Annual Progress Report (APR)

THE CITY OF EDINBURGH COUNCIL

Data and monitoring sections completed by Bureau Veritas UK Limited on behalf of The City of Edinburgh Council

2023 Air Quality Annual Progress Report (APR) for The City of Edinburgh Council

In fulfilment of Part IV of the Environment Act 1995, as amended by the Environment Act 2021

Local Air Quality Management

October 2023

Information	The City of Edinburgh Council's Details
Local Authority Officer	Shauna Clarke
Department	Place
Address	The City of Edinburgh Council Waverley Court Level G4 4 East Market Street Edinburgh EH8 8BG
Telephone	07927 680386
E-mail	Shauna.Clarke@edinburgh.gov.uk
Report Reference Number	CEC_APR2023
Date	31st October 2023
Supported by	J. Cai Graduate Air Quality Consultant Bureau Veritas UK Limited

Executive Summary: Air Quality in Our Area

Air Quality in the City of Edinburgh

The City of Edinburgh Council currently has six Air Quality Management Areas (AQMAs):

- Central AQMA, declared for exceedances of the Nitrogen Dioxide (NO_2) annual mean AQS (Air Quality Standard) objective (annual mean of 40 µg/m^3) and 1-hour mean AQS objectives (where 200 µg/m^3, not to be exceeded more than 18 times per year);
- St John's Road AQMA, declared for exceedances of both the NO_2 annual and 1-hour mean AQS objectives;
- Great Junction Street AQMA, declared for exceedances of the NO_2 annual mean AQS objective;
- Glasgow Road AQMA, declared for exceedances of the NO_2 annual mean AQS objective;
- Inverleith Row AQMA, declared for exceedances of the NO_2 annual mean AQS objective; and
- Salamander Street AQMA, declared for exceedances of both the PM_{10} (Particulate Matter) annual and 24-hour mean AQS objectives.

An AQMA is required when a pollutant fails to meet air quality standards which are set by the Scottish Government. 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.

This report presents historic air quality monitoring data and new data from 2022.

Following annual review, the Council monitored NO_2 concentrations at 177 locations in 2022. These were predominately passive diffusion tubes sites, including four duplicate diffusion tube sites and six triplicate co-location sites, but also at eight automatic monitoring sites.

Only one exceedance of the **annual mean NO_2** AQS (Air Quality Strategy) objective of 40µg/m^3 was reported. This was at diffusion tube site ID 64, located at Queensferry Road

550 outside of any AQMAs, reporting an annual mean concentration of 41.3µg/m^3. This site is not located at a site of relevant exposure (as defined by the regulations) and therefore require distance correction calculations. Following NO_2 fall-off with distance calculation, annual mean NO_2 concentration at the nearest point of exposure is predicted to be 28.4µg/m^3. Hence within the parameters of the AQS objective.

No diffusion tube monitoring locations reported annual mean concentrations greater than 60µg/m^3, and none of the automatic monitoring stations recorded one-hour averages where concentrations exceeded 200 µg/m^3, therefore it is unlikely that there is a risk of any exceedances of the **NO_2 1-hour** objective during 2022.

Although there were no longer any travel restrictions during 2022 following the COVID-19 pandemic, NO_2 concentrations were similar to that in 2021 and generally have remained lower than pre-pandemic years. Areas where relative annual mean concentration increased from 2021 are largely surrounding junctions or areas of known congestion. This is to be expected with traffic levels returning following the easing of the COVID-19 pandemic restrictions, however no exceedances have been reported as a result of this.

Whilst 2020 and 2021 monitoring data should be taken with a degree of caution, the Council will consider reducing the boundary of the Central AQMA once the implications of the recently implemented Low Emission Zone (LEZ) become evident. Operation (enforcement) of the LEZ is planned for June 2024, following implementation of the scheme in May 2022.

Annual mean NO_2 concentrations within the Great Junction Street AQMA have reported concentrations to be below the AQS objective for five years running. The Council will consider revoking the Great Junction Street AQMA once the impact of the new tram extension and the Low Traffic Neighbourhood is known.

Within the Inverleith Row AQMA, there have now been four years of maintained compliance with the annual mean NO_2 objective. The Council received approval from the Scottish Government and the Scottish Environment Protection Agency (SEPA) to revoke this AQMA due to the continued trend of decreasing NO_2 concentrations being observed. Revocation order is planned to be published in January 2024.

Within the St John's Road AQMA, over the past five years there have been no sites reporting a exceedance or likely exceedance of the hourly AQS objective. As such, this AQMA is currently being amended to revoke the designation for the NO_2 1-hour mean

AQS objective. Again, the Council has received approval to amend this AQMA and the relevant order is also planned to be published in January 2024.

In general, there continues to be a decreasing trend of annual mean NO_2 concentrations observed. This general downward trend remains to be in line with the national trend of NO_2 pollution showing long-term improvement at urban background and roadside locations and is likely to be the result of lower traffic flows since the COVID-19 pandemic and a cleaner fleet. A detailed traffic survey is planned for Spring 2024, which will allow further analysis of these factors.

There were no reported exceedances of the Scottish **PM_{10} annual mean** AQS objective (18 µg/m^3), or of the **$PM_{2.5}$ annual mean objective** (10 µg/m^3) during 2022.

St John's Road exceeded the **PM_{10} 24-hour mean** AQS objective (50 µg/m3 not to be exceeded more than seven times a year), with 12 days of 24-hour means above 50 µg/m3. The is part attributed to a pollution event at St Johns Road during road surface dressing works.

At Salamander Street there were six days of 24-hour means above 50 µg/m^3 which is close to the objective. Monitoring will continue in the Salamander Street in the AQMA.

Actions to Improve Air Quality

The City of Edinburgh Council produced a draft revised the Air Quality Action Plan (AQAP) for Edinburgh in December 2022.

The Council's proposed AQAP measures consist of actions 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, and;
- Domestic Emissions.

This Plan underwent a period of statutory consultation in Spring/Summer 2023. The Plan will now be finalised in February 2024 taking account of the feedback provided.

The AQAP focuses on locations where exceedances or risk of exceedances of the NO_2 AQS objectives are identified, but it also includes strategic measures which will ensure concentrations of several pollutants are reduced across Edinburgh, even below current statutory objectives. This precautionary approach to public health is supported by the Cleaner Air for Scotland 2 Strategy (CAFS2) 2021 and assists in ensuring AQS objectives continue to be met.

Priority has been given to the ongoing development of the LEZ as the significant measure in the new Action Plan, to ensure operation of the scheme by June 2024, following the implementation of the scheme in May 2022. The LEZ is a necessary intervention to contribute towards meeting AQS objectives, and also to help maintain them.

Local Priorities and Challenges

Continuing economic growth in the city and wider region presents a challenge for air quality. Population growth has inevitable demand for all modes of transport and supported infrastructure. The new freeport status at the Port of Leith may also include changing transport and industrial patterns.

The Council has prepared Edinburgh's proposed new Local Development Plan called the City Plan 2030. This sets out the strategy for development, proposals and policies to shape development and inform planning decisions in the city to 2030 over the next years and beyond. As the Council approach the adoption of City Plan 2030, the Planning Service is at the early stages of the preparation of City Plan 2040 which will be the next local development plan. It will be prepared under new legislation and guidance. The current evidence gathering stage will include the development of an Evidence Report and this will contain spatial information to support an understanding of places, their characteristics and needs including the principal physical and environmental characteristics. The Evidence Report will be informed, for example by studies on transport infrastructure capacity, transport planning, energy developments, greenhouse gas emissions and climate risks.

In terms of local air quality management, priorities for the Council in 2024 will include;

- **Continued delivery of the Low Emission Zone** including:

  - Construction of road network changes to accommodate the operation of the LEZ boundary,
  - Signage and lineage notifying drivers at LEZ boundary and approach roads,
  - Enforcement infrastructure and systems,
  - On-going public and stakeholder communication to ensure maximum early compliance,
  - Continued engagement with the Scottish Government, Transport Scotland and the Scottish Environmental Protection Agency (SEPA) to monitor and evaluate the LEZ including by publishing regular updates on performance once operational from 1st June 2024, and;
  - Continue to update the LEZ City Model developed under the National Modelling Framework to reflect changes to the road network and fleet predictions from traffic surveys, which will form part of the scheme's overall monitoring and evaluation regime.
- **Finalise the Air Quality Action Plan**. With the feedback analysis from the consultation process, a final AQAP will be produced and presented to the Council's Transport and Environment Committee for approval in February 2024, prior to submission to the Scottish Government.
- **Finalise the drafting of the Salamander Street Action Plan** for PM_{10} for consultation once the steering group has reconvened.
- **Monitoring of Particulate Matter** will be considered adjacent to the Salamander Street PM_{10} AQMA, considering the level of new sensitive residential uses in the area.
- **Finalise legal processes to revoke and amend Air Quality Management Areas** to ensure revocation of the Inverleith Row AQMA and amendment of the St John's Road AQMA (removing the designation for exceedances of the short term (1-hour) NO_2 AQS objective).

How to Get Involved

Further information on how you can help improve air quality can be found by clicking on the link: http://www.scottishairquality.scot/what-can-i-do/

Individual decisions can make a big difference to improving air quality for example, rethinking your journey to lower your pollution footprint.

Quiet Routes are Edinburgh's walking and cycling routes, which avoid the busy main roads. The link below directs you to the route maps:

http://www.edinburgh.gov.uk/info/20087/cycling_and_walking/1475/explore_quietroutes

Table of Contents

List of Tables

List of Figures

1 Local Air Quality Management

This report provides an overview of air quality in the City of Edinburgh Council during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Progress Report (APR) summarises the work being undertaken by the City of Edinburgh Council to improve air quality and any progress that has been made.

Table 1.1 – Summary of Air Quality Objectives in Scotland

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be Achieved by
Nitrogen dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide (NO_2)	40 µg/m^3	Annual mean	31.12.2005
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
Particulate Matter (PM_{10})	18 µg/m^3	Annual mean	31.12.2010
Particulate Matter ($PM_{2.5}$)	10 µg/m^3	Annual mean	31.12.2021
Sulphur dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide (SO_2)	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO_2)	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 µg/m^3	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m^3	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m^3	Running 8-Hour mean	31.12.2003

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12 months, setting out measures it intends to put in place in pursuit of the objectives.

A summary of AQMAs declared by the City of Edinburgh Council can be found here; Air quality management areas – The City of Edinburgh Council. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at http://www.edinburgh.gov.uk/airquality. The AQMAs can also be viewed on the Council's air quality monitoring network map at the following link: https://cityofedinburgh.maps.arcgis.com/apps/webappviewer/index.html?id=08bce99ce03e4e2198935a4334041a8f.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants (AQO)	City / Town	Description	Action Plan
Central AQMA	NO_2 annual mean NO_2 1-hour mean (amended March 2009)	Edinburgh City Centre	City centre and main arterial routes. Extensions in: March 2009 to include West Port; April 2013 to include Gorgie Road, Chesser, Grassmarket, Cowgate and London Road, Easter Road; and September 2015 to include Angle Park Terrace and Clerk Street, Nicolson Street areas. Exceedances mostly in locations where there are street canyons, high percentage of bus movements and congested traffic. Residential properties at basement, ground, first, second, third, and fourth level, 2–4 metres from road edge. Busy shopping areas included as well as upwards road gradient at	Air Quality Action Plan (Updated 2010) New Action Plan being finalised for February 2024

AQMA Name	Pollutants (AQO)	City / Town	Description	Action Plan
			Leith Walk, North Bridge and West Port.	
St John's Road AQMA	NO_2 annual mean NO_2 1-hour mean (amended March 2009)	Corstorphine, Edinburgh	Part of the A8 route at Corstorphine area. Residential properties at ground, first, second, third and fourth floor level within 2m of kerb edge. Street canyon effect in part. Busy shopping area. Congested flat road with high percentage of bus movements.	As above
Great Junction Street AQMA	NO_2 annual mean	Leith, Edinburgh	The full length of road to the depth of the building facades, including the Ferry Road Junction area. Residential properties at first, second, third and fourth floor level. Street canyon, congested traffic and busy shopping area. Receptors close to road edge. High percentage of bus movements. Extended April 2013 to include Bernard Street, Commercial Street and North Junction Street.	As above
Glasgow Road AQMA	NO_2 annual mean	West Edinburgh	Part length of A8, between Newbridge Roundabout and Ratho Station, to the depth of the building facades.	As above
Inverleith Row AQMA	NO_2 annual mean	North Edinburgh	The road comprising the junction of Inverleith Row and Ferry Road, to the depth of building facades.	As above
Salamander Street AQMA	PM_{10} annual mean 24-hr mean	Leith, Edinburgh	A section of the A199 including Salamander Street, Baltic Street, Bernard Street, and part of Seafield Road; an area to the north-east as far as the East Sands of Leith and south of Baltic Street, extending to Queen Charlotte Street and Links Place	Action Plan currently under development

2.2 Cleaner Air for Scotland 2

Cleaner Air for Scotland 2 – Towards a Better Place for Everyone (CAFS2) is Scotland's second air quality strategy. CAFS2 sets out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health and fulfil Scotland's legal responsibilities over the period 2021 – 2026. CAFS2 was published in July 2021 and replaces Cleaner Air for Scotland – The Road to a Healthier Future (CAFS), which was published in 2015. CAFS2 aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe". A series of actions across a range of policy areas are outlined, a summary of which is available on the Scottish Government's website.

Progress by the City of Edinburgh Council against relevant actions for which local authorities are the lead delivery bodies within this strategy is demonstrated below.

2.2.1 Placemaking – Plans and Policies

Local authorities with support from the Scottish Government will 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.

In 2023, the council consulted on a suite of new transport action plans, including the Air Quality Action Plan which are designed to support the delivery of Edinburgh's local transport strategy, the City Mobility Plan (CMP). The consultation also took account of the emerging Future Streets Framework (Circulation Plan) which will consider the strategic direction of street space reallocation for prioritising different modes of transport. Air quality is proposed to be a determining factor within the framework.

Also in 2023, further work is being developed under the City Region Deal arrangements, agreed in 2018 with regional local authorities, national governments, and educational institutions. In the west of the city, transport infrastructure changes are being planned. The City Region Deal recognises cross-region commuting patterns (from disparities in job densities), contributing to areas of congestion and significant levels of pollution in some locations. Interventions to unlock current physical barriers to growth, including housing and transport connectivity are a key component of the City Region Deal. By upgrading existing

transport infrastructure, the aim is to reduce journey times across the city region, opening up more job opportunities for residents and augmenting the impact of recent major investments. The impact of identified transport infrastructure changes on air quality will need to be considered further as infrastructure plans are developed.

The Council's new local development plan, City Plan 2030, is currently in the final stages of examination, prior to it being adopted in 2024. The City Plan seeks to improve air quality and reduce emissions by promoting a brownfeld approach (for new development), 20-minute neighbourhoods, a modal shift away from private car travel and supporting zero carbon energy schemes. This includes guiding new development to locations already close to local amenities that future occupiers and users of the developments can walk and cycle to. Some new developments will also be required to provide new local amenities to reduce private car travel. Furthermore, City Plan contains many proposals for new and enhanced Active Travel and public transport routes to serve new and existing development, including a revised safeguard for future tram lines. City Plan establishes the principle of maximum parking limits for new developments as well as the need for these new developments to incorporate measures to promote active travel and shared mobility to reduce car ownership.

The need to improve air quality is also set out clearly in the City's Climate Strategy, where reducing emissions and adapting the city to be resilient to climate change is a focus. Health, local air quality management and a just transition were key factors in determining the final list of strategic actions, which are about more than reducing greenhouse gas emissions. By bringing together the wider range of City priorities, the strategy is also about creating a city which is cleaner, healthier and greener, with natural habitats helping wildlife to thrive and helping to protect the city from flooding and other climate change impacts, and where:

- People live in neighbourhoods with easy access to greenspaces and local services reducing the need to travel.
- Homes are well-insulated, energy efficient and heated and powered by low-cost, renewable energy.
- More people work from home or in local hubs more of the time.
- The city has a network of safe and attractive active travel routes, and an integrated world class sustainable public transport system, which is affordable for everyone.

- Most citizens find they no longer need a car, and a network of car clubs and electric vehicle charging hubs is available to support those who do.
- The city centre is re-imagined as a place for people walking, cycling and wheeling, with excellent public transport accessibility and with the needs of the most vulnerable fully catered for.
- Edinburgh is a hub for net zero innovation, with a new breed of sustainable local businesses creating local jobs and skills development opportunities.

The City of Edinburgh Council will provide further updates on this CAFS action following any discussions with the Scottish Government throughout the life span of the CAFS2 strategy.

2.2.2 Transport – Low Emission Zones

The other CAFS Action that requires local authorities to report on is that related to Low Emission Zone development work. The action states that local authorities, working with Transport Scotland and SEPA, will look at opportunities to promote zero-carbon city centres within the existing LEZs governance structure.

The City of Edinburgh Council has agreed to meet with partners to consider the potential opportunities. Further updates will be provided in future reports.

2.3 Implementation of Air Quality Action Plan(s) and/or measures to address air quality

To ensure local authorities implement the measures within an action plan by the timescales stated within that plan, the Scottish Government expects authorities to submit updates on progress through the APR process.

The City of Edinburgh Council revised the NO_2 Air Quality Action Plan for Edinburgh in 2022. A copy is provided here; Draft AQAP 2022. This Plan underwent a period of statutory consultation in Spring/Summer 2023. The Plan will be finalised by February 2024 taking account of the feedback provided.

During the initial stages of developing a new draft AQAP, a review of the actions in the existing plan was undertaken to consider their success, or otherwise, and help identify those which remain relevant going forward into the updated AQAP. The outcome of this review is summarised below. This has been part of a wider review of relevant national, regional, and local policies, plans and programmes which have the potential to impact air quality in Edinburgh which is included in the AQAP document.

The focus of the 2010 AQAP was to reduce emissions from buses and freight vehicles operating in the city. A Low Emission Strategy Feasibility Study undertaken prior to 2008, concluded that the greatest reductions in nitrogen oxides (NO_x) and PM_{10} emissions would be achieved by implementing a mandatory emissions reduction scheme for bus and road freight operators. Voluntary Partnership Agreements were deemed the next best option.

Actions in the AQAP were broadly set out under the following themes:

- Cleaner Vehicles – Actions on Buses
- Cleaner Vehicles – Actions on Freight
- Policy Planning and Assessment
- Transport Planning
- Traffic Management
- Cleaner Vehicle - Council Fleet
- Other

Conclusions from each of these themes is summarised below.

Cleaner Vehicles – Actions on Buses

Ongoing work with bus operators has developed since the AQAP was published, through voluntary partnerships, retrofitting existing buses and assisting bus operators with renewal

of the fleet through Scottish Government funding. Buses are being further targeted through the Low Emission Zone (LEZ). The main bus operator Lothian Buses is fully compliant with the LEZ requirements (Euro VI or equivalent). In terms of impacts on emissions in the city centre, this group of ongoing measures is likely to have had the largest impact and will continue to help improve air quality as the bus fleet moves away from diesel.

Cleaner Vehicles – Actions on Freight

The main measure relating to freight has been the implementation of the ECO Stars scheme, which is a voluntary, free to join fleet recognition scheme that provides bespoke guidance on environmental best practice to operators of goods vehicles, buses, coaches and other fleets, whose regularly serve the Edinburgh area. It has expanded to include over 11,806 vehicles and 335 members, one of the largest schemes in the UK. Heavy Goods Vehicles (HGVs) have seen the largest proportional reductions in emissions with increasing Euro standards (particularly Euro 6), and therefore this measure is likely to have brought forward emissions reductions sooner than would otherwise have been the case.

Policy Planning and Assessment

The 2010 AQAP included a measure to run a series of seminars on air quality monitoring, establish a city-wide inventory of development sites, and develop further modelling of air quality impacts around current developments. Although this area of work hasn’t progressed as much as those discussed above, air quality impact assessments submitted with relevant planning applications ensure that air quality is fully considered within the planning process.

In more recent years the Council introduced an Environmental Protection section into the Edinburgh Design Guidance which gives developers non-statutory advice on air quality matters. The new local development plan, City Plan 2030, and national planning policy (NPF4)also addresses air quality to some extent.

Transport Planning

At the time of the 2010 AQAP the Local Transport Strategy (LTS) was the Council’s key transport strategy. Since then, Edinburgh’s Active Travel Action Plan has been updated periodically and the LTS has been replaced by the City Mobility Plan (CMP) which, among other aims, strongly reflects the Council’s target to be a net zero city by 2030. The CMP

has also set the target of reaching a 30% reduction in car kilometres by 2030, high than the national 20% target reflecting Edinburgh's generally urban character. Throughout the evolution of transport policy in Edinburgh since the AQAP was published, air quality has been considered within the process, with air quality professionals collaborating on policy and guidance to reduce both vehicle numbers and emissions. The continued implementation of the CMP will be key to supporting the delivery of the updated AQAP. At the time of writing, CMP is undergoing its first bi-annual review, the outcomes of which will be presented to the Council's Transport and Environment Committee in February 2024 in parallel with the finalised AQAP and other transport-led action plans.

Traffic Management

Traffic management measures have focussed on traffic signalling (implementation of SCOOT and MOVA at various junctions across the city) and 20 mph zones. At the Newbridge Roundabout (Glasgow Road AQMA) a feasibility study of three specific options was undertaken. Modelled emission reductions for NOx, PM10 and CO2 were 47%, 29% and 43% respectively, for the afternoon peak period with implementation of MOVA. Vehicle time delays were assessed pre-and post-installation with results showing that there was a significant reduction in waiting time on the A8 westbound corridor. In most cases these systems will reduce stop start traffic at specific junctions will result in localised and marginal reductions in emissions.

The Council has more recently introduced measures under the Smart Cities programme relating to intelligent infrastructure, namely a digital Urban Traffic Management & Control system (UTMC) to monitor traffic and environmental conditions around the city. This will help deal with congestion.

Cleaner Vehicles - Council Fleet

Some progress has been made in both driver training (eco-driving) and in telematics use in council vehicles. There has also been a gradual fleet renewal with an increase in electric vehicles for the Council fleet. An electric 15-tonne mechanical street sweeper entered operation in 2020, which is the first of its type in Scotland. Electric vehicle charging infrastructure has also been developed for the Edinburgh Leisure estate and new electric bin lorries. Although the Council fleet is not a large proportion of overall traffic in Edinburgh, and therefore will not have a large impact, it is important to show leadership and increase public awareness of the use of low emission vehicles.

Other

Other measures in the AQAP included staff awareness training, which although would not have had a large impact on emissions, raised awareness about air quality more widely across the Council and City especially with promoting Clean Air Day and general public health messaging. Measures progressed since the AQAP was published include the Edinburgh Tram, Borders Rail Link, Electric Vehicle infrastructure and extensive feasibility work on the LEZ (see below). Progress on actions in the plan and other measures the Council is undertaking which affect air quality have been reported annually within Edinburgh's Annual Progress Report (APR). The APR has also reported a general downward trend in concentrations of NO_2 across Edinburgh. This will be as a result of both local measures (for example those to reduce emissions from buses and freight), measures being implemented by the Scottish Government (through Cleaner Air for Scotland) and those at a wider scale (such as those to reduce emissions from vehicles/improved Euro Standard vehicles).

The Draft AQAP has also been created in tandem with emerging placemaking and mobility-led strategies and actions plans including the Street-space Allocation Framework and action plans covering active travel, public transport, road safety and parking. This approach maximises delivery of relevant strategic objectives in the Council's City Mobility Plan, 2030 Climate Strategy, and emerging City Plan 2030.

Low Emission Zone

The Draft Plan is intended to complement the substantial amount of work which has been undertaken in relation to the Low Emission Zone (LEZ).

The Cleaner Air for Scotland strategy introduced the National Low Emission Framework (NLEF), in 2019 to provide a methodology for local authorities to undertake assessments in relation to transport related actions to improve air quality, where transport is identified as the key contributor to local air quality problems. It was designed to support and build on the work already being done through LAQM regime and on completion of screening assessments (a component of the 2017/18 Programme for Government (PfG) commitment) it was determined that Edinburgh and the three other biggest cities in Scotland would introduce LEZs. In May 2021, the regulations to give Scottish local authorities detailed powers under the Transport (Scotland) Act 2019 to create and enforce LEZs became law. Further guidance stipulated and supported the use of the National

Modelling Framework (NMF) to assess and develop the LEZs in pursuit of meeting the AQS objectives and reducing climate change emissions.

Priority has been given to the ongoing development of the LEZ as the significant measure in the new Action Plan, to ensure operation of the scheme by June 2024, following the implementation of the scheme in May 2022. The LEZ is a necessary intervention to contribute towards meeting AQS objectives, and also to help maintain them.

In 2023 and 2024, the continued delivery of the Low Emission Zone Scheme will include:

- Construction of road network changes to accommodate the operation of the LEZ boundary,
- Signage and lineage notifying drivers at LEZ boundary and approach roads,
- Enforcement infrastructure and systems implementation,
- On-going public and stakeholder communication to ensure maximum early compliance,
- Continued engagement with the Scottish Government, Transport Scotland and the Scottish Environmental Protection Agency (SEPA) to monitor and evaluate the LEZ, and;
- Continue to update the LEZ City Model developed under the National Modelling Framework to reflect changes to the road network and fleet predictions from traffic surveys, which will form part of the scheme's overall monitoring and evaluation regime.

The revised draft AQAP focuses on locations where exceedances or risk of exceedances of the NO_2 AQS objectives are identified, but it also includes strategic measures which will ensure concentrations of several pollutants are reduced across Edinburgh, even below current statutory objectives. This precautionary approach to public health is supported by the Cleaner Air for Scotland 2 Strategy (CAFS2) 2021 and assists in ensuring the objectives continue to be met.

The actions in the draft Plan are summarised under eight key themes and set out in Table 2.2 below - *Draft Air Quality Action Plan Actions – consulted on Spring/Summer 2023.* Each action includes the Council department or other organisation who is responsible for delivery, expected benefit in terms of pollutant emission and/or concentration reduction (where possible), implementation timescale, and how progress will be monitored.

The draft Plan also recognises key issues that need to be prioritised as follows:

- Implementation of the LEZ, which should reduce concentrations of nitrogen dioxide in central Edinburgh to a level which achieves the air quality objectives and Limit Values at most locations,
- 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.

There are several air quality policy areas that are outside of the direct control of the Council, such as vehicle emissions standards. The Council will therefore continue to work with regional and central government and key stakeholders on policies and issues beyond the Council's direct influence, particularly where local evidence can be provided to support and influence change.

The draft AQAP has been produced in collaboration with external bodies, SEPA, Transport Scotland and NHS Lothian, as well as relevant Council disciplines including Placemaking and Mobility, Planning, Climate (Policy and Insight), Regulatory Services, Finance and Communications.

