaust emissions (NEE) and non-road mobile machinery (NRMM) including transportation refrigeration units and construction plant is also under consideration by the Scottish Government. NRMM, particularly within construction, is a significant contributor to air pollution in London,

where a NRMM LEZ is in place. NRMM are regulated through different standards[15] to road vehicles, but many fall outside these if they were manufactured before the regulations were introduced. With significant industry changes in the AQMA, it would be pertinent to flag the source of pollution from such machinery, and important to keep up to date with future Scottish Government research or publications on the matter.

Shipping emissions

Large ships generally burn high sulphur content oils in their main engines (bunker oils)[16]. The use of heavy fuel oil without adequate exhaust gas cleaning systems (scrubbers) gives rise to high sulphur content, nitrous oxides and PM emissions, including visible black smoke.

The Council liaises with ship operators, Forth Ports and the Maritime and Coastguard Agency in dealing with any relevant complaints.

Measures to improve emissions at ports include zero emission berths and creating shore side electricity charging facilities. Some onshore supply facilities have already been installed at Leith docks.

Changing land-use

The Council's City Plan 2030[17] highlights Edinburgh Waterfront area as an opportunity for large scale mixed-use regeneration to help meet the city's growth needs, particularly for new housing[18]. The City Plan 2030 identifies areas for housing-led mixed-use development sites in various ownerships in the Salamander Street AQMA. Some of this land was previously allocated for industry.

[15] Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018

[16] Department of Food and Rural Affairs , UK Government and Devolved Administrations LAQM-TG22-August-22-v1.0.pdf

[17] City Plan 2030 – The City of Edinburgh Council

[18] City Plan 2030 Written Statement November 2024

Analysis of major planning applications that are pending, have been recently consented or are under construction; shows that the number of housing units within the Salamander Street AQMA is currently proposed to double. See Table 5.

Table 5 – Housing Units (Existing and Planned) in the Salamander Street AQMA

		Dwellings	Student Housing Beds
Existing		**1310**	
Planned (Planning applications)			
14/05127/FUL	2 Ocean Drive	57	
18/08206/FUL	1 Bath Road (Salamander Street)	212	
20/00465/FUL	Baltic Street and Constitution St.	18	558
20/01313/FUL	57 Tower Street & 1 Bath Road	95	
24/01798/FUL	Land East Of 55 Tower Street	10	
23/06745/FUL	52 - 66 Salamander Street	62	279
24/01341/PPP	Land Northwest Of 26 Bath Road	337	
Planned Total		**791**	**837**
Total (Existing and Planned)		**2101**	

Notes for table: Source: Planning & Building Standards Services (November 2024).

Planning application can be retrieved here; Simple Search[19]

Introducing sensitive uses such as residential properties into an area of poor air quality requires to be undertaken carefully with the appropriate consideration of pollution exposure, potential mitigation and programming of development. The Planning and Building Standards systems will impact on improving air quality mainly in the longer term through careful policy-setting and land use planning. Day-to-day decision making on individual planning applications must be considered according to their individual merits, and planning conditions could be required in some circumstances.

[19] https://citydev-portal.edinburgh.gov.uk/idoxpa-web/search.do?action=simple&searchType=Application

City Plan 2030 states that Forth Ports Ltd decided to retain land at the Britannia Quay and south of Edinburgh Dock in port related uses and as part of the Low Carbon / Renewables East Enterprise Area. The Northern and Eastern Docks area is regarded as an area of general industrial, storage and business development and port-related uses. To provide a flexible context for renewable industry-related developments, City Plan 2030 does not set detailed layout or design principles.

The Council and partners are now in the early stages of the development work for City Plan 2040. This AQAP and the need to improve air quality should form part of the evidence to consider appropriate Place-based policies and strategies that address the juxtaposition of land-uses in and around the Salamander Street AQMA.

Forth Green Freeport

Green freeports are areas of operational and development land linked to a port where normal tax and customs rules are varied to promote economic growth and trade[20]. The Forth Green Freeport (FGF) plans to deliver:

- Scotland's biggest offshore renewables development platform across Leith, Burntisland and Rosyth
- A hydrogen economy and alternative fuels cluster for Scotland's transport sector
- Upgrades to public and private infrastructure
- New freight, rail and alternative fuel terminals
- Skills programmes, new innovation centre and training facilities etc.

The full outline business case for the FGF was approved by the Scottish and UK Governments in 2025, which will allow seed capital funding to be unlocked.

The process reflects the changing nature of Leith Docks with potential for new and different materials handling/assembly and manufacturing in the area. Future assessment would be required for the introduction of new processes which could

[20] Forth Green Freeport website https://forthgreenfreeport.com/faqs/#what-are-green-freeports

potentially lead to increased PM. Increasing the general background concentrations would be of concern.

The Council is a member of the FGF Consortium alongside Babcock, CalaChem, Edinburgh Airport, Falkirk Council, Fife Council, Forth Ports, INEOS, the Royal Navy, and Scarborough Muir Group, which will ensure appropriate oversight of activities.