With the feedback analysis from the consultation process, a final AQAP will be produced and presented to the Council's Transport and Environment Committee for approval in February 2024, prior to submission to the Scottish Government, under the requirements of the Environment Act 1995 (as amended).

Table 2.2 – Draft Air Quality Action Plan Actions – consulted on Spring/Summer 2023

Theme	Action	Category and Classification	Lead Authority (Service Area)	Planning Phase	Implementation Phase	Key Performance Indicator	Target Reduction in Pollutant / Emission	Progress to date	Estimated Completion	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 modelling work.	Promoting Low Emission Transport – Low Emission Zone	The Council (Placemaking and Mobility, Network Management and Communications)	N/A	2022 onwards	Annual LEZ performance reporting	NOx emissions from traffic sources within LEZ by 55% (equivalent to 25-30 tonnes/year), when compared to 2019 levels	Initial implementation in place 31st May 2022	2025	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 structure.	Promoting Low Emission Transport – Low Emission Zone	The Council (Placemaking and Mobility), SEPA, Transport Scotland	2021-2026	N/A	N/A	N/A	None	2026	Cleaner Air for Scotland Strategy action

Theme	Action	Category and Classification	Lead Authority (Service Area)	Planning Phase	Implementation Phase	Key Performance Indicator	Target Reduction in Pollutant / Emission	Progress to date	Estimated Completion	Comments
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	The Council (Network Management)	N/A	N/A	Modelled emission reductions for individual schemes	N/A	N/A	N/A	The City NMF Model should be utilised
	2.2 Undertake detailed design work for the St John's Road/Drumbrae South junction and implement improvements	Traffic Management – Strategic Highway Improvements	The Council (Placemaking and Mobility)	2018	To be confirmed	Implementation of changes	Not quantifiable	Preliminary design and traffic modelling undertaken	To be confirmed	Details of resourcing and programming to be confirmed with Major Junctions Review
	2.3 In conjunction with Transport Scotland, 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	The Council (Placemaking and Mobility and Network Management) and Transport Scotland	N/A	N/A	Implementation of changes	Not quantifiable	N/A	N/A	Scheme could be considered in the lifetime of the Plan

Theme	Action	Category and Classification	Lead Authority (Service Area)	Planning Phase	Implementation Phase	Key Performance Indicator	Target Reduction in Pollutant / Emission	Progress to date	Estimated Completion	Comments
	2.4 Make use of the City's air quality model developed under the CAFS National Modelling Framework (NMF) for the LEZ, to help understand the air quality impacts of proposed street projects; and to assist in the selection of mitigation measures where necessary, to maximise improvements in air quality	Transport Planning and Infrastructure - Other	The Council (Placemaking and Mobility) and SEPA	2023	Across the timescale of this Plan	Annual LEZ performance reporting	N/A	None	2024 to have process in place	
3 Active Travel	3.1 Engage in Clean Air Day on an annual basis over the 5-year period of this plan	Promoting Travel Alternatives / Public Information	The Council (Placemaking and Mobility)	2022	Annually across the timescale of this Plan	Clean Air Day activities	Not quantifiable	Previous engagement	2027	
	3.2 Work with Council education officers and schools, to increase awareness of air quality across the school community	Promoting Travel Alternatives / Public Information	The Council (Placemaking and Mobility) and SEPA	2022	Across the timescale of this Plan	N/A	Not quantifiable	Ongoing ad-hoc activities within schools	2027	
	3.3 Support citizen science-type projects looking at air quality to encourage behaviour change towards sustainable travel modes	Promoting Travel Alternatives	The Council (Placemaking and Mobility)	N/A	N/A	N/A	Not quantifiable	N/A	Unknown at this stage	

Theme	Action	Category and Classification	Lead Authority (Service Area)	Planning Phase	Implementation Phase	Key Performance Indicator	Target Reduction in Pollutant / Emission	Progress to date	Estimated Completion	Comments
4 Public Transport	4.1 Incorporate air quality considerations into the new Public Transport Action Plan (PTAP)	Transport Planning and Infrastructure	The Council (Placemaking and Mobility)	2022	2022-2027	PTAP produced which identifies air quality as a determining factor when considering the prioritisation of schemes	Not quantifiable	None	Across the timescale of this plan	
	4.2 Support projects to decarbonise the Edinburgh bus fleet.	Promoting Low Emission Transport	The Council (Placemaking and Mobility)	2022/23	Ongoing	Number of electric or alternatively fuelled vehicles in Edinburgh bus fleet	Not quantifiable	Low uptake to date	n/a	
5 Low Emission vehicles	5.1 Continue the ECO Stars fleet recognition scheme	Vehicle Fleet Efficiency – Fleet Efficiency and Recognition Schemes	The Council (Regulatory Services)	Annually	Ongoing	Numbers of vehicles registered on the scheme	Not quantifiable	ECO stars well established	2027	
	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	The Council (Planning and Building Standards)	2022	2022/23	Updated guidance (within Edinburgh Design Guidance)	Not quantifiable	N/A	2023	Annual incremental improvements to be applied until 100% car parking is EV charging-ready

Theme	Action	Category and Classification	Lead Authority (Service Area)	Planning Phase	Implementation Phase	Key Performance Indicator	Target Reduction in Pollutant / Emission	Progress to date	Estimated Completion	Comments
6 2030 Climate Strategy	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	Promoting Low Emission Plant - Other Policy	The Council (Planning and Building Standards)	2022	2023/24	City Plan policy adoption	Not quantifiable	City Plan drafted for examination	2024	
7. Integrated Policy	7.1 Host a workshop with relevant Council officers to increase collective knowledge of air quality issues and solutions	N/A	The Council (Placemaking and Mobility)	2022	2022/23	Workshop held	N/A	None		
	7.2 Use SEPA's regional air quality model to investigate the impacts of City Plan development on air quality in the long term	Transport Planning and Infrastructure - Other	The Council (Planning and Building Standards) and SEPA	2022	2023	Development of SEPA regional model	N/A	See Comments	2027	Work is ongoing to incorporate road network and traffic data into to the AERIUS tool, a pilot tool.
	7.3 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	Promoting Low Emission Plant – Other Policy	The Council (Regulatory Services)	2022	2022 onwards	Change in licensing laws	N/A	None		

Theme	Action	Category and Classification	Lead Authority (Service Area)	Planning Phase	Implementation Phase	Key Performance Indicator	Target Reduction in Pollutant / Emission	Progress to date	Estimated Completion	Comments
	7.4 Continue to enforce against vehicle idling and expand awareness raising campaigns, including advising commercial fleet operators at Council's Events Planning and Oversight Group of engine idling laws	Traffic Management – Anti-Idling Enforcement	The Council (Network Management and Enforcement and Communications)	2022	2022 onwards	TBC	Not quantifiable	Enforcement mechanism already in place.	Across the lifetime of this plan	
	7.5 Ensure Placemaking strategies and guidance including Place Briefs take account of air quality.	Policy Guidance and Development Control – Air Quality Planning and Policy Guidance	The Council (Planning and Building Standards & Placemaking and Mobility)	2022	ongoing	Evidence of Increasing prominence of air quality consideration within strategies and guidance	Not quantifiable	Air quality is a considering factor in the development of the emerging Street Space Allocation Framework	Across the lifetime of this plan	Link to Cleaner Air for Scotland 2 Strategy Action
8 Domestic Emissions	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	Public Information	The Council (Placemaking and Mobility, Communications)	2022	Unknown at this stage	Campaigns undertaken	Not quantifiable	None	Unknown at this stage	

Theme	Action	Category and Classification	Lead Authority (Service Area)	Planning Phase	Implementation Phase	Key Performance Indicator	Target Reduction in Pollutant / Emission	Progress to date	Estimated Completion	Comments
	8.2 Lobby Scottish Government to review the Clean Air Act, in particular supporting abolishing permitted development rights for flues for woodburning stoves and biomass boilers	Promoting Low Emission Plant – Other Policy	The Council (Regulatory Services)	2022	2022 onwards	New Clean Air Act	Not quantifiable	None		
	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	The Council (Regulatory Services)	2022	2022	Summary report on initial analysis of findings	Not quantifiable	None	2024	
	8.4 Lead on the development and delivery of net zero community pilots based in geographies with different demographic profiles and community capacity.	Promoting Low Emission Plant – Other Policy	The Council (Policy and Insight)	Already started working on Phase 1 of the pilot	2023/24 onwards	n/a	Not quantifiable	Funding secured (£500k one-off CEC investment) Phase 1 started	TBC	

Theme	Action	Category and Classification	Lead Authority (Service Area)	Planning Phase	Implementation Phase	Key Performance Indicator	Target Reduction in Pollutant / Emission	Progress to date	Estimated Completion	Comments
	8.5 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	The Council (Housing Strategy & Development)	Already started	Already started	% of social housing compliant with EESH2	Not quantifiable	Stock condition surveys of CEC housing stock carried out in 2022/2023. A WHR pilot across 10 pilot areas covering 10 different building types is underway and will inform the longer-term investment and roll out of the whole house retrofit programme	Develop-ment of the programme by end of 2023. Completion of the works beyond 2030	

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out the monitoring that has been undertaken and how concentrations of the monitored pollutants compare with the relevant objectives.

The City of Edinburgh Council undertook automatic (continuous) monitoring at nine sites during 2022. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available through the Scottish Air Quality website.

Maps showing the location of the monitoring sites are provided in Appendix D and on the City of Edinburgh's website. Further details on the calibration of the monitors and any adjustments to the data are included in Appendix C.

Glasgow Road monitoring station reported an NO_2 data capture below 75% in 2022 (68%). This was due to the part-decommissioning of the Glasgow Road monitoring station in September 2022. Funding was obtained from the Scottish Government LAQM grant to rationalise the monitoring network. The project includes the decommissioning of the Glasgow Road air quality monitoring station, which has recorded NO_2 and PM_{10} concentrations below the objective since its installation in 2013. A new smaller monitoring unit was purchased and installed on Drumsheugh Place, which is located in the New Town, on the Low Emission Zone boundary. Once fully commissioned, monitoring of NO_2 will be undertaken with a new T200 NO_x analyser and Particulate Matter will be monitored with the FIDAS instrument from Glasgow Road. The NO_x analyser from Glasgow Road was relocated to Gorgie Road in September 2022 as a replacement.

St Leonard's monitoring station reported an ozone data capture lower than 75% in 2022 (46%).

All other monitoring stations reported an NO_2 data capture greater than 75% for 2022. Data capture rates for PM_{10} and $PM_{2.5}$ were greater than 75% for all monitoring locations.

3.1.2 Non-Automatic Monitoring Sites

The City of Edinburgh Council undertook non- automatic (passive) monitoring of NO_2 at 168 sites during 2022. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D and on the City of Edinburgh's website. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

During 2022, 14 monitoring sites were decommissioned and six new monitoring sites were deployed. A summary of these sites is presented in Table 3.1 below. This is part of the Council's continual review and analysis of the network, and also as part of the National Modelling Framework (NMF) by the Scottish Environment Protection Agency (SEPA) to develop city and regional models to assess, monitor and evaluate the Low Emission Zone and the potential impacts of future land development at local and regional levels.

Table 3.1 – Newly Commissioned/Decommissioned Diffusion Tube Sites in 2022

Site ID	Site ID	Removed / New
62	Queensferry Road 561	Removed
129	Queensferry Road/Hillpark Wood	Removed
79A	Fountainbridge 103	Removed
80a	Gorgie Road/Glen Lea	Removed
25d	Easter Road/Bothwick	Removed
120	Leith Walk 45-47	Removed
118	Lindsay Road 198-199	Removed
68	London Road/Parson's Green Ter	Removed
117	Restalrig Road 1 nr junction	Removed
30A	Rodney Street 10	Removed
6B	Bruntsfield Place 147	Removed
150	Drum Street	Removed
152	Mayfield Road No.90	Removed
163	New Arthur Place	Removed
78a	Appin Street 14	New
145	Corstorphine High Street 1	New
145a	Corstorphine PS	New
98	Bernard Terrace	New
97	Dumbiedykes Road	New
28e	St Leonards Street 145a	New

3.2 Individual Pollutants

The air quality monitoring results presented in this section are annualised and bias adjusted where relevant. Further details on annualisation and bias adjustment are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the NO_2 annual mean concentrations for the past five years with the annual air quality objective of 40 µg/m^3. For diffusion tubes, the full 2022 dataset of monthly monitoring data is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200 µg/m^3, not to be exceeded more than 18 times per year.

With regard to automatic monitoring, out of the eight automatic monitoring stations which measures NO_2 concentrations, only one required annualisation due to data capture below 75%, which is Glasgow Road.

Annualisation has been carried out in accordance with the methodology set out in LAQM.TG(22). Further information of this can be found in Appendix C.

Seven automatic monitoring stations had a data capture greater than 75%. Of these no exceedances of the annual mean NO_2 AQS objective of 40 µg/m^3 was reported during 2022. The maximum reported annual mean concentration at an automatic site was 29.2 µg/m^3 at St John's Road. Exceedances of the annual mean NO_2 AQS have previously been reported in 2019 at both Nicolson Street and St John's Road.

For comparison against the short-term objectives there must be a data capture of 85% or greater throughout the calendar year. For the six automatic monitoring stations with annual data capture greater than 85%, there were no monitored one-hour averages where concentrations exceeded 200 µg/m^3.

For the two automatic monitoring stations with annual data capture less than 85%, the 99.8th percentile has been calculated. The 99.8th percentile concentrations are all well below 200 µg/m^3. This suggests that had there been 100% data capture there would have not been more than 18 hours where hourly concentrations exceeded 200 µg/m^3.

With regard to non-automatic monitoring carried out using passive diffusion tubes, one monitoring location reported an annual mean NO_2 concentration exceeding the AQS objective of 40 µg/m^3. The maximum concentration monitored was 41.3 µg/m^3, recorded at diffusion tube ID64. This is located at Queensferry Road 550, outside of any AQMAs. This site is not located at a site of relevant exposure and therefore required distance correction. Following the NO_2 fall-off with distance calculation, the annual mean NO_2 concentration at the nearest point of exposure is predicted to be 28.4 µg/m^3. This is well below the annual average NO_2 objective.

In addition, one monitoring location reported an annual mean concentration within 10% of the AQS objective. This was monitored at diffusion tube 69J (located at Queensferry Road 554), with an annual mean concentration of 37.3 µg/m^3. This site is not located at a location of relevant exposure, therefore distance correction was undertaken. Following the NO_2 fall-off with distance calculation, the annual mean NO_2 concentration at the nearest point of exposure was predicted to be 26.2 µg/m^3. This is also well below the annual average NO_2 objective.

No sites reported a concentration greater than 60 µg/m^3, which would suggest that there have not been any exceedances of the hourly average objective for NO_2.

Although there were no longer any travel restrictions during 2022 following the COVID-19 pandemic, NO_2 concentrations were similar to that in 2021 and generally have remained lower than pre-pandemic years.

Areas where relative annual mean concentration increased from 2021 are largely surrounding junctions or areas of known congestion. This is to be expected with traffic levels returning following the easing of the COVID-19 pandemic restrictions, however no exceedances have been reported as a result of this.

Whilst 2020 and 2021 monitoring data should be taken with a degree of caution, the Council will consider reducing the boundary of the Central AQMA once the implications of the recently implemented Low Emission Zone (LEZ) become evident. Operation (enforcement) of the LEZ is planned for June 2024, following implementation in May 2022.

All monitoring locations within the Great Junction Street AQMA have maintained compliance with the annual average NO_2 objective for the past five years. Prior to 2020, the monitoring locations indicated that annual mean NO_2 concentrations were decreasing. However, the Great Junction Street AQMA may be impacted by the recently commenced

tram operations from City Centre to Newhaven (June 2023) and construction of the Low Traffic Neighbourhood LTN – Leith Connections (started in in April 2023). Further traffic restrictions with the LTN will also commence in October 2023. The Council therefore will consider revoking the Great Junction Street AQMA once the impact of these transport interventions is known.

Within respect to the Inverleith Row AQMA, there have now been five years of compliance with the annual mean NO_2 objective. The Council has received approval from Scottish Government and SEPA to revoke this AQMA due to the continued trend of decreasing NO_2 concentrations. The revocation order is planned to be published in January 2024.

With respect to the St John's Road AQMA, over the past five years there have been no diffusion tube sites reporting an annual concentration greater than 60 µg/m^3, and there were less than 18 hourly periods where concentrations have exceeded 200 µg/m^3. As such, this AQMA is currently being amended to revoke the designation for the NO_2 1-hour mean AQS objective. Approval has also been agreed for this. The revocation order is planned to be published in January 2024.

TRENDS

Trend analysis has been undertaken at all automatic monitoring locations using both Excel and the Openair package in R Studio where more than five years' worth of valid data is available. The Scottish Air Website allows users to use this without the requirement of downloading and using R Studio. Excel has been used for regression analysis.

All continuous monitoring locations have sufficient data available to assess the trends in NO_2 concentrations.

Trend analysis graphs are presented in Appendix A - Figure A.1 , with Time Variation plots shown in Figure A.2 and Figure A.3. Table 3.2 summarises the trend analysis.

Table 3.2 – Summary of Annual Mean Nitrogen Dioxide Trends Measured at Automatic (Continuous) Monitoring Sites

Monitoring Location	Site Type	Years Monitoring Conducted	Trend in NO_2 Concentrations
St Leonard's	Urban background	2008 to 2022	Decreasing

Monitoring Location	Site Type	Years Monitoring Conducted	Trend in NO_2 Concentrations
Currie	Suburban	2010 to 2022	Stable
Gorgie Road	Roadside	1999 to 2022	Decreasing
Salamander St.	Roadside	2009 to 2022	Slightly decreasing
Queensferry Rd	Roadside	2011 to 2022	Decreasing
St John's Road	Kerbside	2007 to 2022	Decreasing
Glasgow Road	Roadside	2012 to 2022	Decreasing
Nicolson Street	Kerbside	2018 to 2022	Decreasing

Notes:
Change in concentration
- ≥ 1 µg/m^3 per year = Increasing
- 0.9 µg/m^3 – 0.3 µg/m^3 per year = Slightly increasing
- 0.2 µg/m^3 - -0.2 µg/m^3 per year = Stable
- -0.3 µg/m^3 to -0.9 µg/m^3 per year = Slightly decreasing
- ≤ -1 µg/m^3 per year = Decreasing

Trend analysis of the annual mean NO_2 concentrations continues to show that at all sites, with the exception of Currie, are reporting a decrease. Nicolson Street shows the greatest average decrease of 7.6 µg/m^3 each year but this may be due to the relatively shorter monitoring period as the station was only commissioned in 2018.

Using the Time Variation tool within the Openair package, the variation in average NO_2 concentrations by the day of the week and hour of the day combined (top-most pane), diurnal variation (lower left pane), seasonal variation (lower middle pane) and day of the week (lower right pane) can be assessed. This has been carried out for each of the automatic monitoring sites, splitting the data by 2018 – 2022, during 2020 (being the year in which the most severe COVID-19 restrictions were implemented), and 2022.

The time variance plot further demonstrates that the decreasing trend of NO_2 concentrations continued in 2022. Even when compared with the 2020 monitoring data which is under the impact of Covid-19, the 2022 monitoring data still recorded a general lower or similar level of NO_2 average concentrations. In addition, this indicates that a

diurnal profile is still apparent in 2022, however at a less significant level than the average level of the recent five years.

Regression analysis of the average annual mean NO_2 concentration was also undertaken on the passive diffusion tube locations which have been in place for at least five years for each AQMA - a summary is shown in Table 3.3. Data used in the analysis, as well as graphs for each AQMA, is shown in Appendix A – Figure A.4, and Table A.5 to Table A.9. Data was corrected using the relevant bias adjustment factor for each year and taken from the point of measurement (not distance corrected).

It should be noted that where diffusion tube monitoring locations have been decommissioned, these have been removed from inclusion within the regression analysis. Additionally, whilst the monitoring network has increased, no additional tubes have been included as the overall average concentrations could change significantly due to changing sample sizes (i.e. if all new sites reported low concentrations this would pull the average down, even if the original exceedance areas have not shown much improvement). Where any new monitoring locations have reported at least five years of monitoring data, the Council will consider whether these should be included within the regression analysis, or whether any other changes to the selection of sites should be considered.

Table 3.3 – Summary of Annual Mean Nitrogen Dioxide Passive Diffusion Tube Trends within the AQMAs

Air Quality Management Area	Years Monitoring Conducted	Trend in NO_2 Concentrations
Central	2008 to 2022	Decreasing
Great Junction Street	2008 to 2022	Decreasing
St John's Road	2008 to 2022	Decreasing
Glasgow Road	2009 to 2022	Decreasing
Inverleith Row	2011 to 2022	Decreasing

Similarly, to that reported in the 2022 APR, there continues to be a decreasing trend of annual mean NO_2 concentrations observed since the deployment of the tubes in each of the AQMAs. This general downward trend remains to be in line with the national trend of

NO_2 pollution showing long-term improvement at urban background and roadside locations.

3.2.2 Particulate Matter (PM_{10})

Table A.10 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 18 µg/m^3. The table also shows data corrected in respect to Scottish Government Guidance Note May 2023, for PM_{10} data from Fidas 200 instruments. This has been applied to 2022 and previous years data where the Fidas was in operation.

Table A.11 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50 µg/m^3, not to be exceeded more than seven times per year. The data also shows 2022 results with daily means corrected in line with the aforementioned Guidance Note, May 2023.

During 2022, all automatic monitoring sites had annual data capture greater than 75%. Annualisation was not required at any automatic monitoring site.

All monitoring locations reported concentrations below the annual mean AQS objective for PM_{10} (18 µg/m^3) in 2022, with Salamander Street and St John's Road reporting the highest annual mean concentration of 15.7 µg/m^3.

St John's Road exceeded the 24-hour mean AQS objective (50 µg/m^3 not to be exceeded more than seven times a year), with 12 days of 24-hour means above 50 µg/m^3. The is part attributed to a pollution event at St Johns Road during road surface dressing works in the area, when a spillage of aggregate materials occurred on the main road. In the very dry weather that ensued, there was an increase in PM_{10} concentrations due to resuspended dust from the crushing of the material by vehicles using the road. Levels of PM_{10} concentrations remained high until the material was removed and the road swept.

At Salamander Street there were six days of 24-hour means above 50 µg/m^3 which is close to the objective. Monitoring will continue at Salamander Street where the Salamander Street AQMA was declared for exceedances of both the PM_{10} annual, and 24-hour mean AQS objectives. Emissions from traffic, industrial and fugitive sources from operations in and around Leith Docks are a contributory factor.

During late March, there was a particulate pollution episode with all stations showing high concentrations. Back trajectories indicated that between 21st to 24th March air masses arriving over the UK were transported over mainland Europe. The weather during this time was generally settled. Such conditions can reduce dispersion, allowing local emissions to build up and adding to the pollution transported from Europe resulting in a typical Springtime pollution event.

TRENDS

Trend analysis has been undertaken at all automatic monitoring locations using Excel where more than five years' worth of valid data is available. Excel has been used for regression analysis.

All continuous monitoring locations have sufficient data available to assess the trends in PM_{10} concentrations, with the exception of EDNS Nicolson Street and ED012 Tower Street, which both began monitoring in 2019.

Graphs are shown in Appendix A – Figure A.5. Table 3.4 summarises the trend analysis.

Table 3.4 – Summary of Annual Mean PM_{10} Trends Measured at Automatic (Continuous) Monitoring Sites

Monitoring Location	Site Type	Years Monitoring Conducted	Trend in PM_{10} Concentrations
St Leonard's	Urban background	2008 to 2022	Slightly decreasing
Currie	Suburban	2010 to 2022	Slightly decreasing
Salamander St.	Roadside	2009 to 2022	Slightly decreasing
Queensferry Rd	Roadside	2011 to 2022	Slightly decreasing
Glasgow Road	Roadside	2012 to 2022	Slightly decreasing
St John's Road	Roadside	2017 to 2022	Slightly increasing

Trend analysis of the annual mean PM_{10} concentrations shows that all sites, except St John's Road, reported a slight decrease in concentrations over their monitoring periods. It should be noted that the PM_{10} concentrations in 2020 and 2021 were during the COVID-19 pandemic, therefore lower PM_{10} concentrations were recorded during these two years. This may have an impact in the overall long-term trend. It is noted that the PM_{10} concentrations increased at all sites during 2022, except Salamander Street.

3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.12 in Appendix A compares the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years with the air quality objective of 10 µg/m^3.

During 2022, all monitoring sites had annual data capture greater than 75%. Annualisation was not required at any site.

At all sites, annual mean concentrations of $PM_{2.5}$ were well below the objective of 10µg/m^3, with a maximum annual mean concentration of 6.7 µg/m^3 being reported at Salamander Street and Nicolson Street. Annual mean $PM_{2.5}$ concentrations had increased at all continuous monitoring stations.

Trend analysis has been carried out for monitoring at St Leonards and St John's Road, as these are the only sites with more than five years' worth of monitoring data. The Excel simple regression statistical program was used. Graphs are shown in Appendix A - Figure A.6. Table 3.5 summarises the trend analysis.

Table 3.5 – Summary of Annual Mean $PM_{2.5}$ trends measured at Automatic (Continuous) Monitoring Sites

Monitoring Location	Site Type	Years Monitoring Conducted	Trend in $PM_{2.5}$ Concentrations
St Leonard's	Urban background	2008 to 2022	Slightly decreasing
St John's Road	Roadside	2017 to 2022	Stable

Trend analysis of the annual mean $PM_{2.5}$ concentrations shows St Leonard's is reporting a slight decrease of 0.4 µg/m^3 per year over the entire monitoring period, however St John's Road has remained relatively stable over the past five years.

3.2.4 Sulphur Dioxide (SO_2)

Table A.13 in Appendix A compares the ratified continuous monitored SO_2 concentrations for year 2022 with the air quality objectives for SO_2. There were no exceedances of the objectives, which is consistent with previous years.

3.2.5 Other Pollutants Monitored

The following pollutants were also monitored in the City of Edinburgh at the AURN urban background site at St Leonard's in 2022. The data is presented in Appendix A. These are not required as part of the LAQM regime but are part of specific UK-wide monitoring and compliance networks. The UK and Scottish Governments and Devolved Administrations are responsible for the review and assessment of these pollutants.

3.2.5.1 Ozone (O_3)

Table A.14 in Appendix A presents the ratified continuous monitored Ozone concentrations in 2022 with the air quality objectives. There was no 8-hour period in which the average concentrations exceeded 100 µg/m^3. This is below the AQS objective where the exceedance limit is 10 periods. It should be noted however, that the data capture was poor at 46% for the year period.

3.2.5.2 Polycyclic Aromatic Hydrocarbons (PAHs)

There are many different PAHs; however, a component used as a marker, is benzo (a) pyrene (BaP). The concentration monitored in 2022 at St Leonard's complies with the UK Objective. Monitoring is undertaken using a Digitel sampler. Concentrations since 2009 are shown in Table A.15.

4 New Local Developments

The Forth Green Freeport (FGF) was shortlisted by the Scottish and UK Governments on 13th January 2023, for freeport status in Scotland. Scottish Freeports are to be designed as a economic driver for promoting regeneration and high-quality job creation, promoting decarbonisation and a just transition to a net-zero economy and establishing hubs for global trade and investment. FGF aims to drive a transition to net zero by 2045 with a focus on renewables manufacturing, alternative fuels, carbon capture utilisation and storage and shipbuilding. The site includes the ports at Leith (Port of Leith), Edinburgh Airport, Grangemouth, Rosyth and Burntisland. A consortium of private and public sector partners is now working alongside both Governments to develop the Outline Business Case and Full Business Case. It is proposed that the governance arrangements include a new operating company, with a board who will be responsible for promoting and monitoring compliance with environmental standards, amongst other matters. With part of the freeport being within the Salamander Street AQMA and adjacent to the Great Junction Street AQMA, it will be necessary to consider relevant air quality impacts as plans develop.

In terms of planning applications for new local developments, short summarises of relevant submissions that included an air quality impact assessment (AQIA) are detailed below. Full details can be found on the Council's Planning Portal here; https://www.edinburgh.gov.uk/planningcomments using the planning reference numbers in bold below.

The Council has received a planning application for a mixed-use development comprising residential and commercial uses at Ocean Terminal, 98 Ocean Drive Edinburgh (**22/05599/FUL**). Air quality impacts will need to be considered as part of the development due to the close proximity of both the Salamander Street and Great Junction Street AQMA. The site is located approximately 100m from Leith docks and industrial and fugitive sources of pollution.

A student accommodation development including ground floor retail and commercial space was proposed at 35 Jock's Lodge, London Road In the Central AQMA (**23/00008/FUL**). An AQIA was submitted in support of the application which advised that the development would have a negligible impact upon local air quality during both the construction (road traffic) and operational phase, and the resulting effects were therefore

predicted to be not significant. A further AQIA addendum was submitted by the applicant which considered the impact of the development and potential for a street canyon being formed. The AQIA addendum advised that there will be predicted exceedances of the annual mean objectives at two modelled receptors at street level at the façade that will be the closest to London Road. However, the report advises that the air quality objectives do not apply because they are at ground floor commercial level and therefore higher concentrations are permitted. The concentrations at first floor level are all below the AQS and decrease rapidly with height. When a comparison is made between predicted concentrations at the proposed receptors without and with the canyon, the canyon effect gives higher results, but exposure would be limited to a maximum of 11 of the proposed bedrooms. The predicted levels for the annual mean concentrations are 37.5 µg/m3, 16.6 µg/m3 and 9.4 µg/m3 for NO_2, PM_{10} and $PM_{2.5}$ respectively. The results found that the highest predicted annual mean NO_2 concentration within the development was 40.9 µg/m^3 at ground floor receptor. The air quality modelling undertaken for London Road indicates that the predicted concentrations on the south side of the street has the potential to improve air quality. The Environmental Protection team did not support the application, however Planning Service considered on balance, that in order to ensure any exceedances of the annual mean air quality objectives do not impact adversely on new residents then it necessary to ensure that residential development is at first floor level and above only. This is currently proposed as part of the scheme, however a condition was recommended to be attached any consent to ensure that ground floor use of the building is retained for non-residential purposes. The application was ultimately refused at a Planning Committee Hearing in respect to other policy matters.

Early proposals for a potential residential development on land South of Cleikiminrig included 260 car parking spaces, which would see an additional 520 daily vehicle trips per day on the local road network (**22/03291/PPP**). Concerns were raised on air quality grounds and the fact that mitigation measures were not identified. As the plans are in the early stages of development, this advice is being considered by the developer and Planning Service.

A proposal for a hotel development, along with wider Masterplan proposals for enhanced public realm and improved active travel links/landscaping at Cameron Toll Shopping Centre was submitted to the local authority (**22/03151/FUL**). Based on the findings of a screening assessment carried out, it was concluded that a detailed AQIA is not required and that the proposed development will have a negligible impact upon the local air quality

during both the construction and operational phase, and the resulting effects are therefore predicted to be not significant. The application is however, still under consideration by the Council. It should also be noted that the precise energy strategy is not confirmed at this stage but is anticipated to focus on passive measures to minimise energy demand, with a proposal for thermal energy provided via electric heat pumps and no local combustion-based heating within the design. Should this change as the design evolve further air quality work would have to be undertaken.

Planning permission was granted for a replacement Liberton High School **(22/04134/FUL**) and consisting of a 'community campus' type development including non-educational facilities such as a health centre, café, library, flexible workspaces and a base for Police Scotland. The sports block will be retained. An Air Quality Assessment was submitted in support of the application which concluded that during the operational phase of the development there is the potential for air quality impacts as a result of traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the relevant screening criteria. Due to the low number of vehicle trips from the proposals, road traffic exhaust emission impacts were not predicted to be significant.

An AQIA accompanied a Planning in Principle application for a residential development at The Wisp (**22/03291/PPP**) south of Niddrie Mains Road and between the A6106 and the Fort Kinnaird retail park. The assessment was undertaken to demonstrate compliance with the relevant air quality objectives. Detailed dispersion modelling using the ADMS-Roads modelling software was undertaken to predict the concentrations of NO_2, PM_{10} and $PM_{2.5}$ due to emissions from road traffic in conjunction with existing background concentrations, at existing sensitive human receptors within the study area. No exceedances were predicted at any of the sensitive receptors and the significance of effect associated with the operational phase emissions of the development upon the local air quality was assessed to be not significant. The AQIA also included an assessment of impacts associated with dust emissions during the construction phase of the proposed development, highlighting that without specific site mitigation measured there were medium to low risks that might affect health. Good-practice mitigation measures and site-specific mitigation measures were outlined and recommended. In conclusion, the site was deemed appropriate for development within the context of the application with certain conditions relating to the need for detailed information at the full planning application stage. The AQIA would need to be updated. It was also urged that the developer

reconsider the car parking capacity and propose air quality mitigation measures, with the final submission.

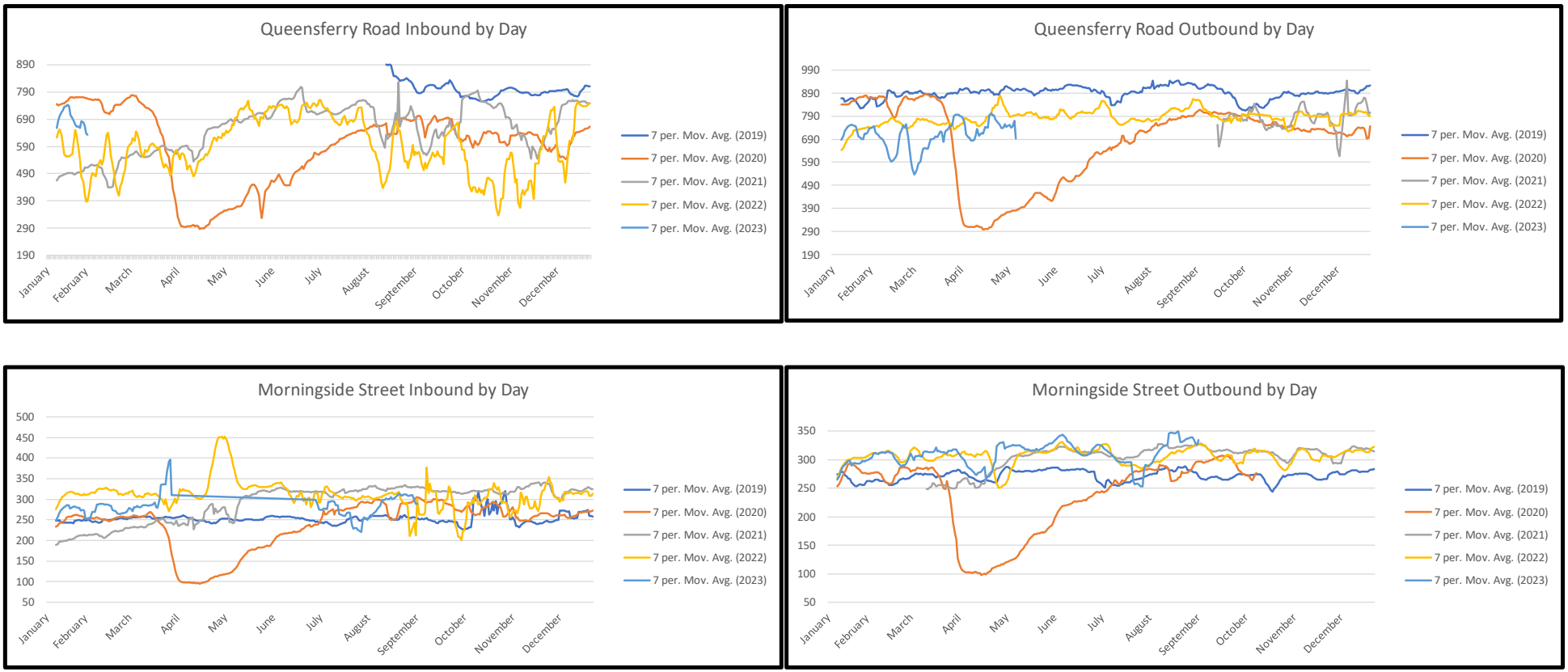
A hotel development and ancillary restaurant, bar, fitness suite etc was proposed at Ingliston Road, Newbridge (**22/04151/FUL**). There was potential for impact upon air quality with the site located adjacent to an AQMA for traffic related pollution. As such vehicles travelling to and from the hotel are likely to travel through the AQMA when accessing and egressing the hotel. For a 204-bedroom hotel the car parking allocation of 33 was considered reasonable, but concern was raised about with the number of proposed electric vehicle charging given location to the AQMA. As such, a condition was recommended on planning application to further minimise the impact of the development on air quality. Overall, it was determined that the proposal will not have a detrimental impact upon air quality in the locality, and the recommended conditions will ensure any impact is minimised.

4.1 Road Traffic Sources

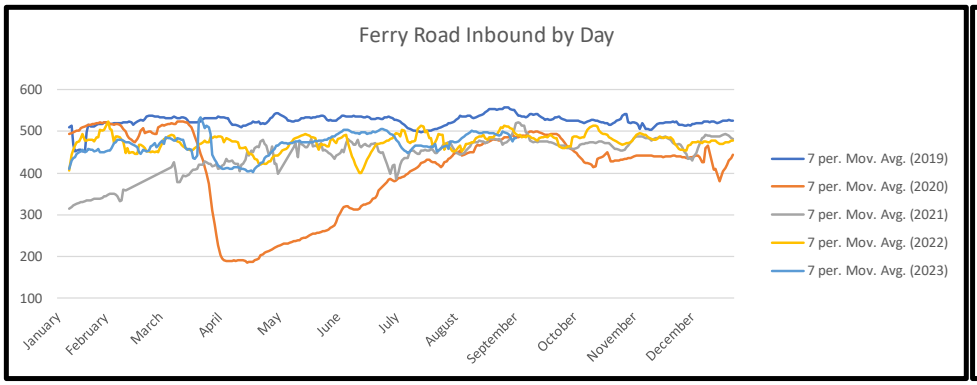
As a result of the Covid-19 pandemic and restrictions imposed the Scottish Government, it was observed that traffic levels had decreased substantially during 2020. This in turn resulted in a decrease in reported NO_2 concentrations in the urban settings. Traffic data from 2021 to 2023 indicates that traffic levels across Edinburgh are recovering from the impact of the COVID-19 pandemic and have remained relatively stable since the latter half year of 2021, below pandemic levels (at most locations). Figure 4.1 (overleaf) displays the inbound and outbound traffic counts from 2019 - 2022 at Queensferry Road, Morningside Road, Ferry Road, and Dalkeith Road in Edinburgh. Please note the data is from select sites across the city for indicative traffic monitoring purpose, obtained from SCOOT (traffic management) systems. A more detailed traffic survey is planned for Spring 2024, which will not only consider traffic flows but also fleet composition.

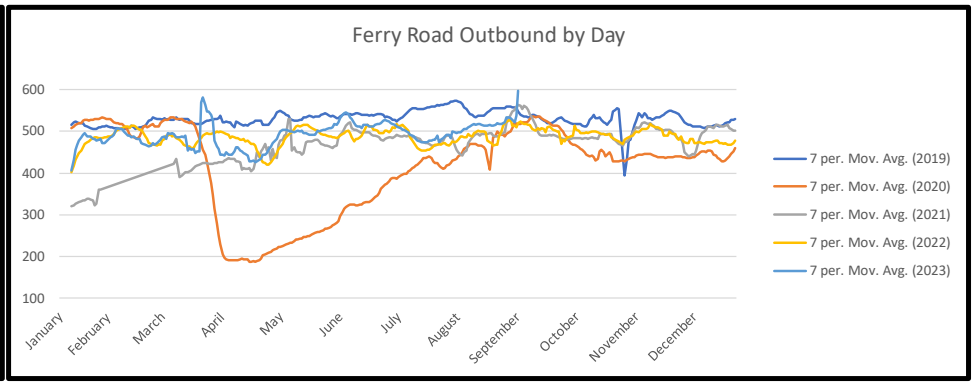
Part of the plans for the new freeport status at Port of Leith will include the creation of Scotland’s largest Renewable Energy Hub with a new riverside berth and the creation of 175 acres of adjacent land for logistics, marshalling and renewables manufacturing amongst other economic development opportunities. Changes in any traffic flows/patterns are not yet identified, however will be considered as plans develop.

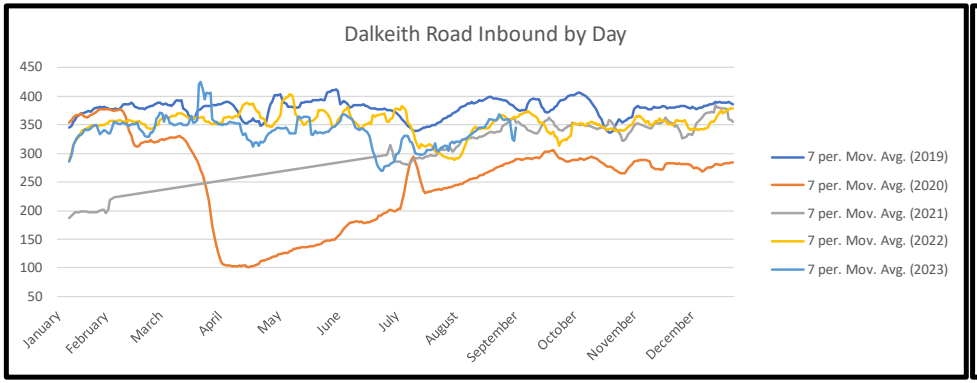
Figure 4.1 – Inbound and Outbound Traffic Counts across Edinburgh, 2019 to 2022

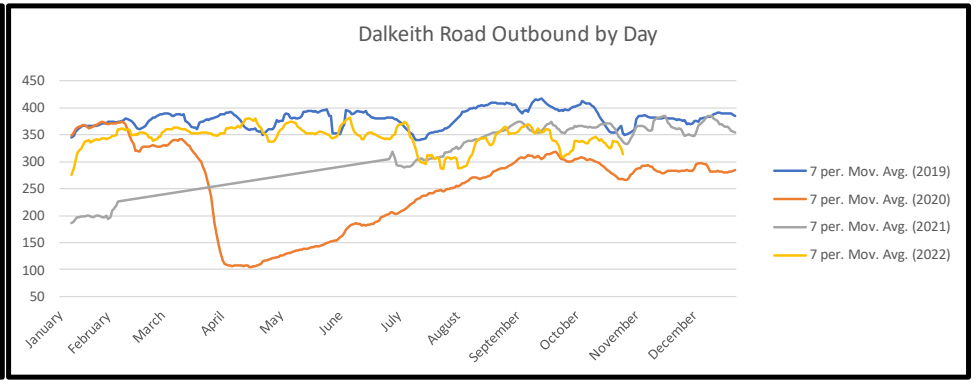


Note the above is Morningside Road, not Morningside Street


Ferry Road Inbound by Day
600
500
400
300
200
100
January
February
March
April
May
June
July
August
September
October
November
December
7 per. Mov. Avg. (2019)
7 per. Mov. Avg. (2020)
7 per. Mov. Avg. (2021)
7 per. Mov. Avg. (2022)
7 per. Mov. Avg. (2023)


Ferry Road Outbound by Day
600
500
400
300
200
100
January
February
March
April
May
June
July
August
September
October
November
December
7 per. Mov. Avg. (2019)
7 per. Mov. Avg. (2020)
7 per. Mov. Avg. (2021)
7 per. Mov. Avg. (2022)
7 per. Mov. Avg. (2023)


Dalkeith Road Inbound by Day
450
400
350
300
250
200
150
100
50
January
February
March
April
May
June
July
August
September
October
November
December
7 per. Mov. Avg. (2019)
7 per. Mov. Avg. (2020)
7 per. Mov. Avg. (2021)
7 per. Mov. Avg. (2022)
7 per. Mov. Avg. (2023)


Dalkeith Road Outbound by Day
450
400
350
300
250
200
150
100
50
January
February
March
April
May
June
July
August
September
October
November
December
7 per. Mov. Avg. (2019)
7 per. Mov. Avg. (2020)
7 per. Mov. Avg. (2021)
7 per. Mov. Avg. (2022)

4.2 Other Transport Sources

There are no new airports or locations where diesel or steam trains are regularly stationary or locations with a large number of movements of diesel locomotives.

There are plans for a new riverside berth at Port of Leith which will be capable of accommodating offshore wind installation shipping vessels. At this stage it is not known whether new operations with the freeport status will fundamentally change vessel numbers other than traffic to the new outer berth at Leith, which may be larger, if not an increase in actual vessel numbers. It is proposed that the berth will be *shore power ready*, so able to offer a “plug in” option to vessels.

At the existing port vessel movements increased between 2018 and 2020, however have since reduced by half, with movements by vessels approximately over 500 tonnes, being as 222 for 2022. Forth Ports, the harbour authority publishes statistics, the most recent of which can be obtained here; https://www.forthports.co.uk/wp-content/uploads/2023/09/PMSC-Annual-Review-2022.pdf

Considering the level of sensitive residential uses proposed and developed in the close vicinity to the docks, it will be important to continually review the operations at the docks to consider whether any monitoring is necessary.

4.3 Industrial Sources

In 2023, SEPA’s records show there was one substantial variation to a waste management licence at 2 Albert Road, Leith (NWH Group Limited) and no new PPC (Pollution Prevention and Control) permits or WML or substantial changes to PPCs.

Any new industrial processes as part of Port of Leith new freeport status will need to be considered in the context of the AQMAs in the area. This will involve ongoing review and assessment, if necessary.

4.4 Commercial and Domestic Sources

The City of Edinburgh Council issued Interim Planning Policy (2010) that discourages the installation of commercial biomass combustion installations in the city and intends to formalise similar policy with revision of the Air Quality Action Plan.

Combined Heat and Power (CHP) gas units are now commonly installed in new developments. Planning applicants are advised to submit a chimney height application if they are installing any CHP or heating that is bigger than 366Kw output. This will ensure they comply with the Clean Air Act and provide the Council with upfront details on the height of the proposed flue/chimney. It should be noted that the applicants don't always take this advice on board. However, an *informative* is normally attached to any planning permission given to ensure this is carried out.

If a new or proposed CHP/energy plant is bigger than 1MW (cumulative) the Council will request that the plant be fitted with secondary abatement technology.

The Pollution Prevention and Control (Scotland) Regulations 2012 were amended in December 2017 to transpose the requirements of the Medium Combustion Plant Directive (MCPD –Directive (EU) 2015/2193 of 25 November 2015 on the limitation of emissions of certain pollutants into the air from medium combustion plants). The purpose of the MCPD is to improve air quality. All combustion plant between 1 and 50 MW (net rated thermal input) require to register or have a permit from SEPA.

The primary CHP plant at the University of Edinburgh's Pleasance site was approved, installed and part-operational in 2013, hence does not have abatement technology. It comprises of a single, internal combustion, spark ignition engine with an electrical power output of 1.5Mwe and two 9MWth boilers supplying district heating and electric networks serving nearly 20 academic and student accommodation buildings. Screening of the plant indicated a contribution of NOx at the nearest receptor in excess of 70µg/m3. Although it is recognised the screening tool errs on the side of caution by considering the impact based on ground level release. Edinburgh University were considering options for the engine operation, particularly whether it can operate to a low NOx specification. The aforementioned MCP regulation will not apply to the installation. The Council commenced monitoring of NO_2 in January 2017 by installing passive diffusion tubes in the Pleasance and View Craigs area. Results in 2022 continue to show that concentration are in keeping with general background levels in the area.

Within the Council administration area, there are an increasing number of complaints about domestic burning. Most complaints about burning concern smoke from chimneys despite the entire city being a Smoke Control Area. The powers within the Clean Air Act 1993 have not however been able to be used formally to address such complaints – many of which, on investigation, are found to be caused by the use of "exempt fireplaces" or the

use of “authorised fuels”. Burning of fuels in such fireplaces still results in emissions which can be visible and cause odours which give rise to concerns about air quality. The revision to the Air Quality Action Plan will consider domestic burning emissions as a source.

The Council is currently developing a Local Heat and Energy Efficiency Strategies (LHEES) Delivery Plan. The Delivery Plan will set out proposed actions for the next five years in terms of decarbonising heat and improving energy efficiency in Edinburgh.

4.5 New Developments with Fugitive or Uncontrolled Sources

An application for planning permission at Bonnington Mains Quarry (22/02513/FUL) was approved for the development of a field for ancillary quarrying operations. An Environmental Impact Assessment was submitted with the application which included a dust and air quality section. The proposal was to include a site office, settlement ponds, aggregate processing and storage, including aggregate storage sheds and an asphalt plant (previously approved to be developed within the existing quarry boundary). Primary crushing and some stockpiling would continue to be undertaken within the quarry void, whilst secondary crushing, screening and stockpiling would be undertaken within the new Field Extension Area. No change was proposed to the extraction limit of 375,000 tonnes per annum. The fugitive dust and air quality assessment, undertaken by the applicant, concluded that with the recommended dust control measures in place, that it was unlikely that there would be significant dust impact on nearby sensitive receptors. Regarding air quality impact on the surrounding area, the new proposals would not create an additional air quality 'load' on the environment nor would Air Quality Objectives for PM_{10} and $PM_{2.5}$ be exceeded at nearby receptors.

The number of construction sites and planned construction is of some concern to the Council. Careful management of activity will be required especially within the City Centre where population exposure is significant. Through the Planning process developers are expected to manage dust during this phase of development.

Additional monitoring will need to be considered around the Salamander Street AQMA and specifically to the west of Leith docks. It remains that the scope of the City-Wide Detailed Assessment for Particles 2016 that led to the declaration of the AQMA, did not consider residential premises in this area, as there were no relevant receptors. With residential properties now developed and under construction, the feasibility of such monitoring in the

area is being considered, especially now the tram line construction works have been completed.

5 Planning Applications

City Plan 2030 is the name of the Council's proposed local development plan and once adopted, it will replace the current Local Development Plan 2016. A local development plan sets a strategy for future development proposals and policies and proposals which are used to determine planning applications in the City.

City Plan 2030 was approved at the Council's Planning Committee in November 2022, and it was submitted to the Scottish Government for examination on 9 December 2022. A team of reporters from the Scottish Government's Planning and Environmental Appeals Division (DPEA) has been appointed; and the development plan examination began in February 2023. The Hearing took place on 26-27 September 2023 and once the examination is complete, a Report of Examination is sent to the planning authority. The Council will then consider adopting the plan, including the recommendations of the Report which could include proposed modifications to the plan. After the examination, the City Plan 2030 should be adopted early to mid-2024.

The aims of proposed City Plan 2030 are to direct development to, and maximise the use of, brownfield land rather than greenfield land; delivering a network of 20-minute neighbourhoods and embedding a place-based approach to the creation of high-density, mixed-use communities linked better by active travel and public transport.

The strategy supports the strong direction of policy required by the Climate Change Act, the National Transport Strategy, Housing for 2040 and National Planning Framework 4.

Alignment with local air quality management and developing local and national air quality strategies will be crucial to ensuring a sustainable economic growth.

In terms of the existing Local Development Plan, Supplementary Planning Guidance published in August 2018 sets out the Council's approach to the assessment of infrastructure requirements associated with new development and a framework for the collection of developer contributions. The transport improvements identified by the studies and set out in the current LDP Action Programme include;

- the delivery of Edinburgh tram;
- access to bus services and park and ride facilities;
- improvements to the public realm and other pedestrian and cycle actions; and

- traffic management, including junction improvements.

The guidance aimed to ensure developers make a fair and realistic contribution to the delivery of necessary infrastructure provision and improvement associated with development.

As we approach the adoption of City Plan 2030, Planning is at the early stages of the preparation of City Plan 2040 which will be the next local development plan. It will be prepared under new legislation and guidance. The current evidence gathering stage will include the development of an Evidence Report and this will contain spatial information to support an understanding of places, their characteristics and needs including the principal physical and environmental characteristics. The Evidence Report will be informed, for example by studies on transport infrastructure capacity, transport planning, energy developments, greenhouse gas emissions and climate risks.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

Analysis of the monitoring results for **Nitrogen Dioxide (NO_2)** shows that during 2022, one monitoring location continues to report an exceedance of the annual mean AQS objective (40 µg/m^3). The maximum annual mean concentration of 41.3 µg/m^3 was recorded at diffusion tube site ID 64, located at Queensferry Road 550, outside of any AQMAs. Following NO_2 fall-off with distance calculation, annual mean NO_2 concentration at the nearest point of relevant exposure is predicted to be 28.4 µg/m^3.

Although there were no longer any travel restrictions during 2022 following the COVID-19 pandemic, NO_2 concentrations were similar to that in 2021 and generally have remained lower than pre-pandemic years.

Areas where relative annual mean concentration increased from 2021 are largely surrounding junctions or areas of known congestion. This is to be expected with traffic levels returning following the easing of the COVID-19 pandemic restrictions, however no exceedances have been reported as a result of this.

Whilst 2020 and 2021 monitoring data should be taken with a degree of caution, due to the COVID-19 pandemic, the Council will consider reducing the boundary of the Central AQMA once the implications of the recently implemented Low Emission Zone (LEZ) become evident. Operation (enforcement) of the LEZ is planned for June 2024.