4.3 Required Reduction in Emissions

Due to the complex nature of many of the sources highlighted, including variability of activity and uncertainty of emissions estimates, monitoring will play an important role in the assessment of the reduction in emissions and air quality concentrations.

Monitoring data will be reported in the Air Quality Annual Progress Report (APR) produced by the Council as part of statutory Local Air Quality Management duties.

Future APRs will include annual updates on the progress and implementation of the actions in the Final AQAP.

4.4 Key Priorities

The priority for this 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 PM_{10} more generally and ensure a downward trend of concentrations. This approach is consistent with the national air quality strategy – Cleaner Air for Scotland 2 – which encourages adopting a precautionary public health approach to air pollution reduction, with compliance with domestic and international air quality standards being a minimum.

The Council's priorities for the PM_{10} AQAP are:

- Strengthen relationships and practices between regulators and industry to improve air quality and include a citizen science air quality monitoring project.
- Set up a forum with the Council, housing developers and landowners in the vicinity of the AQMA to address the cumulative impact of industry and development on environmental protection matters.
- Continue to deliver sustainable transport interventions in the area which will reduce traffic levels with associated air quality benefits.

- Ensure early work on the City Plan 2040 takes account of the need to improve air quality and review evidence for appropriate Place-based policies and strategies that address the juxtaposition of land-uses in and around the Salamander Street AQMA.
- Promote information on local air pollution and provide advice to the public when pollution is high.

Through collaborative working, the Council ensures that wider strategic air quality action is implemented through existing policy areas, which include strategies covering Planning and development management, environmental protection including noise management, climate change, transport improvements and controlling domestic emissions.

5 Development and Implementation of the City of Edinburgh Council's PM_{10} AQAP

5.1 Consultation and Stakeholder Engagement

In developing this AQAP, the Council worked with partners with the aim of improving local air quality in the Salamander Street AQMA.

Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 6. Stakeholder engagement also included workshop-type meetings and written correspondence.

Table 6 – Statutory consultees

Consultee	Method of consultation
The Scottish Government	Steering Group and letter
The Scottish Environment Protection Agency (SEPA)	Steering Group and letter
Transport Scotland	Letter
All neighbouring local authorities	Letter
Other public authorities as appropriate, such as NHS Scotland and Health Boards	Steering Group and letter
Bodies representing local business interests and other organisations such as community groups as appropriate	Letter and stakeholder meetings

5.2 Steering Group

The Scottish Government, Scottish Environmental Protection Agency, NHS Lothian, Forth Ports, and Forth Green Freeport have also contributed to the production of this

AQAP through their involvement in a Steering Group with Council officers from the following disciplines:

- Transport Strategy & Partnerships
- Roads and Infrastructure
- Planning and Building Standards
- Network Management and Enforcement
- Regulatory Services (Environmental Health)
- Waste and Cleansing
- Sustainability, Climate Change & Adaptation
- Business Growth and Inclusion
- Equality Diversity and Rights

5.3 Consultation and Stakeholder feedback

Written feedback to the consultation was received from key stakeholders SEPA, SEStran, Transport Scotland, Leith Harbour and Newhaven Community Council (LHNCC) and neighbouring local authorities - Falkirk Council, Scottish Borders Council and Fife Council.

Edinburgh Access Panel, NHS Lothian and University of Edinburgh Queens Medical Research Institute took park in the workshops. One member of the public also provided a written responses to the consultation.

The Royal College of Physicians of Edinburgh, Scottish Wholesale, Maritime and Coastguard Agency, Harbour Connections, Public Health Scotland, Living Streets, Link Housing Association and Scottish Government acknowledged receipt of the invitation to consult.

Generally, stakeholders supported the AQAP and welcomed commitment from all partners to work towards improving air quality in the Salamander Street AQMA, in a comprehensive and pragmatic manner.

Additionally, there were topics within the AQAP that stakeholders felt could be strengthened, including air quality information and monitoring, the local forum, funding, enforcement, sustainable transport and communications and engagement.

Thirteen recommendations were made in respect to the stakeholder feedback, which include the creation of a new action (No.10) and providing additional or amending existing information in the AQAP. The recommendations were incorporated into the AQAP to ensure that consultee comments are considered.

5.4 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 25th March 2025 with representatives of the following disciplines within the Council; Environmental Health, Planning and Building Standards, Transport, Placemaking, Business Growth and Inclusion and Diversity and Equalities.

Findings highlighted 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 could cause negative effects such as potential additional costs to businesses associated with fugitive sources generating dust. Although it is not possible to fully negate this impact, it should not be prohibitive and be good industry practice.

5.4 Strategic Environmental Assessment

A formal Strategic Environmental Assessment (SEA) screening process was undertaken in respect to the SEA Gateway for full due consideration by SEPA and relevant parties.

The screening exercise showed that the 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.

6 AQAP Actions

Actions in the AQAP are presented under five themes:

- Industry
- Roads and Transport
- Development Management
- Information to the Public
- Air Quality Monitoring.

Table 7 (overleaf) shows the Council's ten AQAP actions. It contains:

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

Future LAQM Annual Progress Reports will include annual updates on implementation of these actions.