All monitoring locations within the Great Junction Street AQMA have maintained compliance with the annual average NO_2 objective for the past five years. Prior to 2020, the monitoring locations indicated that annual mean NO_2 concentrations were decreasing. However, the Great Junction Street AQMA may be impacted by the recently commenced tram operations from City Centre to Newhaven (June 2023) and construction of the Low Traffic Neighbourhood LTN – Leith Connections (started in in April 2023). Further traffic restrictions with the LTN will also commence in October 2023. The Council therefore will consider revoking the Great Junction Street AQMA once the impact of these transport interventions is known.

Within respect to the Inverleith Row AQMA, there have now been five years of compliance with the annual mean NO_2 objective. The Council has received approval from Scottish Government and SEPA to revoke this AQMA due to the continued trend of decreasing NO_2 concentrations. The revocation order is planned to be published in January 2024.

No diffusion tube monitoring locations reported an annual mean concentration during 2022 in excess of 60 µg/m^3, suggesting that there have not been any exceedances of the hourly mean objective. There were no hourly concentrations reported in excess of 200 µg/m^3 at any of the automatic monitoring locations. As there continues to be no exceedance of the hourly mean objective at the St John's Road AQMA over the past 5 years, the AQMA is currently being amened in order to revoke its designation for exceedances of the short term NO_2 AQS objective. The revocation order is planned to be published in January 2024.

Overall, there continues to be a decreasing trend in annual mean NO_2 concentrations observed across Edinburgh, from both the automatic and non-automatic (passive diffusion tube) data. This general downward trend remains to be in line with the national trend of NO_2 pollution showing long-term improvement at urban background and roadside locations and is likely to be the result of lower traffic flows since the COVID-19 pandemic and a cleaner fleet. A detailed traffic survey is planned for Spring 2024, which will allow further analysis of these factors.

PM_{10} and **$PM_{2.5}$** monitoring data shows that for all locations in 2022, there were no exceedances of the annual mean AQS objectives. The PM_{10} and $PM_{2.5}$ annual mean concentrations increased at all the monitoring stations in 2022 from those in 2021 However, there is still a long-term decreasing trend in both PM_{10} and $PM_{2.5}$ concentrations reported across Edinburgh.

St John's Road exceeded the 24-hour mean AQS objective (50 µg/m3 not to be exceeded more than seven times a year), with 12 days of 24-hour means above 50 µg/m3. The is part attributed to a pollution event at St Johns Road during road surface dressing works.

At Salamander Street there were six days of 24-hour means above 50 µg/m^3 which is close to the objective. Emissions from traffic, industrial and fugitive sources from operations in and around Leith Docks are a contributory factor. Monitoring will continue at Salamander Street in the AQMA.

6.2 Conclusions relating to New Local Developments

The Forth Green Freeport (FGF), which includes the ports at Leith (Port of Leith) and Edinburgh Airport, was shortlisted by UK and Scottish Governments, for freeport status in Scotland. A consortium of private and public sector partners is now working to develop the Outline Business Case and Full Business Case. It is proposed that the governance arrangements include a new operating company, with a board who will be responsible for promoting and monitoring compliance with environmental standards, amongst other matters. With part of the freeport being within the Salamander Street AQMA and adjacent to the Great Junction Street AQMA, it will be necessary to consider relevant air quality impacts as plans develop, in terms of road, shipping, industrial and fugitive sources.

Additional monitoring will need to be considered around the Salamander Street AQMA and specifically to the west of Leith docks. It remains that the scope of the City-Wide Detailed Assessment for Particles 2016 that led to the declaration of the AQMA, did not consider residential premises in this area, as there were no relevant receptors. With residential properties now developed, under construction and proposed, the feasibility of such monitoring in the area is being considered. Tram construction was works have been completed.

Monitoring will need to continue in and adjacent to the Central and Glasgow Road AQMAs where new developments are planned or have permission.

6.3 Proposed Actions

The AQAP will focus on locations where exceedances or risk of exceedances of the NO_2 AQS objectives are identified, but it also includes strategic measures which will ensure concentrations of several pollutants are reduced across Edinburgh, even below current statutory objectives. This precautionary approach to public health is supported by the Cleaner Air for Scotland 2 Strategy (CAFS2) 2021 and assists in ensuring AQS objectives continue to be met.

Priority has been given to the ongoing development of the LEZ as the significant measure in the new Action Plan, to ensure operation of the scheme by June 2024, following the implementation of the scheme in May. The LEZ is a necessary intervention to contribute towards meeting AQS objectives, and also to help maintain them.

There are a number of actions and priorities the Council will prioritise in 2024. These are listed below.

Continue the delivery of the Low Emission Zone Scheme. This will include:

- Construction of road network changes to accommodate the operation of the LEZ boundary,
- Signage and lineage notifying drivers at LEZ boundary and approach roads,
- Enforcement infrastructure and systems,
- On-going public and stakeholder communication to ensure maximum early compliance,
- Continued engagement with the Scottish Government, Transport Scotland and the Scottish Environmental Protection Agency (SEPA) to monitor and evaluate the LEZ, and;
- Continue to update the LEZ City Model developed under the National Modelling Framework to reflect changes to the road network and fleet predictions from traffic surveys, which will form part of the scheme's overall monitoring and evaluation regime.

Finalise the Air Quality Action Plan. With the feedback analysis from the consultation process, a final AQAP will be produced and presented to the Council's Transport and Environment Committee for approval in February 2024, prior to submission to the Scottish Government.

Finalise the drafting of the Salamander Street Action Plan for PM_{10} for consultation once the steering group has reconvened.

Monitoring of Particulate Matter will be considered adjacent to the Salamander Street PM_{10} AQMA, considering the level of new sensitive residential uses in the area.

Finalise legal processes to revoke and amend Air Quality Management Areas to ensure revocation of the Inverleith Row AQMA and amendment of the St John's Road AQMA (removing the designation for exceedances of the short term (1-hour) NO_2 AQS objective).

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
ID4	Gorgie Road	Roadside	323121	672314	NO_2	Yes – Central AQMA	Chemiluminescent	0	2.5	2.63
ID5	St. John's Road	Kerbside	320101	672907	NO_2; PM_{10}; $PM_{2.5}$	Yes – St John's Road	Chemiluminescent; FIDAS 200	0	0.5	1.98
ID6	Currie High School	Suburban	317595	667909	NO_2; PM_{10}; $PM_{2.5}$	No	Chemiluminescent; TEOM; FIDAS 200	N/A	N/A	3.59 – NO_2; 3.24 – PM_{10}
ID7	St. Leonard's	Urban Background (AURN)	326265	673129	NO_2; PM_{10}; $PM_{2.5}$; O_3; CO; SO_2; PAH	No	Chemiluminescent; FIDAS 200; UV Adsorption; IR Adsorption; Digitalsamp	N/A	35	3.4 – NO_2, O_3, CO, SO_2, PAH; 3.2 – PM_{10}; 3.1 – $PM_{2.5}$
ID8	Salamander Street	Roadside	327615	676333	NO_2; PM_{10}; $PM_{2.5}$	Yes – Salamander Street	Chemiluminescent; TEOM; FIDAS 200	0	2.13	2.86
ID9	Queensferry Road	Roadside	318736	674930	NO_2; PM_{10}; $PM_{2.5}$	No	Chemiluminescent; FIDAS 200	6.5	1.7	2.96
ID10*	Glasgow Road	Roadside	313085	672656	NO_2; PM_{10}; $PM_{2.5}$	Yes – Glasgow Road	Chemiluminescent; TEOM; FIDAS 200	0	6	2.84

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
EDNS	Nicolson Street	Roadside	326151	673041	NO_2; PM_{10}; $PM_{2.5}$	Yes – Central AQMA	Chemiluminescent; FIDAS 200	2.2	2.9 (3)	2
ED012	Tower Street	Urban Industrial	327467	676537	PM_{10}; $PM_{2.5}$	Yes – Salamander Street	FIDAS 200	0	N/A	2

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

(3) Site ID with * represents changes to grid references following the 2022 review.

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Yes Y/No Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
NORTH-WEST LOCALITY										
13a	Deanhaugh Street	Roadside	324533	674655	NO_2	No	0.0	2.0	No	2.0
16	Glasgow Road 68/adj	Roadside	313028	672633	NO_2	Y- Glasgow Rd	4.4	1.8	No	2.0
15a*	Glasgow Road Facade/9	Roadside	312711	672674	NO_2	Y- Glasgow Rd	0.0	7.5	No	2.0
58i, 58ii	Glasgow Rd Newbridge	Roadside	312693	672670	NO_2	Y- Glasgow Rd	5.2	2.8	No	2.0
15	Glasgow Rd Newbridge	Roadside	312664	672672	NO_2	Y- Glasgow Rd	3.8	4.0	No	2.0
56*	Glasgow Road/Drumbrae	Roadside	319208	672917	NO_2	No	4.6	2.6	No	2.0
143a	Hamilton Place	Roadside	324699	674651	NO_2	No	0.0	2.1	No	2.0
41	Hillview Terrace	Background	320081	673232	NO_2	No	N/A	1.0	No	2.0
121	Inverleith Gardens 2	Roadside	324611	676007	NO_2	No	0.0	4.6	No	2.0
122	Inverleith Gardens 9	Roadside	324549	676002	NO_2	No	8.4	1.2	No	2.0
55c	Inverleith Row	Roadside	324686	675941	NO_2	Y- Inverleith Row	1.1	4.3	No	2.0
55i, 55ii	Inverleith Row/Ferry Rd	Roadside	324638	675993	NO_2	Y- Inverleith Row	0.0	4.7	No	2.0
129B	Queensferry Rd/Ramsey	Roadside	318601	674980	NO_2	No	0.0	11.7	No	2.0
63A	Queensferry Road 540	Roadside	318794	674959	NO_2	No	0.0	13.5	No	2.0
64	Queensferry Road 550	Roadside	318698	674955	NO_2	No	9.2	1.5	No	2.0
64b	Queensferry Road 550F	Roadside	318701	674964	NO_2	No	0.0	11.0	No	2.0
64a	Queensferry Road 552	Roadside	318698	674964	NO_2	No	0.0	10.5	No	2.0
69J	Queensferry Road 554	Roadside	318682	674957	NO_2	No	8.6	1.4	No	2.0
69I	Queensferry Rd/Lyle Ct	Roadside	318616	674968	NO_2	No	7.5	2.0	No	2.0
40	Queensferry Rd/Hillhouse	Roadside	322144	674497	NO_2	No	0.0	2.0	No	2.0
23	Roseburn Terrace	Kerbside	323007	673198	NO_2	Y- Central	2.3	0.2	No	2.0
22a	Roseburn Terrace (W)	Kerbside	322984	673189	NO_2	Y- Central	1.7	2.5	No	2.0
1d	St John's Road 131	Roadside	320096	672907	NO_2	Y-St Johns Rd	0.0	2.1	No	2.0
1b*	St John's Road IR	Roadside	320136	672194	NO_2	Y-St Johns Rd	0.0	2.0	No	2.0
1	St John's Road SB	Kerbside	320122	672917	NO_2	Y-St Johns Rd	1.8	0.5	No	2.0
SJ1	St John's Rd/Kaimes Rd	Kerbside	320571	672809	NO_2	Y-St Johns Rd	2.3	0.3	No	2.0
39	St John's/Victor Park Terr	Roadside	319677	672991	NO_2	Y-St Johns Rd	4.2	1.6	No	2.0
14	Trinity Crescent	Roadside	324896	676991	NO_2	No	4.0	2.0	No	2.0

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Yes Y/No Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
SOUTH-WEST LOCALITY										
76b	Angle Park Terrace 74	Roadside	323527	672285	NO_2	Y - Central	0.0	2.1	No	2.0
76	Angle Park /Harrison Rd	Roadside	323498	672263	NO_2	Y - Central	0.0	2.2	No	2.0
78a	14 Appin Street	Other	322783	671530	NO_2	No	0.0	65.0	No	2.0
80e	Balgreen Rd/Library	Roadside	322110	672268	NO_2	No	0.0	2.0	No	2.0
4a	Calder Road	Roadside	318894	670493	NO_2	No	5.0	12.0	No	2.0
145	1 Corstorphine High St	Roadside	319990	672707	NO_2	No	0.0	1.4	No	2.0
145a	Corstorphine P. School	Roadside	319834	672678	NO_2	No	0.0	2.0	No	2.0
79d	Dundee St/Yeaman Pl	Roadside	323926	672550	NO_2	Y - Central	0.0	2.3	No	2.0
79B	Fountainbridge 158	Roadside	324451	672864	NO_2	No	0.0	2.0	No	2.0
79	Fountainbridge/Tollcross	Roadside	324682	672939	NO_2	No	0.0	3.3	No	2.0
80	Gorgie Road - Delhaigh	Roadside	321967	671666	NO_2	Y - Central	0.0	2.6	No	2.1
18	Gorgie Road 8	Roadside	323477	672476	NO_2	Y - Central	0.0	2.4	No	2.0
80f	Gorgie Road No160	Roadside	323141	672345	NO_2	Y - Central	0.0	3.2	No	2.0
80g	Gorgie Road No173	Kerbside	323083	672311	NO_2	Y - Central	2.9	1.8	No	2.0
5	Gorgie Rd/Murieston Rd	Kerbside	323484	672478	NO_2	Y - Central	4.9	0.3	No	2.0
76d	Henderson Terrace	Roadside	323632	672449	NO_2	Y - Central	0.0	1.8	No	2.0
11a	Lanark Road 425	Roadside	320625	669070	NO_2	No	0.0	2.6	No	2.0
11	Lanark Road 610	Roadside	319527	668420	NO_2	No	3.7	1.5	No	2.0
77a	Slateford Road 51	Roadside	323167	672009	NO_2	Y - Central	0.0	2.3	No	2.0
77b	Slateford Road 93/95	Roadside	322999	671876	NO_2	Y – Central	0.0	2.6	No	2.0
80h	Wardlaw Street No2	Roadside	323065	672295	NO_2	Y – Central	0.0	5.0	No	2.0
NORTH-EAST LOCALITY										
29a	Bernard Street	Roadside	327137	676529	NO_2	Y- G.Junction St	0.0	2.1	No	2.0
29ci,29cii	Bernard Street/PS	Roadside	327135	676515	NO_2	Y- G.Junction St	0.0	2.1	No	2.0
29	Bernard Street	Roadside	327148	676507	NO_2	Y- G.Junction St	0.0	2.2	No	2.0
119	Bonnington Rd/GJ St	Roadside	326723	676136	NO_2	No	0.0	1.4	No	2.0
43	Broughton Road	Roadside	325513	675134	NO_2	No	0.0	2.0	No	2.0
9d	Commercial Street	Roadside	326477	676759	NO_2	Y- G.Junction St	0.0	2.6	No	2.0
9	Commercial Street 88	Roadside	326879	676626	NO_2	Y- G.Junction St	0.0	2.6	No	2.0
9a	Commercial /Portland Pl	Roadside	326430	676754	NO_2	Y- G.Junction St	3.9	1.5	No	2.0

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Yes Y/No Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
30f	Duke Street	Roadside	327106	675816	NO_2	No	0.0	2.2	No	2.0
25c	Easter Road 105/109	Roadside	326958	674770	NO_2	Y – Central	0.0	3.3	No	2.0
25e	Easter Road 198	Roadside	326999	674940	NO_2	No	0.0	4.0	No	2.0
25	Easter Road/CH shop	Roadside	326934	674503	NO_2	Y – Central	0.0	2.3	No	2.0
25b	Easter Rd/Rossie Place	Roadside	326950	674624	NO_2	Y – Central	0.0	3.3	No	2.0
18A	Ferry Road 203	Roadside	325873	676283	NO_2	No	2.4	1.6	No	2.0
53	Ferry Road/ 6 Bowhill Ter	Roadside	324726	676004	NO_2	Y Inverleith Row	1.6	4.6	No	2.0
45b	Ferry Road/1 Madeira St	Roadside	326359	676420	NO_2	No	0.0	8.6	No	2.0
45d*	Ferry Road/N.Junction St	Roadside	326503	676436	NO_2	Y- G.Junction St	0.0	3.1	No	2.0
30b	Great Junction Street 137	Roadside	326740	676138	NO_2	Y- G.Junction St	0.0	2.9	No	2.0
30c	Great Junction Street 14	Roadside	326925	675949	NO_2	Y- G.Junction St	0.0	2.8	No	2.0
30e	Great Junction/ Pirrie St	Roadside	326845	676015	NO_2	Y- G.Junction St	0.0	2.7	No	2.0
30	Great Junction Street/FV	Roadside	326884	675997	NO_2	Y- G.Junction St	0.0	2.8	No	2.0
21	Leith Walk/Brunswick Rd	Roadside	326413	674899	NO_2	Y – Central	0.0	4.5	No	2.0
20	Leith Walk/McDonald Rd	Roadside	326361	674882	NO_2	Y – Central	3.1	1.2	No	2.0
66	London Road/Cadzow Pl	Roadside	327468	674362	NO_2	Y - Central	0.0	5.7	No	2.0
67	London Road/Earlston Pl	Roadside	327190	674433	NO_2	Y – Central	0.0	2.7	No	2.0
81	London Rd/East Norton P	Roadside	326980	674446	NO_2	Y – Central	0.0	2.5	No	2.0
116	London Rd/Jocks Lodge	Roadside	328245	674166	NO_2	Y - Central	0.0	2.3	No	2.1
46	London Rd/Easter Road	Roadside	326944	674472	NO_2	Y – Central	0.0	5.6	No	2.0
69	London Rd/Wolseley Pl	Roadside	328272	674143	NO_2	Y – Central	0.0	2.6	No	2.0
70	London Rd/Wolseley Terr	Roadside	328337	674129	NO_2	Y – Central	0.0	4.6	No	2.0
32	Niddrie Mains Road 28	Kerbside	328889	671649	NO_2	No	4.7	2.6	No	2.0
9c	North Junction St nr 4	Roadside	326448	676710	NO_2	Y- G.Junction St	2.1	2.7	No	2.0
71	Portobello High Street	Roadside	330533	673850	NO_2	No	0.0	3.0	No	2.0
73d	Portobello Rd	Roadside	329917	674388	NO_2	No	0.0	3.7	No	2.0
30X	Rodney Street 31	Roadside	325443	674969	NO_2	No	0.0	2.4	No	2.0
51b	Salamander Street 29b	Roadside	327665	676331	NO_2	No	0.0	1.8	No	2.0
51c	Salamander St/Baltic St	Roadside	327476	676418	NO_2	No	0.0	2.3	No	2.0
90F	Southfield Place	Roadside	330123	673554	NO_2	No	0.0	5.0	No	2.0

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
SOUTH-EAST LOCALITY										
10B	Bank Street	Roadside	325598	673616	NO_2	No	0.0	2.7	No	2.0
98	Bernard Terrace	Roadside	326383	672622	NO_2	No	1.7	3.3	No	2.0
44	Broughton Street	Roadside	325918	674430	NO_2	No	0.0	3.4	No	2.0
8A	Brougham Street 9	Roadside	324967	672931	NO_2	No	0.0	3.7	No	2.0
6a	Bruntsfield Place 210	Roadside	324495	672035	NO_2	No	0.0	2.8	No	2.0
48G	Cannongate	Roadside	326173	673700	NO_2	No	0.0	2.6	No	2.0
48h	Canongate 206	Roadside	326271	673722	NO_2	No	0.0	2.8	No	2.0
94	Chester Street 29	Roadside	324071	673608	NO_2	No	0.0	6.9	No	2.0
138	Clerk Street 15	Roadside	326229	672789	NO_2	No	0.0	4.4	No	2.0
151	Comiston Road No.116	Roadside	324367	670473	NO_2	No	0.0	2.7	No	2.0
48f	Cowgate/St Mary's St	Roadside	326198	673587	NO_2	No	0.0	2.6	No	2.0
48c	Cowgate/Blackfriars	Roadside	326047	673519	NO_2	Y – Central	0.0	2.4	No	2.0
48a	Cowgate/Blair Street	Roadside	325929	673490	NO_2	Y – Central	0.0	3.2	No	2.0
48	Cowgate/Guthrie Street	Roadside	325881	673471	NO_2	Y – Central	0.0	4.5	No	2.0
48e	Cowgatehead 2	Roadside	325537	673405	NO_2	Y – Central	0.0	1.9	No	2.0
123*	Dalkeith Road 16/PS	Roadside	326629	672524	NO_2	No	0.0	2.2	No	2.0
93	Drumsheugh Gardens 20	Roadside	324326	673815	NO_2	No	0.0	8.9	No	2.0
97*	Dumbiedykes Road	Other	326565	673616	NO_2	No	0.0	N/A	No	2.0
128	Dundas Street 9	Roadside	325253	674362	NO_2	No	7.4	2.2	No	2.0
8C	Earl Grey Street 22	Roadside	324864	673008	NO_2	Y – Central	0.0	3.4	No	2.0
124*	East Preston/Dalkeith Rd	Roadside	326645	672481	NO_2	No	0.0	2.1	No	2.0
126	East Preston Street 32	Roadside	326588	672461	NO_2	No	0.0	6.4	No	2.0
125	East Preston Street 3A	Roadside	326483	672415	NO_2	No	0.0	4.2	No	2.0
10A	George IV Bridge	Roadside	325675	673358	NO_2	No	0.0	2.7	No	2.0
74f	George Street 112	Roadside	324880	673891	NO_2	Y – Central	0.0	6.8	No	2.0
37ai,37aii	Grassmarket 41	Roadside	325401	673340	NO_2	Y – Central	0.0	3.4	No	2.0
37b	Grassmarket 75	Roadside	325471	673369	NO_2	Y – Central	0.0	5.0	No	2.0
37c	Grassmarket/Thomsons Ct	Background	325397	673377	NO_2	No	0.0	22.8	No	2.0
75e	Gt Stuart Street 9	Roadside	324476	673967	NO_2	No	0.0	9.4	No	2.0
HT1	Haymarket Terrace (N)	Roadside	323985	673219	NO_2	Y – Central	0.0	3.7	No	2.0
HT2	Haymarket Terrace (S)	Kerbside	323787	673212	NO_2	Y – Central	1.8	0.5	No	2.0

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
10	Home Street/Tollcross	Roadside	324904	672906	NO_2	No	0.0	2.0	No	2.0
140	Hope Park Terr/Clerk St	Roadside	326323	672596	NO_2	Y - Central	3.5	1.3	No	2.0
17a	Hope Park Terrace/VS	Roadside	326312	672614	NO_2	Y - Central	0.0	5.0	No	2.0
34	India Street	Background	324790	674341	NO_2	No	N/A	2.5	No	2.1
8B	Lauriston Place	Roadside	324989	673016	NO_2	No	0.0	4.9	No	2.0
74g	Leith Street	Roadside	325897	674051	NO_2	Y – Central	0.0	3.7	No	2.0
92	Lord Russell Place 3-5	Roadside	326265	672441	NO_2	No	0.0	2.3	No	2.0
62A	Lothian Road 45	Roadside	324777	673425	NO_2	Y – Central	0.0	4.1	No	2.0
62B	Lothian Road 139	Roadside	324827	673138	NO_2	No	3.2	3.5	No	2.2
62X	Lothian Road/Rutland St	Roadside	324711	673635	NO_2	Y – Central	0.0	4.8	No	2.0
130	Market Street 6	Roadside	325804	673752	NO_2	No	0.0	4.5	No	2.0
38	Melville Drive	Roadside	325141	672733	NO_2	No	10.0	2.8	No	2.0
42	Midmar Drive	Background	325105	670511	NO_2	No	N/A	1.4	No	2.0
8	Morningside Road	Roadside	324542	671167	NO_2	No	0.0	3.7	No	2.0
79E	Morrison Crescent	Roadside	324170	672919	NO_2	No	0.0	15.0	No	2.0
62C	Morrison Street 91	Roadside	324541	673183	NO_2	Y – Central	0.0	2.4	No	2.0
49	Morrison Street	Roadside	324167	673249	NO_2	Y – Central	2.4	2.2	No	2.0
135b	Nicholson Street 59-61	Roadside	326099	673140	NO_2	Y – Central	0.0	2.8	No	2.0
136	Nicholson Street 92	Roadside	326164	673054	NO_2	Y - Central	0.0	5.7	No	2.0
95	Palmerston/Lansdowne	Kerbside	324105	673457	NO_2	No	5.0	0.8	No	2.0
96	Palmerston Place 7	Roadside	324190	673380	NO_2	No	0.0	6.3	No	2.0
27	North Bridge South	Roadside	325944	673670	NO_2	Y – Central	0.0	3.5	No	2.0
47	Princes Street (EB)	Roadside	325049	673791	NO_2	Y – Central	6.5	9.0	No	2.0
24	Princes Street/Mound	Kerbside	325397	673869	NO_2	Y – Central	10.2	1.0	No	2.0
33b	Queen Street No66	Roadside	324837	674053	NO_2	Y – Central	0.0	7.0	No	2.0
33a	Queen Street/Albyn Pl	Roadside	324817	674077	NO_2	Y – Central	0.0	6.0	No	2.0
33	Queen St/North David St	Roadside	325467	674229	NO_2	Y – Central	0.0	6.5	No	2.0
SH1	Shandwick Place Hostel	Roadside	324513	673556	NO_2	Y – Central	0.0	2.5	No	2.0
144	South Bridge 59	Roadside	326020	673370	NO_2	Y – Central	0.0	2.3	No	2.0
142	South Clerk Street 41a	Roadside	326367	672554	NO_2	Y - Central	0.0	2.0	No	2.0
141	South Clerk Street 84	Roadside	326383	672472	NO_2	Y – Central	0.0	2.6	No	2.0
75d	St Colme Street/4	Roadside	324646	674025	NO_2	No	0.0	6.2	No	2.0
28e	St Leonards Street 145a	Roadside	326559	672610	NO_2	No	0.0	3.4	No	2.0

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with a Continuous Analyser?	Tube Height (m)
10c	Teviot Place 14	Roadside	325754	673144	NO_2	No	0.0	2.5	No	2.0
3b	Torphichen Place 1	Roadside	324277	673309	NO_2	Y – Central	0.0	4.8	No	2.0
3	Torphichen Place	Roadside	324258	673295	NO_2	Y – Central	0.0	2.3	No	2.0
162	Viewcraig Gardens 19	Other	326443	673433	NO_2	No	4.9	2.4	No	2.0
2	W.Maitland/Palmerston	Kerbside	324193	673346	NO_2	No	5.2	0.5	No	2.0
28d	West Port 42	Roadside	325203	673250	NO_2	Y – Central	0.0	2.7	No	2.0
28b	West Port 62	Roadside	325166	673242	NO_2	Y – Central	0.0	1.4	No	2.0
28c	West Port Opp 50	Roadside	325184	673261	NO_2	Y - Central	0.0	3.0	No	2.0
127	West Preston Street 17	Roadside	326376	672421	NO_2	No	0.0	6.2	No	2.0
91	West Preston Street 40	Roadside	326309	672397	NO_2	No	0.0	4.0	No	2.0
36	York Place	Roadside	325828	674362	NO_2	No	2.7	5.5	No	2.0
CO-LOCATED TUBES										
CL1, CL2, CL3	Queensferry Rd	Roadside	318736	674930	NO_2	No	6.5	1.7	Yes	2.0
CL4, CL5, CL6	Gorgie Road	Roadside	323121	672314	NO_2	Y – Central	0.0	6.0	Yes	2.4
CL7, CL8, CL9	Salamander St	Roadside	327615	676333	NO_2	No	0.0	2.1	Yes	2.4
CL10, CL11, CL12	Glasgow Rd	Roadside	313103	672663	NO_2	Y - Glasgow Road	0.0	6.0	Yes	2.4
CL13, CL14, CL15	St Johns Road	Kerbside	320101	672907	NO_2	Y - St John's Road	0.0	0.5	Yes	1.8
CL16, CL17, CL18	Nicolson Street	Roadside	326151	673041	NO_2	Y - Central	2.2	2.9	Yes	1.8

Notes for Table: *Overleaf*

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

(3) Site ID with * represents changes to grid references following the 2022 Diffusion Tube review.

Table A.3 – Annual Mean NO_2 Monitoring Results ($\mu g/m^3$)

Site ID	Site Name	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
ID4	Gorgie Road	Roadside	Automatic	83.5	83.5	28.0	27.0	18.4	18.2	17.4
ID5	St. John's Road	Kerbside	Automatic	99.7	99.7	**43.0**	**41.9**	25.6	28.7	29.2
ID6	Currie High School	Suburban	Automatic	98.9	98.9	8.0	9.9	5.3	5.1	4.8
ID7	St. Leonard's	Background	Automatic	97.8	97.8	18.0	20.8	13.7	13.7	13.0
ID8	Salamander Street	Roadside	Automatic	95.5	95.5	25.0	24.3	19.5	22.1	17.8
ID9	Queensferry Road	Roadside	Automatic	98.1	98.1	**52.0**	36.9	25.8	29.2	25.9
ID10	Glasgow Road	Roadside	Automatic	68.3	68.3	26.0	25.2	15.4	16.6	16.8
EDNS	Nicolson Street	Roadside	Automatic	99.7	99.7	**51.0**	**50.4**	27.2	28.5	23.8
North-West Locality										
13a	Deanhaugh Street	Roadside	Passive	90.4	90.4	26.0	22.1	15.4	16.3	15.7
16	Glasgow Road 68	Roadside	Passive	100.0	100.0	**46.0**	**40.9**	26.7	27.9	27.7
15a	Glasgow Road 9	Roadside	Passive	90.4	90.4	38.0	32.0	17.3	21.5	25.3
58i, 58ii	Glasgow Rd Newbridge	Roadside	Passive	100.0	100.0	**52.0**	**46.0**	29.2	30.7	34.8
15	Glasgow Rd Newbridge	Roadside	Passive	75.0	75.0	**44.0**	39.2	24.3	26.6	31.8
56	Glasgow Road/Drumbrae	Roadside	Passive	84.6	84.6	32.0	25.3	14.3	20.4	17.4
143a	Hamilton Place	Roadside	Passive	90.4	90.4	27.0	25.0	26.0	19.2	16.5
41	Hillview Terrace	Background	Passive	100.0	100.0	18.0	16.7	11.3	12.9	10.9
121	Inverleith Gardens 2	Roadside	Passive	92.3	92.3	-	-	24.1	25.3	24.2
122	Inverleith Gardens 9	Roadside	Passive	92.3	92.3	-	-	27.1	26.2	24.5
55c	Inverleith Row	Roadside	Passive	100.0	100.0	24.0	23.9	16.1	20.2	17.7
55i, 5ii	Inverleith Row/Ferry Rd	Roadside	Passive	100.0	100.0	34.0	33.4	26.2	27.3	26.2
129B	Queensferry Rd/Ramsey	Roadside	Passive	100.0	100.0	-	-	13.6	16.0	15.4
63A	Queensferry Road 540	Roadside	Passive	100.0	100.0	-	18.0	16.6	16.4	16.2
64	Queensferry Road 550	Roadside	Passive	92.3	92.3	**62.0**	**56.9**	38.4	38.1	**41.3**
64b	Queensferry Road 550F	Roadside	Passive	100.0	100.0	32.0	27.2	20.9	20.7	21.2
64a	Queensferry Road 552	Roadside	Passive	100.0	100.0	30.0	26.4	-	20.1	19.6
69J	Queensferry Road 554	Roadside	Passive	100.0	100.0	-	-	35.0	38.5	37.3
69I	Queensferry Rd/Lyle Ct	Roadside	Passive	82.7	82.7	-	**40.3**	28.2	31.6	31.4
40	Queensferry Rd/Hillhouse	Roadside	Passive	100.0	100.0	30.0	24.7	19.1	17.4	18.9
23	Roseburn Terrace	Kerbside	Passive	67.3	67.3	37.0	35.3	21.0	24.9	21.6
22a	Roseburn Terrace (W)	Kerbside	Passive	50.0	50.0	**42.0**	36.5	23.1	25.9	23.9
1d	St John's Road 131	Roadside	Passive	100.0	100.0	**40.0**	37.7	28.8	29.1	29.3

Site ID	Site Name	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
1b	St John's Road IR	Roadside	Passive	100.0	100.0	28.0	27.3	17.4	20.8	19.2
1	St John's Road SB	Kerbside	Passive	100.0	100.0	29.0	31.8	16.9	20.4	18.9
SJ1	St John's Rd/Kaimes Rd	Kerbside	Passive	92.3	92.3	31.0	27.7	17.7	19.1	19.0
39	St John's/Victor Park	Roadside	Passive	100.0	100.0	32.0	30.4	19.1	21.6	21.0
14	Trinity Crescent	Roadside	Passive	100.0	100.0	24.0	20.4	17.6	16.1	15.3
South-West Locality										
76b	Angle Park Terrace 74	Roadside	Passive	100.0	100.0	**40.0**	33.8	25.6	24.3	21.1
76	Angle Park /Harrison Rd	Roadside	Passive	100.0	100.0	37.0	33.2	22.9	25.3	20.2
78a	14 Appin Street	Other	Passive	100.0	100.0	-	-	-	-	9.4
80e	Balgreen Rd/Library	Roadside	Passive	92.3	92.3	31.0	28.0	18.5	20.7	19.5
4a	Calder Road	Roadside	Passive	50.0	50.0	24.0	22.7	15.4	16.5	13.0
145	1 Corstorphine High St	Roadside	Passive	92.3	92.3	-	-	-	-	16.7
145a	Corstorphine P. School	Roadside	Passive	100.0	100.0	-	-	-	-	13.6
79d	Dundee St/Yeaman Pl	Roadside	Passive	84.6	84.6	**40.0**	34.5	24.4	22.7	22.6
79B	Fountainbridge 158	Roadside	Passive	100.0	100.0	-	-	-	20.3	17.6
79	Fountainbridge/Tollcross	Roadside	Passive	57.7	57.7	28.0	29.4	18.6	17.7	17.5
80	Gorgie Road - Delhaigh	Roadside	Passive	82.7	82.7	37.0	33.3	20.7	26.3	24.0
18	Gorgie Road 8	Roadside	Passive	100.0	100.0	35.0	33.2	22.6	23.3	20.4
80f	Gorgie Road No160	Roadside	Passive	92.3	92.3	35.0	32.5	20.0	22.3	20.5
80g	Gorgie Road No173	Kerbside	Passive	100.0	100.0	39.0	31.1	21.8	24.2	21.4
5	Gorgie Rd/Murieston Rd	Kerbside	Passive	100.0	100.0	**42.0**	33.3	25.6	23.7	20.8
76d	Henderson Terrace	Roadside	Passive	100.0	100.0	33.0	28.6	23.0	21.9	20.7
11a	Lanark Road 425	Roadside	Passive	100.0	100.0	33.0	27.5	20.1	18.3	17.7
11	Lanark Road 610	Roadside	Passive	100.0	100.0	20.0	20.5	13.7	13.7	10.7
77a	Slateford Road 51	Roadside	Passive	100.0	100.0	32.0	28.2	21.4	21.5	19.4
77b	Slateford Road 93/95	Roadside	Passive	82.7	82.7	36.0	34.2	27.2	23.1	20.3
80h	Wardlaw Street No2	Roadside	Passive	82.7	82.7	28.0	27.2	17.5	21.0	16.2
North-East Locality										
29a	Bernard Street	Roadside	Passive	100.0	100.0	31.0	27.1	25.0	23.9	20.8
29ci,29cii	Bernard Street/PS	Roadside	Passive	100.0	100.0	37.0	35.4	28.4	28.5	26.7
29	Bernard Street	Roadside	Passive	100.0	100.0	30.0	25.9	21.7	21.2	20.9
119	Bonnington Rd/GJ St	Roadside	Passive	100.0	100.0	-	-	18.2	20.8	18.7
43	Broughton Road	Roadside	Passive	100.0	100.0	34.0	29.4	22.0	22.7	21.0

Site ID	Site Name	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
9d	Commercial Street	Roadside	Passive	92.3	92.3	35.0	33.6	28.3	28.2	24.9
9	Commercial Street 88	Roadside	Passive	100.0	100.0	29.0	26.3	20.6	25.3	21.0
9a	Commercial /Portland Pl	Roadside	Passive	100.0	100.0	37.0	32.8	29.2	27.6	26.5
30f	Duke Street	Roadside	Passive	92.3	92.3	35.0	32.3	26.9	28.0	21.6
25c	Easter Road 105/109	Roadside	Passive	100.0	100.0	33.0	33.2	27.0	32.1	28.0
25e	Easter Road 198	Roadside	Passive	100.0	100.0	28.0	25.5	17.9	21.9	20.1
25	Easter Road/CH shop	Roadside	Passive	92.3	92.3	37.0	33.2	25.8	29.1	25.5
25b	Easter Rd/Rossie Place	Roadside	Passive	61.5	61.5	32.0	30.1	21.5	24.9	21.6
18A	Ferry Road 203	Roadside	Passive	100.0	100.0	-	31.8	23.1	26.6	25.4
53	Ferry Road/Bowhill Ter	Roadside	Passive	100.0	100.0	31.0	28.8	22.2	22.5	22.3
45b	Ferry Road/1 Madeira St	Roadside	Passive	100.0	100.0	-	-	19.5	20.6	22.0
45d	Ferry Road/N.Junction	Roadside	Passive	100.0	100.0	32.0	31.2	25.9	25.7	24.7
30b	Great Junction Street 137	Roadside	Passive	92.3	92.3	32.0	30.8	19.7	24.2	23.5
30c	Great Junction Street 14	Roadside	Passive	100.0	100.0	37.0	33.1	22.7	25.1	22.6
30e	Great Junction/ Pirrie St	Roadside	Passive	92.3	92.3	34.0	33.3	20.2	28.0	21.1
30	Great Junction Street/FV	Roadside	Passive	100.0	100.0	37.0	32.8	23.8	28.1	23.9
21	Leith Walk/Brunswick Rd	Roadside	Passive	48.1	48.1	-	30.6	20.0	23.8	20.2
20	Leith Walk/McDonald Rd	Roadside	Passive	84.6	84.6	39.0	37.9	-	-	23.2
66	London Road/Cadzow Pl	Roadside	Passive	92.3	92.3	28.0	29.8	22.5	23.7	24.9
67	London Road/Earlston Pl	Roadside	Passive	92.3	92.3	**42.0**	36.9	25.5	30.1	27.4
81	London Rd/East Norton P	Roadside	Passive	90.4	90.4	**43.0**	**50.0**	**44.0**	**40.6**	29.9
116	London Rd/Jocks Lodge	Roadside	Passive	84.6	84.6	-	-	21.6	31.0	25.4
46	London Rd/Easter Road	Roadside	Passive	100.0	100.0	37.0	34.9	22.8	27.1	22.6
69	London Rd/Wolseley Pl	Roadside	Passive	100.0	100.0	38.0	35.4	39.3	27.8	26.3
70	London Rd/Wolseley Terr	Roadside	Passive	100.0	100.0	**40.0**	37.6	32.3	32.6	34.1
32	Niddrie Mains Road 28	Kerbside	Passive	80.8	80.8	28.0	26.4	20.5	20.6	21.9
9c	North Junction St nr 4	Roadside	Passive	92.3	92.3	28.0	26.0	17.9	21.4	20.1
71	Portobello High Street	Roadside	Passive	100.0	100.0	29.0	25.1	27.1	22.6	21.6
73d	Portobello Rd	Roadside	Passive	100.0	100.0	34.0	31.4	24.4	23.3	23.4
30X	Rodney Street 31	Roadside	Passive	90.4	90.4	-	25.2	18.0	19.7	16.2
51b	Salamander Street 29b	Roadside	Passive	90.4	90.4	-	-	20.4	24.0	23.4
51c	Salamander St/Baltic St	Roadside	Passive	92.3	92.3	31.0	26.5	22.4	21.4	23.5
90F	Southfield Place	Roadside	Passive	63.5	63.5	-	-	-	21.4	19.3

Site ID	Site Name	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
South-East Locality										
10B	Bank Street	Roadside	Passive	84.6	84.6	-	36.5	24.1	28.0	30.8
98	Bernard Terrace	Roadside	Passive	84.6	84.6	-	-	-	-	18.2
44	Broughton Street	Roadside	Passive	100.0	100.0	30.0	27.4	23.3	23.8	19.5
8A	Brougham Street 9	Roadside	Passive	100.0	100.0	-	37.7	26.7	23.4	25.1
6a	Bruntsfield Place 210	Roadside	Passive	48.1	48.1	31.0	25.4	17.4	18.4	15.6
48G	Cannongate	Roadside	Passive	92.3	92.3	-	**42.7**	28.0	29.2	27.2
48h	Canongate 206	Roadside	Passive	90.4	90.4	-	-	-	23.9	28.2
94	Chester Street 29	Roadside	Passive	100.0	100.0	-	-	19.6	18.1	18.7
138	Clerk Street 15	Roadside	Passive	90.4	90.4	37.0	33.4	27.3	23.7	20.4
151	Comiston Road No.116	Roadside	Passive	92.3	92.3	25.0	21.2	17.3	15.8	15.7
48f	Cowgate/St Mary's St	Roadside	Passive	100.0	100.0	39.0	34.6	24.0	25.1	23.1
48c	Cowgate/Blackfriars	Roadside	Passive	75.0	75.0	34.0	36.0	31.0	24.0	24.4
48a	Cowgate/Blair Street	Roadside	Passive	75.0	75.0	36.0	38.2	21.5	22.7	20.9
48	Cowgate/Guthrie Street	Roadside	Passive	75.0	75.0	33.0	31.7	21.9	19.6	21.4
48e	Cowgatehead 2	Roadside	Passive	75.0	75.0	37.0	29.6	23.6	26.1	24.5
123	Dalkeith Road 16/PS	Roadside	Passive	75.0	75.0	-	-	13.8	13.9	16.6
93	Drumsheugh Gardens	Roadside	Passive	100.0	100.0	25.0	23.0	18.1	17.9	14.9
97	Dumbiedykes Road	Other	Passive	100.0	100.0	-	-	13.0	15.4	15.6
128	Dundas Street 9	Roadside	Passive	80.8	80.8	-	-	20.4	18.9	18.3
8C	Earl Grey Street 22	Roadside	Passive	92.3	92.3	-	-	-	24.0	22.4
124	East Preston/Dalkeith Rd	Roadside	Passive	73.1	73.1	-	-	18.4	15.9	17.0
126	East Preston Street 32	Roadside	Passive	90.4	90.4	-	-	14.6	14.9	13.8
125	East Preston Street 3A	Roadside	Passive	100.0	100.0	-	-	15.5	14.6	14.3
10A	George IV Bridge	Roadside	Passive	90.4	90.4	-	27.7	22.8	22.3	24.8
74f	George Street 112	Roadside	Passive	100.0	100.0	30.0	25.7	19.5	21.3	19.1
37ai,37aii	Grassmarket 41	Roadside	Passive	82.7	82.7	**56.0**	**52.5**	33.4	23.4	25.0
37b	Grassmarket 75	Roadside	Passive	92.3	92.3	37.0	38.8	21.7	21.1	22.2
37c	Grassmarket/Thomsons Ct	Background	Passive	100.0	100.0	26.0	25.1	17.9	15.9	16.2
75e	Gt Stuart Street 9	Roadside	Passive	100.0	100.0	24.0	19.7	15.3	15.0	15.1
HT1	Haymarket Terrace (N)	Roadside	Passive	100.0	100.0	31.0	36.5	22.7	25.1	24.7
HT2	Haymarket Terrace (S)	Kerbside	Passive	92.3	92.3	**41.0**	**40.8**	22.9	26.2	29.3
10	Home Street/Tollcross	Roadside	Passive	100.0	100.0	38.0	30.7	24.5	21.2	19.1

Site ID	Site Name	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2022 (%) [2]	2018	2019	2020	2021	2022
140	Hope Park Terr/Clerk St	Roadside	Passive	90.4	90.4	32.0	26.5	24.7	22.7	20.5
17a	Hope Park Terrace/VS	Roadside	Passive	100.0	100.0	31.0	28.7	23.9	20.8	22.6
34	India Street	Background	Passive	92.3	92.3	19.0	17.7	13.8	13.5	13.2
8B	Lauriston Place	Roadside	Passive	92.3	92.3	-	31.2	24.1	24.4	21.8
74g	Leith Street	Roadside	Passive	71.2	71.2	-	**44.4**	27.3	31.2	26.8
92	Lord Russell Place 3-5	Roadside	Passive	92.3	92.3	-	-	18.7	16.9	15.5
62A	Lothian Road 45	Roadside	Passive	84.6	84.6	-	**56.6**	31.3	33.9	24.2
62B	Lothian Road 139	Roadside	Passive	76.9	76.9	-	**43.9**	26.3	30.7	29.3
62X	Lothian Road/Rutland St	Roadside	Passive	92.3	92.3	-	**46.1**	30.6	30.5	35.1
130	Market Street 6	Roadside	Passive	100.0	100.0	-	-	25.7	26.5	29.0
38	Melville Drive	Roadside	Passive	90.4	90.4	26.0	22.8	18.6	15.8	17.4
42	Midmar Drive	Background	Passive	90.4	90.4	15.0	12.6	8.1	9.5	8.4
8	Morningside Road	Roadside	Passive	100.0	100.0	25.0	21.9	15.8	15.4	15.6
79E	Morrison Crescent	Roadside	Passive	100.0	100.0	-	-	-	18.7	15.6
62C	Morrison Street 91	Roadside	Passive	100.0	100.0	-	**42.2**	29.4	25.0	23.5
49	Morrison Street	Roadside	Passive	84.6	84.6	37.0	37.2	26.1	27.0	23.2
135b	Nicholson Street 59-61	Roadside	Passive	84.6	84.6	-	37.8	36.9	34.4	28.5
136	Nicholson Street 92	Roadside	Passive	82.7	82.7	37.0	32.2	20.8	23.6	20.0
95	Palmerston/Lansdowne	Kerbside	Passive	59.6	59.6	-	-	19.1	19.0	17.5
96	Palmerston Place 7	Roadside	Passive	100.0	100.0	-	-	24.9	26.1	22.5
27	North Bridge South	Roadside	Passive	84.6	84.6	**40.0**	**40.6**	23.0	28.8	23.9
47	Princes Street (EB)	Roadside	Passive	92.3	92.3	36.0	36.2	26.4	26.0	25.2
24	Princes Street/Mound	Kerbside	Passive	84.6	84.6	**53.0**	**53.2**	29.1	34.4	36.4
33b	Queen Street No66	Roadside	Passive	100.0	100.0	35.0	29.2	30.0	22.2	22.5
33a	Queen Street/Albyn Pl	Roadside	Passive	100.0	100.0	33.0	28.7	19.7	23.7	22.9
33	Queen St/North David	Roadside	Passive	100.0	100.0	**42.0**	36.0	27.5	23.5	26.7
SH1	Shandwick Place Hostel	Roadside	Passive	84.6	84.6	**40.0**	37.0	28.8	29.7	27.5
144	South Bridge 59	Roadside	Passive	90.4	90.4	**41.0**	38.1	27.0	28.1	27.6
142	South Clerk Street 41a	Roadside	Passive	92.3	92.3	35.0	29.8	21.4	21.9	21.1
141	South Clerk Street 84	Roadside	Passive	100.0	100.0	37.0	32.9	22.9	22.9	20.6
75d	St Colme Street/4	Roadside	Passive	100.0	100.0	27.0	22.9	17.5	19.5	16.7
28e	St Leonards Street 145a	Roadside	Passive	92.3	92.3	-	-	-	-	19.5
10c	Teviot Place 14	Roadside	Passive	100.0	100.0	-	28.2	19.6	22.4	21.3
3b	Torphichen Place 1	Roadside	Passive	100.0	100.0	**43.0**	**40.0**	30.0	28.9	29.7
3	Torphichen Place	Roadside	Passive	92.3	92.3	**43.0**	**40.5**	29.1	31.1	33.3

Site ID	Site Name	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
162	Viewcraig Gardens 19	Other	Passive	65.4	65.4	-	-	12.0	13.3	11.0
2	W.Maitland/Palmerston	Kerbside	Passive	100.0	100.0	**50.0**	**45.8**	34.2	35.4	35.6
28d	West Port 42	Roadside	Passive	84.6	84.6	**51.0**	**44.0**	24.5	23.6	26.9
28b	West Port 62	Roadside	Passive	82.7	82.7	-	**54.2**	24.8	23.0	26.0
28c	West Port Opp 50	Roadside	Passive	84.6	84.6	38.0	35.0	22.2	21.0	21.7
127	West Preston Street 17	Roadside	Passive	100.0	100.0	-	-	14.3	16.2	16.9
91	West Preston Street 40	Roadside	Passive	92.3	92.3	-	-	13.7	16.2	17.0
36	York Place	Roadside	Passive	82.7	82.7	32.0	29.5	20.9	23.9	20.7
CO-LOCATED TUBES										
CL1, CL2, CL3	Queensferry Rd	Roadside	Passive	100.0	100.0	**55.0**	**44.8**	27.5	28.3	25.9
CL4, CL5, CL6	Gorgie Road	Roadside	Passive	92.3	92.3	32.0	30.4	20.1	18.2	16.1
CL7, CL8, CL9	Salamander St	Roadside	Passive	100.0	100.0	27.0	27.8	20.7	20.7	19.2
CL10, CL11, CL12	Glasgow Rd	Roadside	Passive	100.0	100.0	35.0	32.3	17.9	18.3	21.0
CL13, CL14, CL15	St Johns Road	Kerbside	Passive	100.0	100.0	**47.0**	**46.6**	25.9	27.2	28.9
CL16, CL17, CL18	Nicolson Street	Roadside	Passive	100.0	100.0	-	-	30.3	26.7	23.2

Notes (below and overleaf):

Exceedances of the NO_2 annual mean objective of 40 µg/m^3 are shown in bold.