In accordance with the requirements of policy guidance (PG(S)(24)) the Council expects the Salamander Street AQMA to be revoked no later than 2030 and where possible in the shortest time possible.

Table 7 – Air Quality Action Plan Actions

Action No.	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments
1	Maintain links between CEC and SEPA to ensure Environmental Health are consulted on applications for Pollution, Prevention and Control (PPC) permits and Waste Management (WML) licenses in the vicinity of the AQMA.	Industrial	2026	In progress	CEC Regulatory Services SEPA	CEC SEPA	As required (staff time)	<£10k	Un-quantifiable		
2	Ensure communication routes between CEC and SEPA are clear and effective in relation to investigation of environmental events from activities in the vicinity of the AQMA.	Industrial	2026	In progress	CEC Regulatory Services SEPA	CEC SEPA	As required (staff time)	<£10k	Un-quantifiable		

Action No.	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments
3	Working in partnership CEC and Forth Ports shall review non-regulated processes including the loading/unloading of ships and movement and storage of materials in the docks to control dust generation.	Industrial	2026	Not currently planned	CEC Transport, Strategy & Partnerships Forth Ports	Staf time	Funded (staff time)	<£10k	To be quantified during review process		
4	Continue to deliver sustainable transport interventions in the area which will reduce traffic levels with associated air quality benefits.	Roads and Transport	2030	Not currently planned	CEC Transport, Strategy & Partnerships and Network Management & Enforcement and Roads & Infrastructure	CEC Scottish Government Transport Scotland	Dependant on individ-ual project	Dependant on individ-ual project	Dependant on individual project (if applicable)	Leith Connections development design stage 2024/25 https://www.edinburgh.gov.uk/leithconnections	Salamander Street survey work 2025. Potential resurfacing 2026/27
5	Ensure the mechanical and manual street cleansing route mapping and scheduling is appropriate for local circumstances.	Roads and Transport	2026	In progress	CEC Operational Support	CEC	Funded (staff time)	<£10k	Un-quantifiable		

Action No.	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments
6	In the early stages of the development work for the City Plan 2040, the Air Quality Action Plan and the need to improve air quality should form part of the evidence to consider appropriate Place-based policies and strategies that address the juxtaposition of land-uses in and around the Leith Docks.	Development Management	2030	In progress	CEC Planning & Building Standards	CEC	Funded (staff time)	<£10k	Un-quantifiable	City Plan 2040 - Report on evidence base	

Action No.	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments
7	Planning applications involving demolition, construction and/or other dusty activity in and around the Air Quality Management Area, must include a Construction Environmental Management Plan as part of proposals, to be agreed by CEC. If development is granted, the measures within such a plan would be adhered to by way of a condition on any planning permission. By way of an informative, developers will be advised to join the forum (mentioned below) to help manage the cumulative environmental impact of development.	Development Management	Ongoing	Not currently planned	CEC Planning & Building Standards	CEC	Funded (staff time)	<£10k	Difficult to quantify but applying good practice is a benefit		Buffer zone of 500m around AQMA

Action No.	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments
8	Set up a forum with CEC, housing developers, landowners, businesses and community groups in the vicinity of the AQMA to meet regularly to address the cumulative impact of development on environmental protection matters e.g. dealing with complaints, concerns about emissions and engaging with the local community.	Development Management	2026 with annual review	Not currently planned	ALL	CEC	£5K budget from surplus of LEZ operation	<£10k			Useful while demolition and construction of housing continues. Also, while the Forth Green Freeport is developed. Scope to include shipping emissions complaints. Links could also be made with noise management.

Action No.	Action	Category and Classification	Expected / Actual Completion Year	Measure Status	Delivery Organisation(s)	Funding Source	Funding Status	Estimated Cost of Measure	Target Reduction in Pollutant / Emission from Measure	Key Milestones	Comments
9	Promote the Scottish Air Quality Know and Respond service provided through Scottish Air Quality website.	Information to the public	2026	Not currently Planned	CEC Transport, Strategy & Partnerships	CEC	Funded	<£10k	Un-quantifiable		Know & Respond is a free service to subscribers in Scotland that sends registered users an alert message if air pollution in their area is forecast to be moderate, high or very high. The description of the level of pollution is based upon the Air Quality Banding System.
10	An air quality monitoring citizen science project is undertaken in partnership with SEPA, the local community and other stakeholders.	Air Quality Monitoring	2026	In progress	CEC SEPA	CEC SEPA	Funded	<£10k	Un-quantifiable		

7 Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
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
AQS Objective	Air Quality Strategy (statutory) Objective
APR	Annual Progress Report
CEC	The City of Edinburgh Council
EU	European Union
FIDAS	Light scattering monitor, Palas Fidas 200 measures both PM_{10} and $PM_{2.5}$ at the same time
Fugitive emissions	Emission usually brought about by unintended or irregular releases that do not pass through the intended emissions point
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides

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
SEPA	Scottish Environment Protection Agency
TEOM	Tapered Element Oscillating Microbalance monitor.