NO_2 annual means exceeding 60 µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG(22) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A.4 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200 µg/m^3

Site ID	Site Name	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
ID4	Gorgie Road	Roadside	Automatic	83.5	83.5	0	0 (87.6)	0	0	0 (74.0)
ID5	St. John's Road	Roadside	Automatic	99.7	99.7	2	0	0	0	0
ID6	Currie High School	Suburban	Automatic	98.9	98.9	0	0 (79.4)	0 (32.0)	0	0
ID7	St. Leonard's	Urban Background	Automatic	97.8	97.8	0	0	0	0 (66.1)	0
ID8	Salamander Street	Roadside	Automatic	95.5	95.5	0	0	0 (90.8)	0	0
ID9	Queensferry Road	Roadside	Automatic	98.1	98.1	3	0	0	0	0
ID10	Glasgow Road	Roadside	Automatic	68.3	68.3	0	0	0	0	0 (77.7)
EDNS	Nicolson Street	Kerbside	Automatic	99.7	99.7	0	4	0 (100.6)	0 (102.6)	0

Notes:

Exceedances of the NO_2 1-hour mean objective (200 µg/m^3 not to be exceeded more than 18 times/year) are shown in bold.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.1 – NO_2 Concentration Trends at Continuous Monitoring Locations

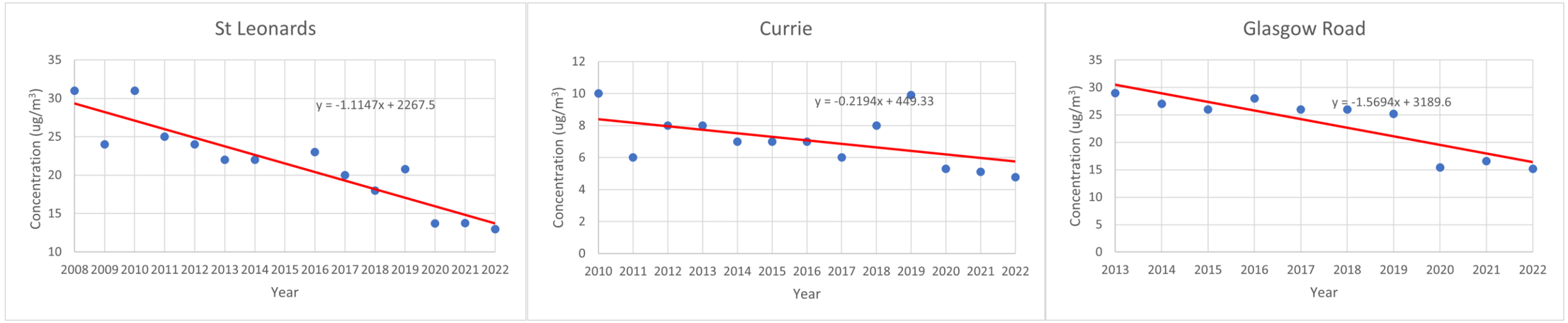


Figure A.2 – Time Variation Plots

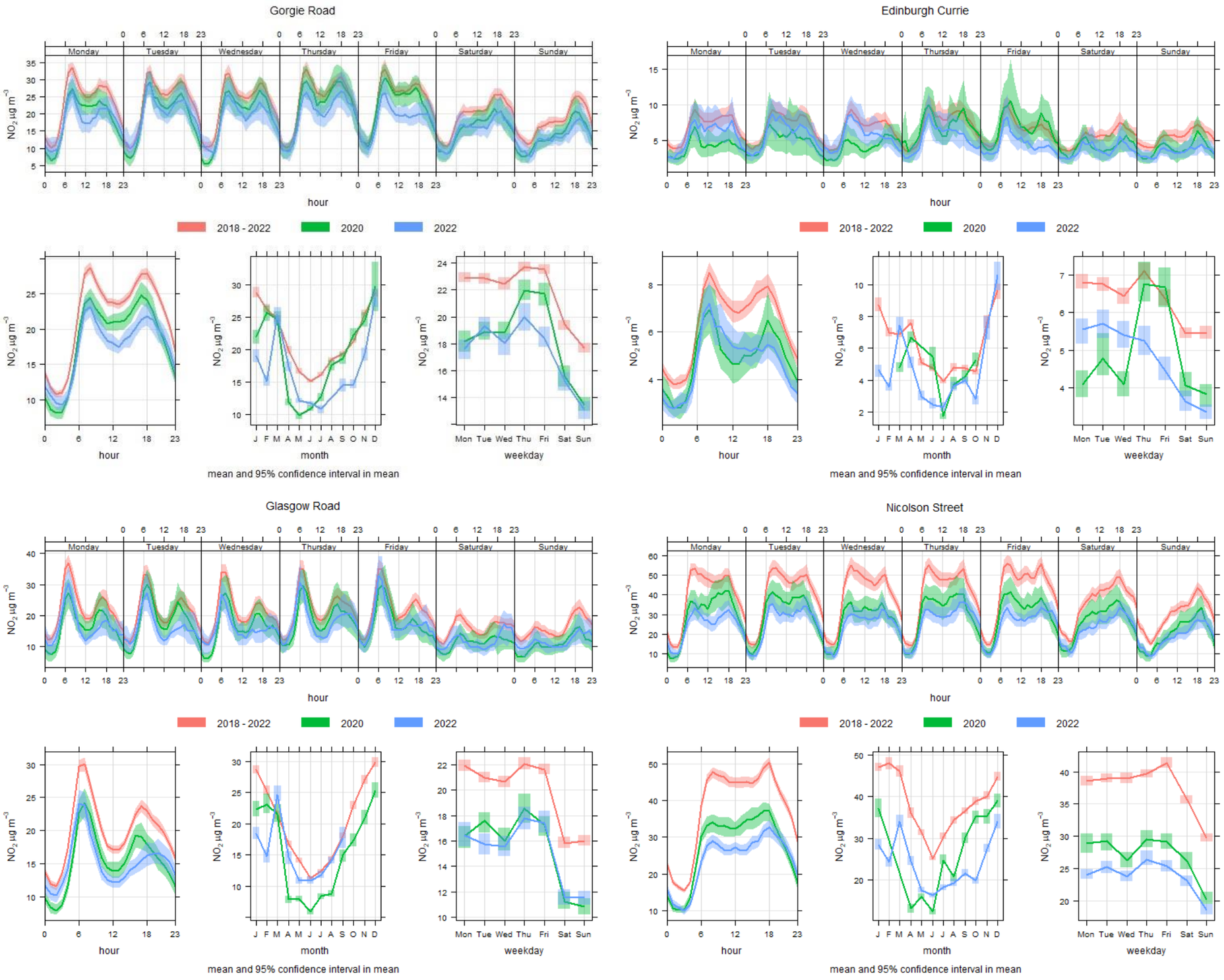


Figure A.3 – Time Variation Plots

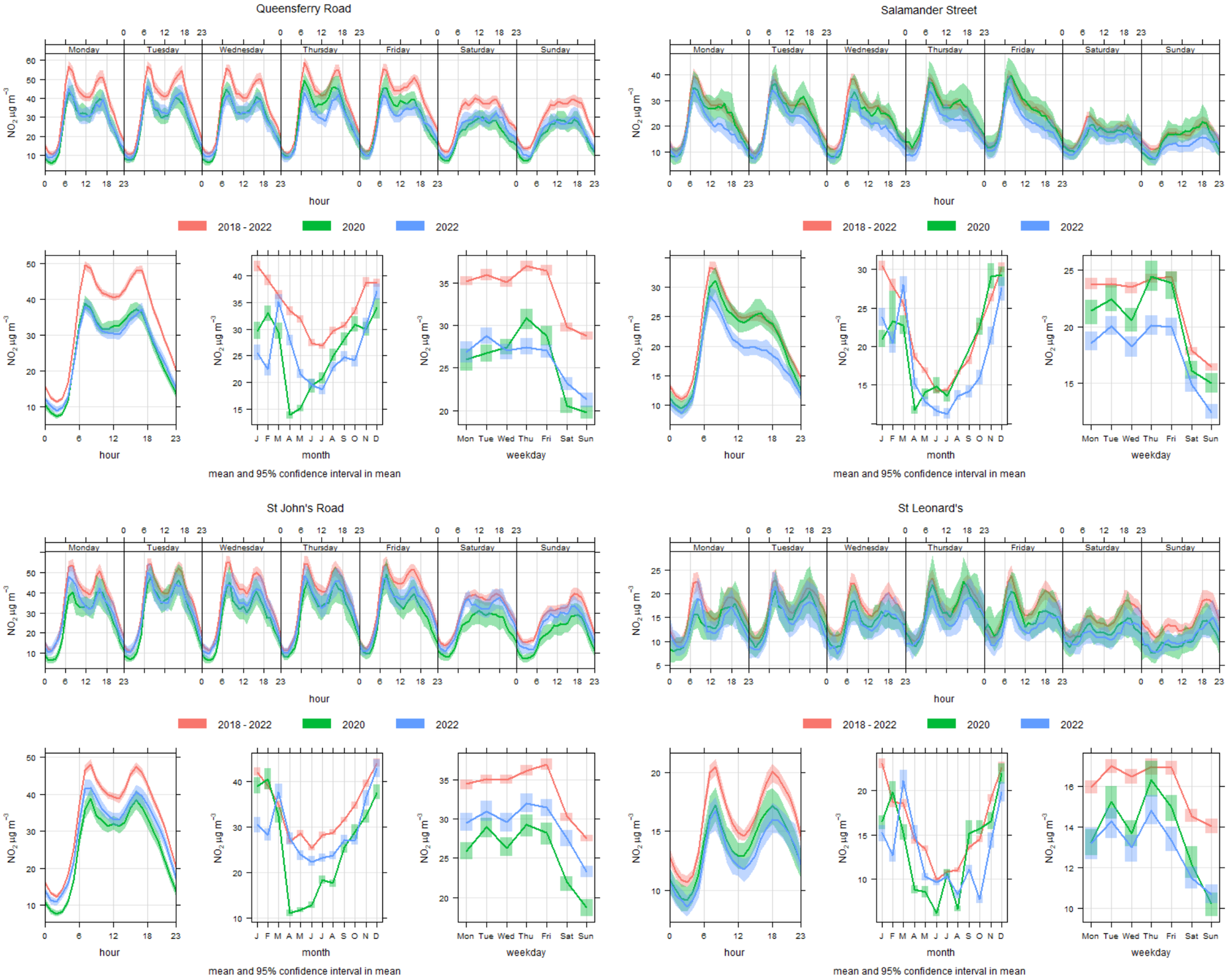
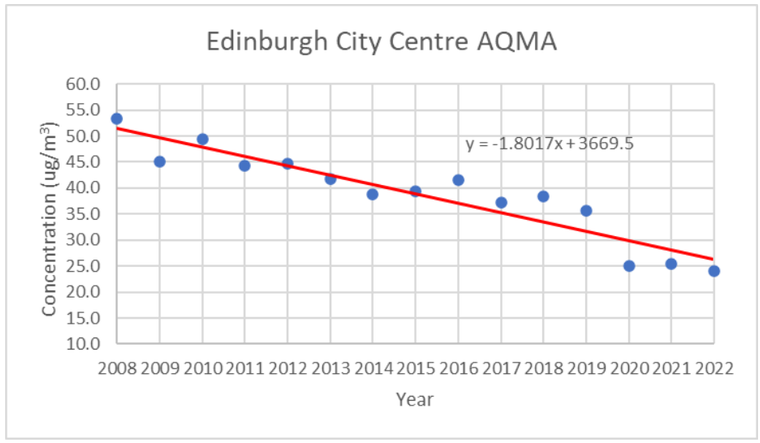
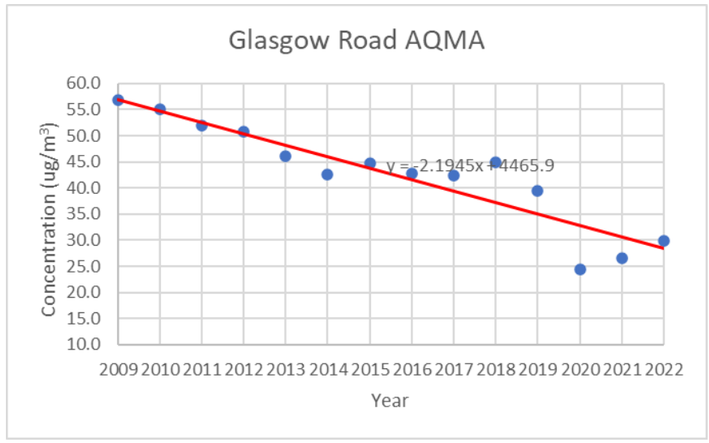
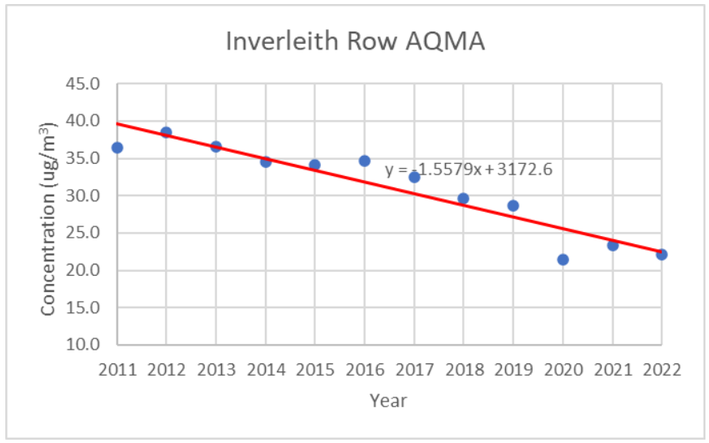
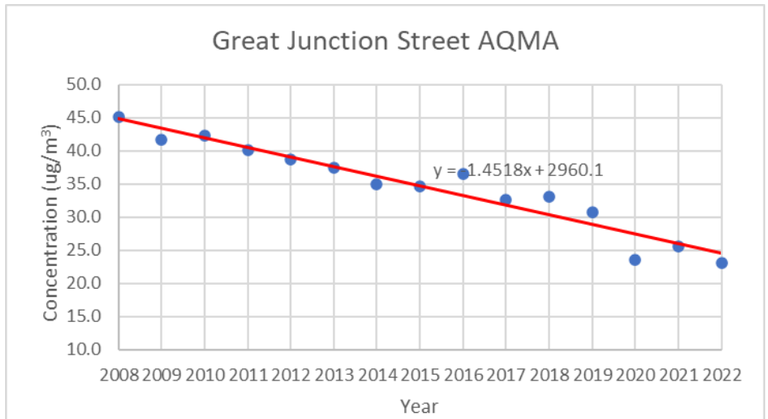


Figure A.4 –NO_2 Concentration Trends at Passive Diffusion Tube Monitoring Locations









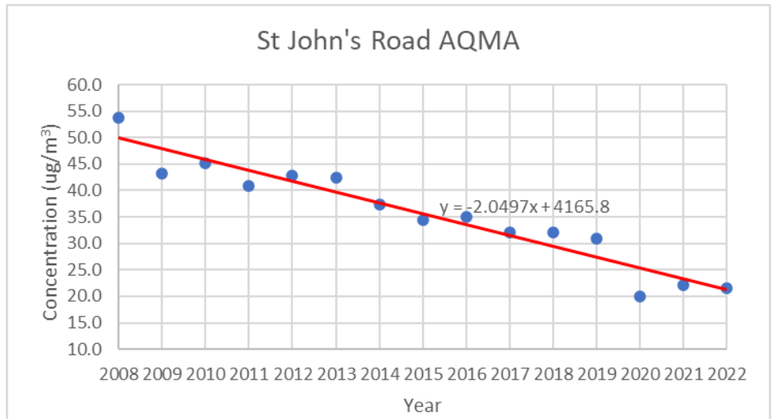


Table A.5 – Data used to establish the trend of annual mean concentrations of nitrogen dioxide at passive diffusion tube sites within the City Centre AQMA (µg/m^3)

Site ID	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
3	58.2	26.3	55.6	55.1	48.0	43.0	43.0	45.0	49.6	41.8	43.2	40.5	29.1	31.1	33.3
3b	N/A	N/A	N/A	N/A	N/A	N/A	45.0	42.0	44.0	41.0	43.0	40.0	30.0	28.9	29.7
5	N/A	58.2	60.1	54.3	51.9	48.5	43.3	42.0	44.0	42.7	42.0	33.3	25.6	23.7	20.8
18	51.5	45.0	54.5	48.2	49.0	45.0	42.0	37.0	38.3	35.3	34.8	33.2	22.6	23.3	20.4
20	53.1	36.8	38.1	N/A	35.0	34.0	32.0	33.0	39.7	N/A	45.3	37.9	-	-	23.2
21	N/A	40.0	40.7	35.8	38.8	36.2	35.1	35.0	40.3	37.9	N/A	30.6	20.0	23.8	20.2
23	N/A	47.5	58.2	41.4	45.1	41.2	45.7	37.0	39.7	34.3	37.1	35.3	21.0	24.9	21.6
24	N/A	46.2	73.0	N/A	49.7	59.9	N/A	54.0	56.7	54.2	52.7	53.2	29.1	34.4	36.4
25	58.2	50.8	49.7	43.6	45.0	41.0	39.0	40.0	45.7	37.9	37.1	33.2	25.8	29.1	25.5
27	52.3	48.4	49.4	48.7	52.0	47.0	48.0	N/A	53.0	37.4	40.4	40.6	23.0	28.8	23.9
46	52.3	43.4	46.2	40.4	46.0	38.0	38.0	37.0	39.3	39.7	37.4	34.9	22.8	27.1	22.6
47	N/A	31.6	47.5	39.0	N/A	41.0	41.1	38.0	40.8	38.1	35.5	36.2	26.4	26.0	25.2
48	46.6	39.8	46.2	40.2	40.0	38.0	33.0	33.0	37.7	32.7	32.9	31.7	21.9	19.6	21.4
49	N/A	48.2	54.5	53.5	50.8	46.8	39.3	36.0	41.7	38.1	37.0	37.2	26.1	27.0	23.2
66	N/A	43.0	40.5	N/A	36.0	34.0	31.0	33.0	31.5	31.1	28.1	29.8	22.5	23.7	24.9
67	N/A	47.9	51.3	45.5	46.0	46.0	39.0	42.0	40.5	42.1	41.7	36.9	25.5	30.1	27.4
69	N/A	56.2	50.6	50.4	42.0	40.0	42.0	43.0	39.3	36.5	37.8	35.4	39.3	27.8	26.3
70	N/A	47.3	46.1	42.4	41.0	44.0	38.0	44.0	40.0	38.2	40.1	37.6	32.3	32.6	34.1
76	N/A	N/A	52.9	44.4	48.0	41.0	41.0	38.0	43.4	34.6	37.1	33.2	22.9	25.3	20.2
80	N/A	N/A	47.4	42.2	42.0	44.0	37.0	33.0	38.0	34.2	36.5	33.3	20.7	26.3	24.0
81	N/A	N/A	N/A	51.2	46.0	44.0	43.0	50.0	56.7	40.9	42.6	50.0	44.0	40.6	29.9
17a	N/A	38.8	43.4	37.4	39.0	36.0	35.0	36.0	34.4	31.9	31.2	28.7	23.9	20.8	22.6
22a	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.0	42.0	36.5	23.1	25.9	23.9
25b	44.9	38.8	39.1	35.8	35.0	34.0	31.0	31.0	34.7	29.9	31.8	30.1	21.5	24.9	21.6
25c	43.8	38.0	37.7	41.0	41.0	37.0	29.0	31.0	33.1	30.5	32.6	33.2	27.0	32.1	28.0
28b	72.5	66.7	62.4	57.0	61.0	52.0	56.0	58.0	58.9	N/A	64.9	54.2	24.8	23.0	26.0
28c	51.5	43.5	41.5	39.0	N/A	39.0	N/A	46.0	43.5	35.9	38.3	35.0	22.2	21.0	21.7

28d	66.6	60.2	54.9	55.2	60.0	58.0	51.0	52.0	50.8	46.9	51.4	44.0	24.5	23.6	26.9
33a	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	29.0	33.0	28.7	19.7	23.7	22.9
33b	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.0	29.2	30.0	22.2	22.5
37ai, 37aii	42.3	40.5	60.0	42.0	43.0	44.0	40.0	42.0	54.1	56.5	56.3	52.5	33.4	23.4	25.0
37b	N/A	N/A	N/A	37.1	39.0	37.0	35.0	36.0	36.7	34.1	37.1	38.8	21.7	21.1	22.2
48a	N/A	N/A	37.7	31.4	40.0	35.0	36.0	34.0	37.4	27.6	35.6	38.2	21.5	22.7	20.9
48c	N/A	N/A	N/A	N/A	43.0	42.0	34.0	41.0	40.0	41.0	34.0	36.0	31.0	24.0	24.4
48e	N/A	N/A	N/A	N/A	N/A	39.0	35.0	44.0	41.0	48.0	37.0	29.6	23.6	26.1	24.5
74f	N/A	N/A	43.4	44.7	47.0	34.0	30.0	26.0	30.8	30.4	30.3	25.7	19.5	21.3	19.1
76b	N/A	N/A	N/A	N/A	51.0	46.0	41.0	46.0	44.0	39.0	40.0	33.8	25.6	24.3	21.1
76d	N/A	N/A	N/A	N/A	38.0	35.0	32.0	32.0	33.0	28.0	33.0	28.6	23.0	21.9	20.7
77a	N/A	N/A	N/A	N/A	41.0	37.0	35.0	35.0	36.0	31.0	32.0	28.2	21.4	21.5	19.4
77b	N/A	N/A	N/A	N/A	46.0	42.0	38.0	38.0	36.0	33.0	36.0	34.2	27.2	23.1	20.3
79d	N/A	N/A	N/A	N/A	N/A	46.0	41.0	42.0	39.0	38.0	40.0	34.5	24.4	22.7	22.6
80f	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.0	32.5	20.0	22.3	20.5
80g	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39.0	31.1	21.8	24.2	21.4
80h	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28.0	27.2	17.5	21.0	16.2
HT1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37.0	42.0	41.0	31.0	36.5	22.7	25.1	24.7
HT2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39.0	39.0	33.0	41.0	40.8	22.9	26.2	29.3
SH1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39.0	36.0	N/A	40.0	37.0	28.8	29.7	27.5
Mean	**52.5**	**44.3**	**48.5**	**43.5**	**44.1**	**41.2**	**38.4**	**38.8**	**41.7**	**37.0**	**39.0**	**36.5**	**25.4**	**26.1**	**24.0**

Table A.6– Data used to establish the trend of annual mean concentrations of NO_2 at passive diffusion tube sites within the Glasgow Road AQMA (µg/m^3)

Site ID	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
16	57.3	54.7	50.9	54.8	44.9	45.6	46.0	44.8	39.6	46.0	40.9	26.7	27.9	27.7
15a	N/A	N/A	N/A	N/A	N/A	34.0	39.0	33.0	35.0	38.0	32.0	17.3	21.5	25.3
58i, 58ii	61.8	65.0	59.3	54.8	52.0	51.9	51.3	49.0	50.9	52.0	46.0	29.2	30.7	34.8
15	51.4	45.7	45.9	42.5	41.4	38.6	42.8	44.0	44.4	43.7	39.2	24.3	26.6	31.8
Mean	**56.8**	**55.1**	**52.0**	**50.7**	**46.1**	**45.4**	**46.7**	**45.9**	**45.0**	**47.2**	**42.0**	**26.7**	**28.4**	**29.9**

Table A.7– Data used to establish the trend of annual mean concentrations of NO_2 at passive diffusion tube sites within the Inverleith Row AQMA (µg/m^3)

Site ID	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
55i, 55ii	43.8	46.0	43.0	40.0	41.0	40.5	39.5	34.3	33.4	26.2	27.3	26.2
55c	28.6	32.7	31.3	29.3	24.9	29.2	23.4	23.6	23.9	16.1	20.2	17.7
53	36.9	36.8	35.5	34.5	36.4	34.2	34.4	30.8	28.8	22.2	22.5	22.3
Mean	**36.4**	**38.5**	**36.6**	**34.6**	**34.1**	**34.6**	**32.4**	**29.6**	**28.7**	**21.5**	**23.4**	**22.1**

Table A.8 – Data used to establish the trend of annual mean concentrations of NO_2 at passive diffusion tube sites within the Great Junction Street AQMA (µg/m^3)

Site ID	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
29	45.3	45.1	43.7	38.9	37.0	36.0	31.0	32.0	33.2	32.1	29.8	25.9	21.7	21.2	20.9
29a	48.0	42.0	44.6	41.9	40.0	38.0	34.0	34.0	37.2	27.4	31.1	27.1	25.0	23.9	20.8
29ci, 29cii	53.4	48.2	49.4	44.6	44.0	42.0	39.0	40.0	41.6	35.9	36.5	35.4	28.4	28.5	26.7
9	40.4	31.6	36.7	31.2	35.0	32.0	30.0	29.0	32.0	26.3	29.1	26.3	20.6	25.3	21.0
9a	-	-	45.5	46.2	44.0	41.0	41.0	42.0	39.8	35.1	36.5	32.8	29.2	27.6	26.5
9c	N/A	N/A	N/A	N/A	N/A	N/A	30.0	29.0	31.0	34.0	28.0	26.0	17.9	21.4	20.1
9d	N/A	N/A	N/A	N/A	N/A	N/A	42.0	36.0	42.0	36.0	35.0	33.6	28.3	28.2	24.9
45d	42.4	40.9	38.3	39.6	37.0	34.0	34.0	37.0	33.2	33.2	32.0	31.2	25.9	25.7	24.7
30b	38.4	38.5	39.9	40.0	38.0	36.0	33.0	38.0	32.8	32.8	31.7	30.8	19.7	24.2	23.5
30c	50.2	42.6	44.1	38.4	38.0	39.0	37.0	34.0	40.3	34.2	37.1	33.1	22.7	25.1	22.6
30e	43.1	41.9	38.7	41.2	37.0	36.0	33.0	32.0	34.0	-	33.9	33.3	20.2	28.0	21.1
30	44.6	44.1	41.8	39.1	38.0	41.0	-	33.0	42.1	31.7	36.9	32.8	23.8	28.1	23.9
Mean	**45.1**	**41.7**	**42.3**	**40.1**	**38.8**	**37.5**	**34.7**	**35.1**	**36.6**	**32.1**	**33.5**	**30.9**	**23.7**	**25.8**	**23.1**

Table A.9 – Data used to establish the trend of annual mean concentrations of NO_2 at passive diffusion tube sites within the St John's Road AQMA (µg/m^3)

Site ID	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	50.0	43.0	47.0	39.0	43.0	42.0	39.0	35.0	37.3	32.2	29.2	31.8	16.9	20.4	18.9
1b	48.8	44.2	43.5	38.4	44.0	41.0	37.0	33.0	36.1	28.5	27.7	27.3	17.4	20.8	19.2
1d	84.9	57.8	58.8	56.3	52.0	52.0	48.0	46.0	45.1	42.0	40.1	37.7	28.8	29.1	29.3
SJ1	N/A	N/A	N/A	N/A	N/A	N/A	31.0	28.0	27.0	28.0	31.0	27.7	17.7	19.1	19.0
39	31.7	28.2	31.1	30.0	32.0	35.0	32.0	30.0	30.0	30.0	32.0	30.4	19.1	21.6	21.0
Mean	**61.2**	**48.3**	**49.8**	**44.6**	**46.3**	**45.0**	**41.3**	**38.0**	**39.5**	**34.2**	**32.3**	**32.3**	**21.0**	**23.4**	**21.5**

Table A.10 – Annual Mean PM_{10} Monitoring Results (µg/m^3)

Site ID	Site Name	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
ID5	St. John's Road	Kerbside	99.9	99.9	13.1	13.6	9.9	11.0	14.3
					14.4	15.0	10.9	12.1	15.7
ID6	Currie High School	Suburban	99.9	99.9	9	9.5	8.6	7.3	8.6
								8	9.4
ID7	St. Leonard's	Urban Background	99.3	99.3	11	10.9	8.1	8.5	9.2
						11.3	8.9	9.3	10.1
ID8	Salamander Street	Roadside	98.9	98.9	**20**	**18.1**	14.8	15.4	14.3
								17.0	15.7
ID9	Queensferry Road	Roadside	88.4	88.4	**25**	-	11.2	12.0	13.1
						-	12.3	13.2	14.4
ID10	Glasgow Road	Roadside	99.9	99.9	16	15.9	12.4	10.2	11.8
								11.3	13.0
EDNS	Nicolson Street	Roadside	97.8	97.8	-	9.0	9.5	10.1	12.1
					-	9.9	10.5	11.1	13.3
ED012	Tower Street	Urban Industrial	100.0	100.0	-	10.7	8.6	9.9	10.0
					-	11.8	9.5	10.9	11

Notes:

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

All means have been "annualised" as per LAQM.TG(22), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A.11 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
ID5	St. John's Road	Kerbside	99.9	1	3	0	0	**12**
								12
ID6	Currie High School	Suburban	99.9	0	1	0	1	2
								2
ID7	St. Leonard's	Urban Background	99.3	0	1	0	0	1
								2
ID8	Salamander Street	Roadside	98.9	3	5	2 (51.2)	3	5
								6
ID9	Queensferry Road	Roadside	88.4	4	0	2	0	3
								3
ID10	Glasgow Road	Roadside	99.9	0	3	0 (37.4)	3	2
								4
EDNS	Nicolson Street	Roadside	97.8	-	0 (43.3)	0	0	2
								3
ED012	Tower Street	Urban Industrial	100.0	-	1	0	0	1
								3

Notes:

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

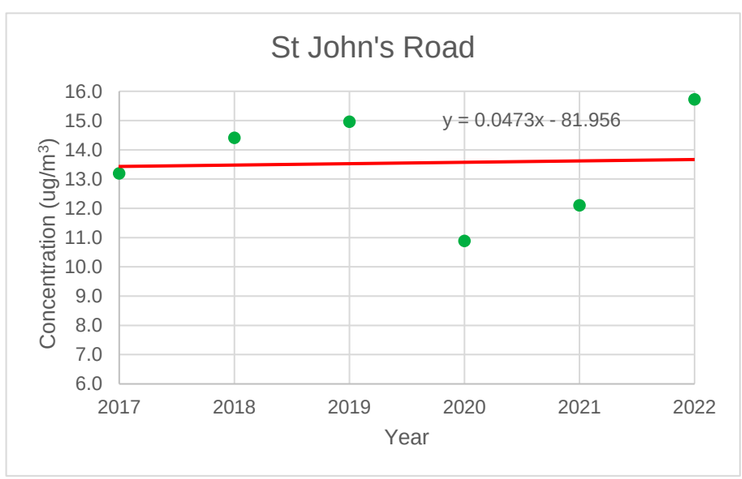
If the period of valid data is less than 85%, the 98.1st percentile of 24-hour means is provided in brackets.

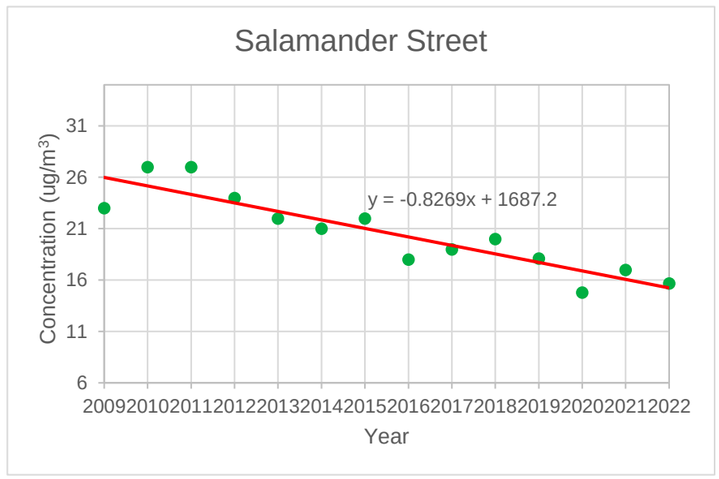
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

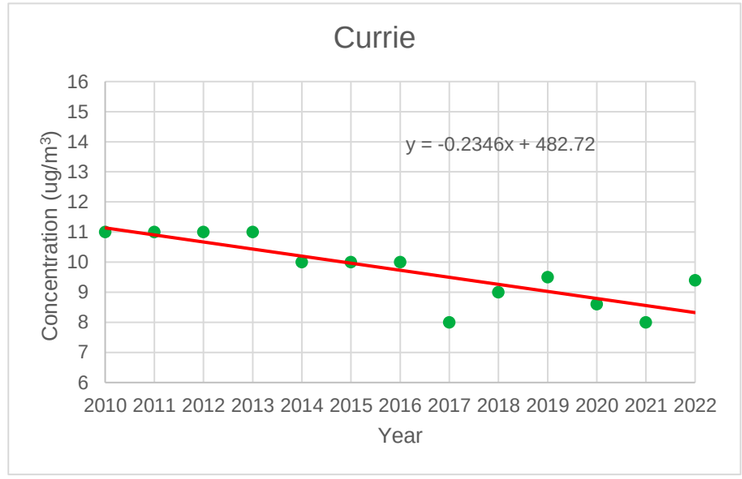
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

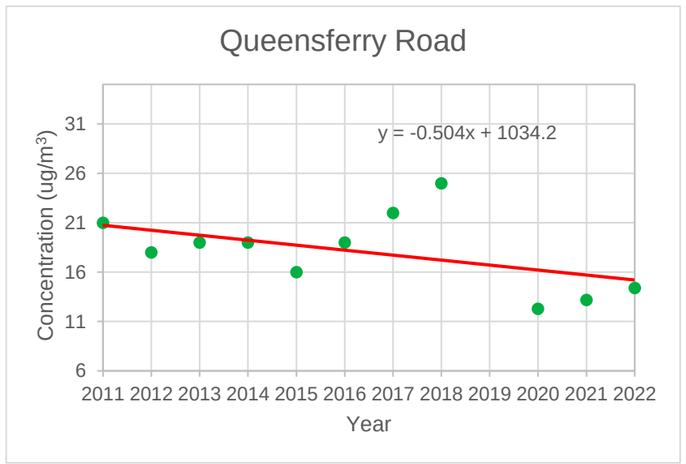
Data in grey coloured cells is corrected FIDAS data under terms of the LAQM Scottish Guidance Note, May 2023. Not undertaken retrospectively.

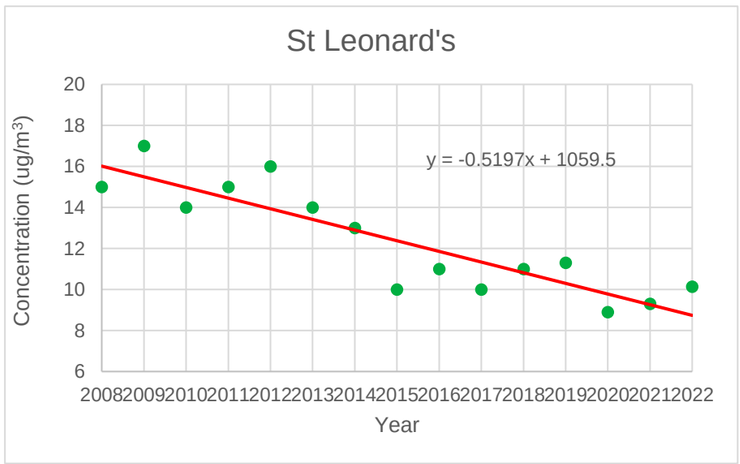
Figure A.5 – PM_{10} Concentration Trends at Continuous Monitoring Locations











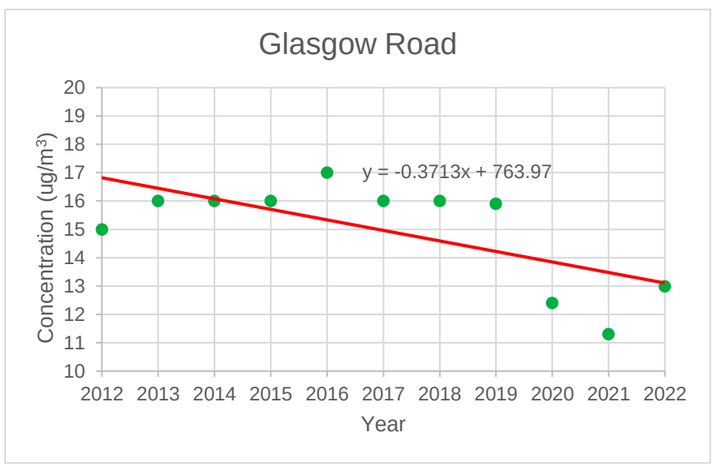


Table A.12 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	Site Name	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2018	2019	2020	2021	2022
ID5	St. John's Road	Kerbside	99.9	99.9	6.4	7.0	4.9	5.5	6.0
					6.8	7.4	5.2	5.8	6.4
ID6	Currie High School	Suburban	99.9	99.9	-	-	-	4.3	4.7
					-	-	-	4.6	5.0
ID7	St. Leonard's	Urban Background	97.8	97.8	6.3	6.3	4.4	4.8	5.1
							4.7	5.1	5.4
ID8	Salamander Street	Roadside	88.4	88.4	-	-	-	5.9	6.3
					-	-	-	6.3	6.7
ID9	Queensferry Road	Roadside	98.9	98.9	-	-	5.2	5.5	5.9
					-	-	5.5	5.8	6.3
ID10	Glasgow Road	Roadside	99.9	99.9	-	-	-	5.1	5.7
					-	-	-	5.4	6.0
EDNS	Nicolson Street	Roadside	99.3	99.3	-	-	5.0	5.4	6.3
					-	-	5.3	5.8	6.7
ED012	Tower Street	Urban Industrial	100.0	100.0	-	5.7	4.2	4.7	4.9
						6.0	4.5	5.0	5.2

Notes:

Exceedances of the $PM_{2.5}$ annual mean objective of 10 µg/m^3 are shown in bold.

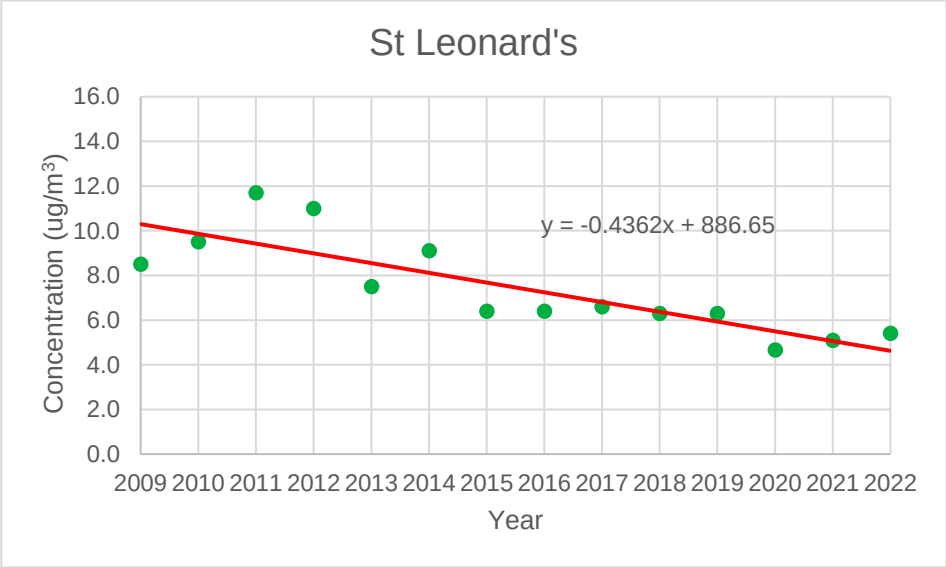
All means have been "annualised" as per LAQM.TG(22), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.6 – $PM_{2.5}$ Concentration Trends at Continuous Monitoring Locations



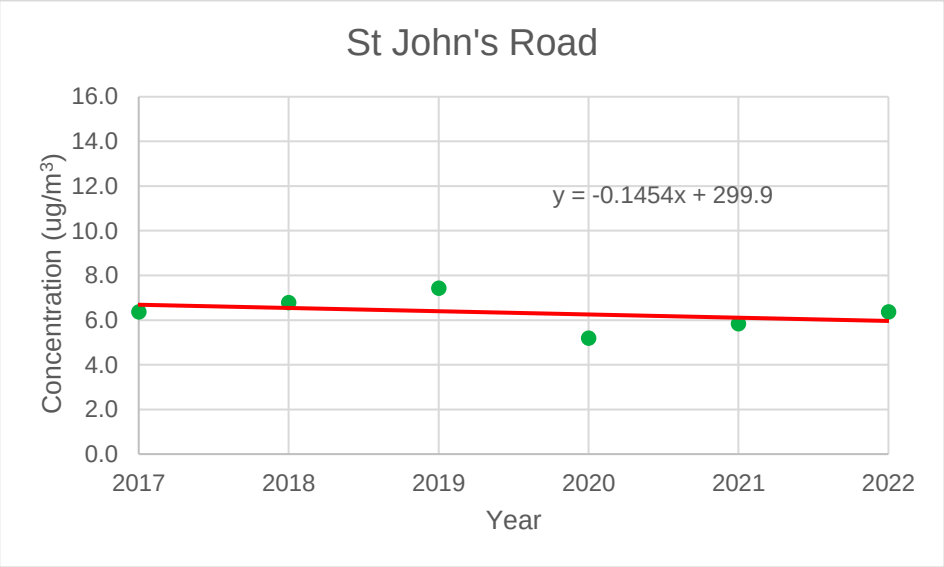


Table A.13 – SO_2 2022 Monitoring Results, Number of Relevant Instances

Site ID	Site Name	Site Type	Valid Data Capture for monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	Number of 15-minute Means > 266 µg/m	Number of 1-hour Means > 350 µg/m	Number of 24-hour Means > 125 µg/m
ID7	St. Leonard's	Urban Background	94.1	94.1	0	0	0

Notes:

Exceedances of the SO_2 objectives are shown in bold (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year)

If the period of valid data is less than 85%, the relevant percentiles are provided in brackets (15-Minute means: 99.9th percentile, 1-hour means: 99.7th percentile, 24-hour means: 99.2nd percentile).

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A.14 – Number of Ozone exceedances at St Leonards

Site ID	Site Name	Site Type	Valid Data Capture for monitoring Period (%) (1)	Valid Data Capture 2020 (%) (2)	Number of 8-hour Means > 100 µg/m
ID7	St. Leonard's	Urban Background	46.1	46.1	0

Notes: Exceedances of the O_3 objective are shown in red and bold

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A.15 – PAH (B(a)P) Monitoring at St Leonard's

St Leonard's Urban Background	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Annual Concentration (ng/m^3)	0.131	0.129	0.099	0.109	0.084	0.056	0.073	0.077	0.047	0.055	0.061	0.037	0.049	0.061

Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO_2 2022 Monthly Diffusion Tube Results (µg/m^3)

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
NORTH WEST LOCALITY														
13a	14.7	12.5	29.7		15.5	12.6	15.5	18.9	20.1	15.7	24.3	30.4	19.1	15.7
16	18.8	17.9	48.1	36.7	32.3	23.1	25.2	33.8	40.2	33.0	43.0	52.7	33.7	27.7
15a	31.3	15.8	37.7	30.9	27.0	28.7	29.8	29.1	31.2	8.2	34.0	43.3	30.8	25.3
58i	34.0	35.6	52.3	38.3	39.7	36.4	38.6	37.9	45.6	38.2	48.0	51.0	-	**-**
58ii	52.6	33.2	2.7	81.5	42.5	43.6	42.5	41.8	38.1	34.6	48.5	53.1	42.4	34.8
15	31.0	28.8		<1.0	56.3		35.4	36.2	35.2	39.8	37.4	48.5	38.7	31.8
56	20.4	3.6	15.3	22.0	20.6	16.4	19.1		25.7	17.1	21.4	34.3	21.2	17.4
143a	17.7	16.2	34.6		14.6	15.8	15.6	18.8	18.4	19.2	24.9	25.6	20.1	16.5
41	13.0	8.0	21.4	13.9	9.0	8.9	9.7	15.2	13.3	11.1	13.7	22.6	13.3	10.9
121	28.6	18.5	8.8	26.9	21.9	25.5	24.9	26.1	30.4	34.3	37.9	49.1	29.5	24.2
122	26.7	24.2	40.7	25.8	26.5	21.2	28.1	32.7	30.9	27.2	31.4	39.8	29.9	24.5
55c	12.9	14.0	34.6	28.4	18.2	14.7	16.7	22.9	25.2	17.0	18.9	35.3	21.6	17.7
55i	36.0	25.2	43.0	28.6	2.5	52.9	26.1	31.3	29.4	27.5	26.8	42.5	-	**-**
55ii	32.9	26.2	42.6	23.2	27.7	28.3	28.7	31.5	31.4	29.7	30.4	36.1	31.9	26.2
129B	19.4	16.3	28.6	17.0	14.4	11.0	15.6	15.5	18.4	16.2	23.7	28.4	18.7	15.4
63A	18.9	21.5	26.5	17.7	15.9	15.8	17.6	15.1	19.7	17.8	22.5	28.4	19.8	16.2
64	52.5	43.3		57.3	49.5	45.4	50.0	46.2	56.3	43.0	55.0	55.0	50.3	**41.3**
64b	24.8	29.9	34.1	23.6	19.0	18.6	22.6	26.1	30.6	22.5	27.4	30.6	25.8	21.2
64a	22.9	22.7	34.4	24.6	22.1	18.7	20.2	21.8	23.7	21.3	25.3	29.1	23.9	19.6
69J	51.7	36.7	49.0	44.8	41.6	34.1	43.0	40.3	50.5	48.4	53.2	51.5	45.4	37.3
69I	44.6	28.4		52.3	44.4	28.0	35.9	41.1	51.6	17.3	39.2	6.1	38.3	31.4
40	15.1	14.9	34.3	30.7	22.1	14.1	18.9	23.1	26.2	20.7	27.4	28.2	23.0	18.9
23	17.1	18.0		44.3	31.2	13.8	19.2	24.7				35.5	25.5	21.6
22a	33.8	26.2							24.3	33.7	39.1	38.7	32.6	23.9
1d	33.8	31.9	40.2	30.6	26.0	29.0	28.7	46.8	49.6	28.7	38.0	44.6	35.7	29.3
1b	19.2	17.6	36.9	27.5	20.3	15.8	19.4	24.9	27.0	19.7	22.3	29.3	23.3	19.2
1	15.4	16.8	36.1	26.7	23.0	16.1	17.5	27.6	24.6	18.2	21.8	32.9	23.1	18.9

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
SJ1	22.0	18.7	28.0	28.1	18.9	17.3		25.8	22.1	18.5	19.4	36.2	23.2	19.0
39	29.9	21.3	34.5	27.8	20.7	19.8	22.1	27.7	28.3	19.2	21.7	33.4	25.5	21.0
14	25.9	16.4	28.7	11.2	14.3	12.3	12.5	14.6	14.9	17.5	20.9	33.7	18.6	15.3
SOUTH WEST LOCALITY														
76b	27.1	20.2	41.5	25.0	23.6	18.1	17.9	24.6	24.2	24.1	26.8	35.2	25.7	21.1
76	23.8	16.0	39.9	27.5	22.0	15.9	17.7	24.5	26.6	20.5	29.8	30.6	24.6	20.2
78a	12.9	8.4	19.8	12.1	8.8	4.7	9.6	9.9	9.7	8.3	14.3	18.7	11.4	9.4
80e	25.5		38.2	21.7	17.4	17.7	20.7	21.9	21.8	19.8	21.5	34.9	23.7	19.5
4a	16.5	17.0	25.2	20.2							19.4	26.2	20.8	13.0
145	23.5	16.2	31.8	19.9	15.7		15.7	16.2	18.5	14.5	19.3	32.4	20.3	16.7
145a	16.7	10.0	29.1	20.1	12.5	8.8	11.9	18.7	15.7	12.8	14.7	27.9	16.6	13.6
79d	29.8	21.1		31.9	22.9	18.6		26.3	33.7	25.3	30.6	35.5	27.6	22.6
79B	18.7	21.5	32.9	23.9	15.6	12.5	17.3	22.5	22.4	16.8	19.9	32.6	21.4	17.6
79	18.1			25.7	16.3	13.1	15.3	21.2	10.7				17.2	17.5
80	29.8	12.2	36.2	32.9	25.4	24.8		31.1	31.9	<1.0	28.4	40.1	29.3	24.0
18	20.4	17.1	35.8	29.6	22.0	19.2	21.3	22.5	23.9	20.9	21.7	43.9	24.9	20.4
80f	22.7	18.0	37.0	31.3	21.8	17.5		23.3	28.5	20.5	19.4	34.8	25.0	20.5
80g	32.0	22.3	34.4	24.4	20.4	18.4	20.2	24.7	24.2	21.0	24.3	46.3	26.1	21.4
5	18.0	19.8	34.2	23.6	23.2	21.9	24.4	28.0	27.8	25.0	24.5	33.7	25.3	20.8
76d	29.5	20.0	36.9	22.2	20.0	15.9	20.9	23.4	26.5	23.3	28.5	34.8	25.2	20.7
11a	24.2	21.3	30.5	24.6	18.8	14.8	18.9	20.5	22.9	15.3	19.8	27.4	21.6	17.7
11	13.8	11.9	21.2	17.3	12.3	8.5	12.8	12.2	3.8	8.0	13.7	20.2	13.0	10.7
77a	28.1	11.3	37.3	21.3	18.8	15.3	18.0	18.8	21.2	22.3	36.0	34.9	23.6	19.4
77b	22.8		40.5	28.0	21.8	15.4	18.1	23.3	22.8	23.4	31.1	2.2	24.7	20.3
80h		20.6	32.5	33.3	18.3	14.8	16.6	19.6	17.9	16.9	18.3	21.7	19.7	16.2
NORTH EAST LOCALITY														
29a	20.3	18.4	42.5	31.4	22.3	17.6	23.4	23.3	28.7	19.8	26.2	30.3	25.4	20.8
29ci	34.9	29.5	44.2	29.6	27.5	24.3	24.8	30.0	34.9	36.6	52.8	52.9	-	-
29cii	26.5	21.2	43.3	28.3	26.3	24.4	27.6	26.8	28.7	28.0	32.0	46.3	32.6	26.7
29	27.5	25.5	34.3	24.5	21.7	20.7	23.2	24.1	20.9	22.9	22.4	37.3	25.4	20.9
119	19.5	14.5	37.1	22.2	16.2	14.1	19.2	22.8	26.1	19.1	25.4	36.6	22.7	18.7
43	28.4	24.6	39.0	26.6	20.8	17.2	18.0	24.1	20.8	22.9	28.4	36.3	25.6	21.0
9d	27.8	26.3	42.7	37.9	25.2	20.3	27.6	32.7	28.9	22.3		42.0	30.3	24.9
9	21.0	18.1	34.7	32.4	22.2	16.8	22.9	27.3	30.8	21.1	23.0	36.1	25.5	21.0
9a	34.4	29.9	45.6	32.7	27.3	25.2	29.0	29.8	30.3	28.4	31.6	42.4	32.2	26.5

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
30f	32.2	15.8		30.2	26.6	25.7	25.4	24.5	24.8	25.1	35.2	24.0	26.3	21.6
25c	31.5	52.9	41.0	26.7	22.2	21.3	24.3	33.2	29.6	34.2	53.7	39.1	34.1	28.0
25e	23.8	17.7	39.4	25.6	24.3	15.4	20.1	23.5	25.9	17.6	29.0	30.8	24.4	20.1
25	27.1	8.1	44.3	39.8	30.5	18.9	24.3	29.5	30.5	23.2	35.2	38.0	31.0	25.5
25b	22.6	22.4	42.8			16.1	22.5	23.5	24.7		28.0		25.3	21.6
18A	33.7	32.2	44.4	19.7	27.9	25.1	26.4	30.4	28.5	29.4	32.1	41.7	31.0	25.4
53	41.2	28.8	32.7	21.3	21.6	20.3	22.4	26.8	22.6	27.0	30.1	31.7	27.2	22.3
45b	25.9	20.1	27.2	19.6	16.8	14.1	19.3	28.9	28.7		37.8	52.7	26.5	21.7
45d	35.6	29.1	37.0	23.9	26.0	26.0	22.6	28.4	29.1	29.2	35.5	38.8	30.1	24.7
30b	33.2		38.0	24.8	25.0	25.2	23.5	26.8	26.9	24.4	27.0	40.0	28.6	23.5
30c	19.1	16.6	46.0	34.9	26.7	19.5	27.0	27.2	34.1	18.2	24.7	36.8	27.6	22.6
30e	24.6	23.8	43.7	15.9	25.2	20.4	23.8	21.9	26.4	22.3		34.6	25.7	21.1
30	22.7	17.1	47.3	33.7	26.3	21.7	27.6	30.7	33.2	22.8	27.6	39.1	29.2	23.9
21	26.3	21.7	32.0		19.1			22.0	22.7				24.0	20.2
20		28.0	42.4	29.5	25.4	18.7		24.3	25.5	21.7	28.3	38.9	28.3	23.2
66	20.5	21.0	44.2	29.9	26.1	17.7	22.3	35.5	37.2	28.9	37.3	32.9	30.3	24.9
67	31.6	27.3		39.4	34.0	25.0	30.5	36.4	43.6	26.4	24.6	48.3	33.4	27.4
81	35.6	40.4	52.6	20.8	28.4	25.2	25.6	44.0	61.6	3.5	27.2	38.6	36.4	29.9
116	29.4			38.3	28.8	26.2	26.5	30.6	38.3	25.6	29.0	36.1	30.9	25.4
46	32.1	29.7	42.4	24.4	25.8	21.3	24.9	27.8	33.2	9.3	24.7	34.0	27.5	22.6
69	36.5	30.2	47.7	30.7	24.3	24.8	23.1	30.3	29.9	30.2	37.6	39.3	32.1	26.3
70	42.8	43.2	43.9	25.2	26.6	29.7	23.6	24.1	45.2	45.4	74.6	74.6	41.6	34.1
32	23.2	25.5	43.1			20.1	20.1	21.8	22.2	25.8	33.3	31.3	26.6	21.9
9c	22.8	17.6	33.6	20.9	19.1	18.2	22.2	<1.0	40.2	20.2	19.9	35.0	24.5	20.1
71	25.4	31.2	38.3	19.9	19.4	21.6	20.6	21.7	27.6	22.9	29.8	37.9	26.4	21.6
73d	24.9	23.3	39.6	23.3	18.0	22.9	20.9	24.6	25.8	32.9	53.5	33.0	28.6	23.4
30X	19.2	17.9	31.6	6.0	14.1	16.2	21.0	17.6	18.9	18.1	22.4	19.8	19.7	16.2
51b	20.4	21.7	43.5	30.6		20.7	25.4	29.3	31.0	28.7	26.6	35.5	28.5	23.4
51c	36.8	28.0	35.3	20.0	21.8	24.9	26.0	22.1.	23.3	31.0	32.7	34.7	28.6	23.5
90F	21.5		30.6		17.8	14.8	17.5	18.5	24.0		30.2	<1.0	21.9	19.3
SOUTH EAST LOCALITY														
10B	36.4	32.7	46.2	29.8	33.9	37.1		37.4	39.5	34.8		47.2	37.5	30.8
98	24.3	28.7		18.6	16.9	17.3	17.8		21.6	23.1	27.0	25.9	22.1	18.2
44	23.3	15.6	33.4	24.7	21.2	17.3	17.6	22.3	25.1	21.2	26.9	36.0	23.7	19.5
8A	22.2	28.8	37.2	28.7	20.8	22.5	21.0	32.9	40.8	25.8	43.7	43.1	30.6	25.1

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
6a		13.6	31.3	21.4		12.1	14.4				21.4		19.0	15.6
48G	28.4	25.4	40.0	19.3	21.9	27.0	38.0	33.5		30.2	42.8	57.9	33.1	27.2
48h	36.3	24.6	37.4		24.1	26.0	32.0	32.9	44.7	30.1	45.5	43.9	34.3	28.2
94	21.1	18.4	34.5	21.3	19.3	16.2	16.5	22.4	23.9	20.0	26.7	33.6	22.8	18.7
138	25.4	22.6	38.4	25.4		17.8	19.2	19.2	29.2	15.2	32.4	28.0	24.8	20.4
151	14.1	13.8	30.3	19.8	16.6	15.3	16.3	16.4		15.5	24.1	28.0	19.1	15.7
48f	21.4	24.7	37.1	31.8	24.2	17.2	20.6	27.8	36.4	20.9	33.8	41.9	28.2	23.1
48c		38.4	40.3	31.4	27.0		24.5	27.8	27.4	23.0	27.2		29.7	24.4
48a	19.0	20.1	38.5	27.7	21.2		17.6	21.7			26.3	37.2	25.5	20.9
48	13.9	22.1	33.4	22.7		12.9			53.9	16.9	20.3	38.0	26.0	21.4
48e	24.3		40.6		25.2	20.4	23.9		34.6	23.0	26.2	50.3	29.8	24.5
123	15.3	13.8	28.5	14.9	11.1	15.1	15.3	17.9	22.4	18.8	21.9	31.1	20.2	16.6
93	13.8	13.3	30.9	21.3	13.3	11.5	13.0	18.4	20.5	16.4	16.1	29.9	18.2	14.9
97	21.3	24.5	23.0	18.0	25.7	10.1	15.5	15.4	16.2	12.1	16.5	30.1	19.0	15.6
128	22.4	14.4	34.3	26.3	18.5	15.6	17.3	22.6	25.1		26.5		22.3	18.3
8C	27.2	27.6	42.3	18.1	20.6		23.4	31.6	26.4	21.6	27.3	34.3	27.3	22.4
124	24.1	21.6	31.9	18.2	16.8	13.2	16.6	19.3	24.5				20.7	17.0
126	14.7	13.8	30.8	16.8	4.4	9.8	13.7	16.3	17.9	12.2	17.0	21.5	16.8	13.8
125	17.3	17.5	30.1	17.4	13.7	11.5	14.5	15.4	15.5	14.6	19.4	22.4	17.4	14.3
10A	26.5	27.3	42.3	30.1		21.3	25.6	29.2	32.4	27.2	28.7	42.2	30.3	24.8
74f	19.4	16.6	32.0	18.0	17.8	14.7	17.6	21.0	23.3	21.6	34.7	41.8	23.2	19.1
37ai	20.1	22.5	32.6		24.9			29.7	58.0		68.8	41.7	-	-
37aii		49.9			21.0	17.2		24.0	28.1	19.6	27.1	35.1	30.5	25.0
37b	26.4	20.6	35.7	28.7	22.7	19.7	21.0	26.7		23.9	28.2	43.6	27.0	22.2
37c	19.9	19.2	29.5	18.7	14.7	10.0	13.7	18.7	23.9	14.6	19.3	34.4	19.7	16.2
75e	20.2	14.0	24.6	16.4	12.2	12.7	14.5	16.2	17.9	17.9	21.5	32.5	18.4	15.1
HT1	25.1	25.2	41.4	27.9	27.8	24.0	27.2	32.3	31.0	26.8	26.0	46.2	30.1	24.7
HT2	35.3	25.8	48.4	31.6	31.3	31.6		34.1	37.9	31.4	31.5	54.2	35.7	29.3
10	22.1	27.8	20.5	26.3	21.6	18.0	20.9	19.1	21.6	19.1	27.9	34.6	23.3	19.1
140	22.6	20.3	40.2	25.4	<1.0	15.8	20.0	26.0	26.0	17.3	29.6	31.1	24.9	20.5
17a	37.3	24.0	41.2	27.6	22.2	18.2	22.4	27.9	30.7	30.7	20.9	27.0	27.5	22.6
34	17.5	14.8	26.8	14.7	9.8	8.2	11.7	14.5	14.5	13.6		30.5	16.1	13.2
8B	26.3	23.0	40.5	31.2	23.3	19.1		26.4	31.8	16.8	23.1	31.2	26.6	21.8
74g	25.1	28.5	51.9		29.9	27.0	28.9	31.0	36.3		35.5	<1.0	32.7	26.8
92	14.0	22.5	30.1	23.5	13.7	9.2		16.8	17.8	13.5	21.9	24.5	18.9	15.5

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
62A	25.7	27.9	49.1	12.0	15.8		31.2	36.0		28.8	38.9	29.4	29.5	24.2
62B		23.7	57.8	45.6	34.8	26.6	29.8	29.2		31.2		43.0	35.7	29.3
62X	33.6	41.1	59.6	37.5	33.8	32.7	33.2	39.5		37.5	56.3	65.3	42.7	35.1
130	26.5	28.3	55.7	54.8	28.0	25.1	25.1	29.0	35.7	32.9	42.7	40.0	35.3	29.0
38	22.1	22.0	27.4	20.6	<0.1	15.0	18.0	20.4	22.5	14.2	19.5	31.7	21.2	17.4
42	7.2	8.7	15.4	10.7	7.2	4.3	7.7	8.7	18.2	6.8	11.6	16.1	10.2	8.4
8	13.9	12.4	31.7	23.1	17.4	13.4	15.0	18.5	21.8	16.1	21.2	23.3	19.0	15.6
79E	18.2	13.5	31.0	21.6	14.4	14.7	16.2	19.0	21.0	14.4	18.9	25.2	19.0	15.6
62C	27.3	23.9	41.5	30.9	24.1	20.6	25.1	19.0	35.6	21.5	37.2	36.1	28.6	23.5
49		21.4		31.3	27.2	17.0	25.8	32.6	36.5	24.0	25.7	41.3	28.3	23.2
135b	33.9	31.1	40.6	31.6	17.7		31.8	44.2	53.4	23.1	30.3	43.4	34.7	28.5
136	20.7	19.3	37.6	30.7		12.8	18.9	21.1	26.4	18.7		37.2	24.3	20.0
95	23.2	11.4	32.8	21.7				71.5	23.2	18.9		43.0	24.9	17.5
96	30.5	13.5	41.4	32.4	24.7	17.2	19.4	28.9	29.4	23.9	29.5	37.8	27.4	22.5
27		21.4	45.1	30.7	23.6	19.0	28.7	32.8		21.3	26.6	42.2	29.1	23.9
47	33.2	24.8	41.5	34.9	26.5	22.3	26.5		32.7	23.0	29.1	42.9	30.7	25.2
24		48.4	55.6	43.1	40.6	43.0		43.6	36.3	32.9	42.5	57.1	44.3	36.4
33b	23.7	21.2	36.5	25.0	21.1	16.4	19.5	29.2	27.9	27.9	37.6	42.9	27.4	22.5
33a	27.3	24.5	34.6	28.8	24.6	19.6	25.0	28.3	29.8	20.3	30.8	41.3	27.9	22.9
33	29.9	33.8	32.7	25.2	22.7	25.3	24.5	28.5	35.5	27.3	55.7	49.0	32.5	26.7
SH1	29.6		44.7	35.3	27.4		21.7	30.4	37.7	28.8	35.4	44.3	33.5	27.5
144	27.1	27.6	47.3	32.1	33.6	29.2	34.7	34.5	29.4	31.1	34.0	40.8	33.6	27.6
142	25.9	28.6	37.8	20.6	22.0	14.3	18.8		26.3	18.8	38.1	30.9	25.6	21.1
141	25.0	23.7	39.7	21.9	16.0	17.8	19.6	29.9	24.3	21.2	29.9	32.3	25.1	20.6
75d	17.8	14.0	30.9	24.0	18.4	12.4	16.2	21.7	22.5	15.1	20.7	30.9	20.4	16.7
28e	25.0	22.8	36.1	20.9	17.9		18.0	21.7	21.4	18.8	24.1	34.9	23.8	19.5
10c	21.9	21.0	36.1	31.3	25.7	17.8	22.3	29.4	28.1	23.6	20.6	33.1	25.9	21.3
3b	35.3	34.0	39.6	37.3	32.4	32.7	28.8	35.0	35.6	32.8	41.2	49.0	36.1	29.7
3	41.6		48.1	45.3	37.1	32.7	31.7	42.4	43.1	31.8	42.3	49.8	40.5	33.3
162	19.2	13.2	19.6	14.5		<1.0		10.9	14.3	9.9	12.9	24.1	16.1	11.0
2	39.0	38.5	54.2	43.7	39.9	38.7	39.8	47.4	43.1	41.2	40.2	54.5	43.4	35.6
28d	33.2		41.9	29.1	29.3	27.1	29.0	31.5	32.7	25.9	6.5	48.0	32.8	26.9
28b	35.6	28.5	49.8	26.9	16.1	18.8	29.1	40.6	45.0	26.0			31.6	26.0
28c	22.3	21.7	34.8	24.6	30.2		22.9	27.3	30.8	19.0		31.3	26.5	21.7
127	15.2	18.4	24.0	21.5	14.3	9.9	14.5	19.5	20.9	20.6	42.5	25.4	20.6	16.9

Site ID	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted (1)
91	19.2	23.9	31.8	20.3	13.4		14.8	17.9	19.0	16.4	22.0	28.4	20.6	17.0
36	24.7	20.4	35.9	24.7	<0.1	17.9	20.4	22.8		19.3	25.4	40.3	25.2	20.7
CO-LOCATED TUBES														
CL1	29.6	26.4	38.2	38.4	31.2	21.4	30.6	33.2	35.1	27.7	29.7	38.7	-	-
CL2	26.7	31.3	37.7	36.5	30.2	23.5	29.4	35.1	34.1	29.7	36.8	21.2	-	-
CL3	30.2	29.1	40.6	35.8	30.3	22.6	28.1	30.9	33.0	27.9	34.0	41.0	31.6	25.9
CL4	25.7	19.0		19.5	16.8	16.4	15.3	18.3	20.0	18.2	17.3	33.7	-	-
CL5	25.9	14.6		21.9	17.4	15.9	16.2	17.9	17.7	16.8	18.3	29.3	-	-
CL6	24.2	18.6		21.5	16.9	13.5	17.1	18.7	21.2	15.0	18.6	30.3	19.6	16.1
CL7	29.0	16.4	37.6	19.5	19.0	17.8	16.5	19.6	18.6	20.9	24.8	35.4	-	-
CL8	30.5	24.9	6.8	11.7	19.1	19.9	18.9	21.3	19.9	20.7	27.6	23.0	-	-
CL9	27.5	20.2	34.4	18.8	17.9	17.6	18.8	21.2	18.8	21.3	<1.0	51.9	23.4	19.2
CL10	26.3	13.0	33.2	17.2	21.3	22.0	22.0	21.1	28.3	23.1	30.5	37.4	-	-
CL11	33.3	26.3	33.8	21.6	20.2	22.3	20.2	21.6	21.9	22.1	30.1	39.9	-	-
CL12	33.4	22.8	32.6	22.7	21.7	20.6	21.1	23.1	28.1	20.0	29.3	37.6	25.6	21.0
CL13	36.8	35.9	47.7	32.8	28.5	30.9	31.0	37.2	34.9	33.8	36.2	42.8	-	-
CL14	36.4	26.8	44.3	1.1	60.3	30.8	30.8	34.1	32.6	34.5	37.1	48.9	-	-
CL15	33.7	28.5	26.8	26.9	30.2	32.9	29.5	37.6	28.9	34.2	35.3	46.8	35.2	28.9
CL16	37.4	25.0	41.3	23.9	13.8	19.8	25.3	23.6	28.6	22.4	29.6	40.3	-	-
CL17	35.1	21.5	38.1	27.5	22.0	19.6	25.1	28.0	29.5	20.7	27.2	40.9	-	-
CL18	30.8	32.4	41.5	29.2	23.3	18.1	25.5	28.5	30.5	22.4	30.4	38.1	28.2	23.2

Notes:

(1) See Appendix C for details on bias adjustment

(2) Cells highlighted in yellow indicate potentially erroneous data due to issues identified with the diffusion tubes upon collection. These concentrations have not been used in the calculation of annual averages.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

New or Changed Sources Identified Within the City of Edinburgh Council During 2022

The Forth Green Freeport (FGF), which includes the ports at Leith (Port of Leith) and Edinburgh Airport, was shortlisted by UK and Scottish Governments, for freeport status in Scotland. A consortium of private and public sector partners is now working to develop the business cases. It is proposed that the governance arrangements include a new operating company, with a board who will be responsible for promoting and monitoring compliance with environmental standards, amongst other matters. With part of the freeport being within the Salamander Street AQMA and adjacent to the Great Junction Street AQMA, it will be necessary to consider relevant air quality impacts as plans develop, in terms of road, shipping, industrial and fugitive sources.

Additional monitoring will need to be considered around the Salamander Street AQMA and specifically to the west of Leith docks. It remains that the scope of the City-Wide Detailed Assessment for Particles 2016 that led to the declaration of the AQMA, did not consider residential premises in this area, as there were no relevant receptors. With residential properties now developed, under construction and proposed, the feasibility of such monitoring in the area is being considered. Tram construction was works have been completed.

Monitoring will need to continue in and adjacent to the Central and Glasgow Road AQMAs where new developments are planned or have permission.

Additional Air Quality Works Undertaken by The City of Edinburgh Council During 2022

The City of Edinburgh Council has not completed any additional works within the reporting year of 2022.

QA/QC of Diffusion Tube Monitoring

City of Edinburgh Council's diffusion tubes in 2022 were supplied and analysed by Edinburgh Scientific Services (ESS), using the 50% Triethanolamine (TEA) in acetone preparation method. ESS's laboratory is UKAS accredited, participating in the AIR-PT Scheme for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high caliber. In the AIR-PT results available for 2022, AIR PT AR049 (January – February 2022) ESS had no results reported, in AIR PT AR050 (May – June 2022), ESS scored 50%, and in AIR PT AR045 and AR046 (July – August 2022), September – October 2022) ESS scored 100%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of $< \pm 2$.

The Council currently operate six co-location studies, and within 2022 all co-location studies which use tubes supplied by ESS with the 50% TEA in acetone preparation method in 2022 were rated as 'good', as shown by the precision summary results. This precision reflects the laboratory's performance and consistency in preparing and analysing the tubes, as well as the subsequent handling of the tubes in the field. Tubes are considered to have a "good" precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more monitoring periods during a year is less than 20%.

Monitoring in 2022 had been completed in adherence with the 2022 Diffusion Tube Monitoring Calendar, whereby most changeovers were completed within ±2 days of the specified date.

Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. As such, 10 sites operated by City of Edinburgh Council required annualisation in 2022. This was conducted using the latest version of the Diffusion Tube Data Processing Tool utilising data from the three nearest automatic background monitoring sites part of the AURN. These sites, alongside the details of the calculation method undertaken, are provided in Table C.2.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data has been corrected using a bias adjustment factor, which is an estimate of the difference between diffusion tube concentration and continuous monitoring, the latter assumed to be a more accurate method of monitoring. Defra LAQM.TG(22) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

With regard to the application of a bias adjustment factor for diffusion tubes, Defra LAQM.TG(22) and the LAQM Helpdesk recommend the use of a local bias adjustment factor where available and relevant to diffusion tube sites.

Edinburgh City Council have applied a combined bias adjustment factor (using both the local co-location studies and the national co-location study at Marylebone Road) of 0.82 to the 2022 monitoring data. A summary of bias adjustment factors used by Edinburgh City Council over the past five years is presented in Table C.1.

Edinburgh co-locates triplicate tubes on the sampler head cages at roadside and kerbside monitoring stations – Glasgow Road, Gorgie Road, Queensferry Road, Salamander Street, St John's Road and Nicholson Street. Due to low data capture at Glasgow Road monitoring stations, the co-located triplicate tubes are not considered in the calculation of the local bias adjustment factor. Data from the other five co-location sites were considered for the co-location study 2022. These were calculated using the Diffusion Tube Data Processing Tool, with the outputs presented in

Table C.3. Generally, the passive diffusion tubes give higher concentrations than the real-time analysers over an annual period.

The national bias adjustment factor for ESS in 2022, obtained from the national bias adjustment spreadsheet (v06/22) is 0.81 (based on one study), as presented in Figure C.1.

It is recommended by Defra LAQM.TG(22) and the LAQM Helpdesk that the local bias adjustment factor should be used where available and relevant. Historically, City of Edinburgh Council has used a combined factor of the local co-location sites, and any additional co-location sites used within the national study. All local co-location sites, with the exception of Glasgow Road, reported good data quality and data capture within 2022. The five sites with good data quality and data capture are therefore able to be used in combination to calculate the combined bias adjustment factor alongside using additional national study sites at Marylebone Road. The combined factors were calculated using the methodology stated within LAQM.TG(22) for calculating an average bias factor. A factor was calculated utilising only City of Edinburgh Council's co-location sites with good data quality, data capture, and the additional national study site at Marylebone Road.

$$\frac{1}{(\frac{(0.24 + 0.19 + 0.29 + 0.18 + 0.19 + 0.23)}{6} + 1)} = 0.82$$

This factor also remains in-line with historical factors used in recent-past by City of Edinburgh Council.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	Local	-	0.82
2021	Local	-	0.84
2020	Local	-	0.84
2019	Local	-	0.84
2018	Local	-	0.90

NO_2 Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table C.4.

Fall-off with distance calculations were required at three sites where annual mean NO_2 concentrations were greater than 36 µg/m^3, and the site is not located at relevant exposure. This was completed using the latest version of the Diffusion Tube Data Processing Tool, and the output from this is presented in Table C.4.

QA/QC of Automatic Monitoring

All monitoring stations are subject to an independent audit and stringent QA/QC procedures which are undertaken by Ricardo on behalf of the Scottish Government. This agreement commenced in 2007 (2013 for Currie). In addition, all data, including calibration data, are scrutinised on a daily basis by the Council (Monday to Friday) by visual examination, to check for any unusual measurements. Any suspicious data (e.g. large spikes) are flagged to undergo further checks.

Staff competence

Officers are trained as local site operators in relation to the management of the stations and undertake the necessary calibrations and basic maintenance. Shadow training is carried out where appropriate during half yearly audits (performed by Ricardo E&E).

Calibration procedures

The two ML 9841 B NO_x analysers (located at Glasgow Road and Salamander Street) perform a daily auto-calibration. Warning limits are set at +/- 5 % on the software program.

All sites including those listed above are visited fortnightly, apart from the National Network site of St Leonards which is managed as part of the AURN and is visited monthly.

Manual calibration checks are preformed using zero air/scrubber and certified NO gas at approximately 500ppb. All cylinders are replaced at 12 to 18-month intervals. Nitric Oxide cylinders are supplied by BOC.

Details of manual calibration checks, and precision and accuracy of instruments can be made available on request.

Servicing

All instruments are serviced and recalibrated every six months by an appropriate supplier. The service contracts include a support package for software and replacement parts, plus any necessary call outs to the sites.

Filters are changed on the Fidas instruments every six months. Servicing follows half yearly audits completed by Ricardo.

During all visits to the monitoring stations, actions taken and activities noted adjacent to the site are recorded in the site log book.

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

PM_{10} Concentrations monitored using TEOMs have been adjusted using Edinburgh's Gravimetric Factor of 1.14.

Following Scottish Government Guidance Note in May 2023 in relation to the measurement of ambient Particulate Matter (PM_{10} and $PM_{2.5}$) and the LAQM reporting of measured concentrations, correction factors are applied to data monitored by the Fidas 200 instrument. All the eight sites monitoring PM_{10} and $PM_{2.5}$ are currently utilising FIDAS 200, so the below correction factors are applied:

- Fidas 200 PM10 data collected within the SAQD should be corrected by dividing ratified data (provided by the Air Quality in Scotland website) by 0.909.
- Fidas 200 PM2.5 data collected within the SAQD should be corrected by multiplying ratified data (provided by the Air Quality in Scotland website) by 1.06.

Automatic Monitoring Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. As such, one automatic monitoring site (Glasgow Road) required annualisation in 2022 for NO_2. This was carried out in accordance with the methodology set out in

LAQM.TG(22), utilising data from the three nearest automatic background monitoring sites part of the AURN. These sites, alongside the details of the calculation method undertaken, are provided in Table C.2.

No annualisation of PM_{10} or $PM_{2.5}$ data was carried out, as data capture for 2022 was either less than 25%, or greater than 75%, at all monitoring locations.

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations within City of Edinburgh Council required distance correction during 2022.

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor Edinburgh St Leonards	Annualisation Factor Bush Estate	Annualisation Factor Peebles	Annualisation Factor Glasgow Townhead	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
23	0.9891	1.0932	1.0166	1.0378	1.0342	25.5	26.3	
22a	0.9362	0.9871	0.8167	0.8270	0.8918	32.6	29.1	
4a	0.7675	0.8076	0.7140	0.7585	0.7619	20.8	15.8	
79	1.1013	1.1931	1.3841	1.2815	1.2400	17.2	21.3	
25b	0.9762	1.0545	1.1026	1.0246	1.0395	25.3	26.3	
21	0.9622	1.0341	1.0966	1.0148	1.0269	24.0	24.6	
90F	1.0112	1.0425	1.1518	1.0942	1.0749	21.9	23.5	
6a	0.9116	0.9561	1.0946	1.0357	0.9995	19.0	19.0	
95	0.8604	0.9034	0.8216	0.8411	0.8566	24.9	21.3	
162	0.8490	0.8573	0.8000	0.8370	0.8358	16.1	13.4	
ID10	1.018	1.077	1.212	1.14	1.111	15.1	16.8	

Table C.3 – Local Bias Adjustment Calculations

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	12	9	10	12	12
Bias Factor A	0.81 (0.75 - 0.87)	0.84 (0.76 - 0.94)	0.78 (0.69 - 0.88)	0.85 (0.78 - 0.92)	0.84 (0.78 - 0.91)
Bias Factor B	24% (14% - 34%)	19% (7% - 32%)	29% (13% - 45%)	18% (9% - 27%)	19% (10% - 28%)
Diffusion Tube Mean (µg/m^3)	32.1	19.8	21.8	28.2	34.8
Mean CV (Precision)	5.1%	6.9%	5.6%	6.0%	6.3%
Automatic Mean (µg/m^3)	25.8	16.6	16.9	23.9	29.3
Data Capture	98%	95%	99%	100%	100%
Adjusted Tube Mean (µg/m^3)	26 (24 - 28)	17 (15 - 19)	17 (15 - 19)	24 (22 - 26)	29 (27 - 32)

Notes:

A combined local bias adjustment factor of 0.82 has been used to bias adjust the 2022 diffusion tube results.

Table C.4 – NO_2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted)	Background Concentration	Concentration Predicted at Receptor	Comments
64	1.5	10.7	41.3	11.3	28.4	
69J	1.4	10.0	37.3	11.3	26.2	
24	1.0	11.2	36.4	21.7	29.2	

Figure C.1 – National Bias Adjustment Factor

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/23

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadhseet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of September 2023

LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List

If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List

If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List

If a year is not shown, we have no data[2]

Step 4:

Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.

If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[5] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m^3)	Automatic Monitor Mean Conc. (Cm) (µg/m^3)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Edinburgh Scientific Services	50% TEA in acetone	2022	KS	Marylebone Road Intercomparison	12	52	42	22.9%	G	0.81
Edinburgh Scientific Services	50% TEA in acetone	2022		**Overall Factor[3] (1 study)**				**Use**		0.81

Figure D.1 – Automatic Monitoring Locations

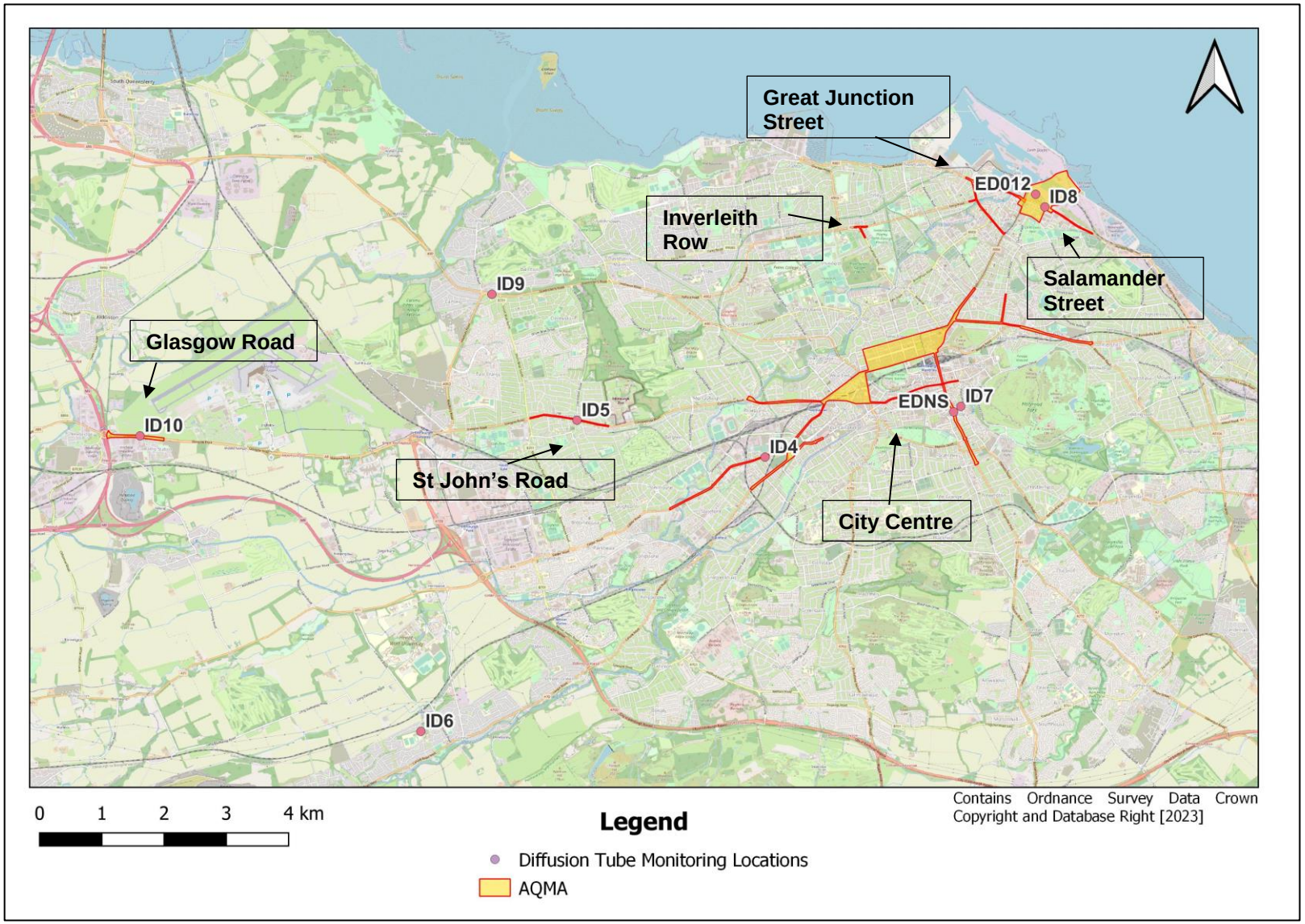


Figure D.2 – Diffusion Tube Locations: City Centre AQMA

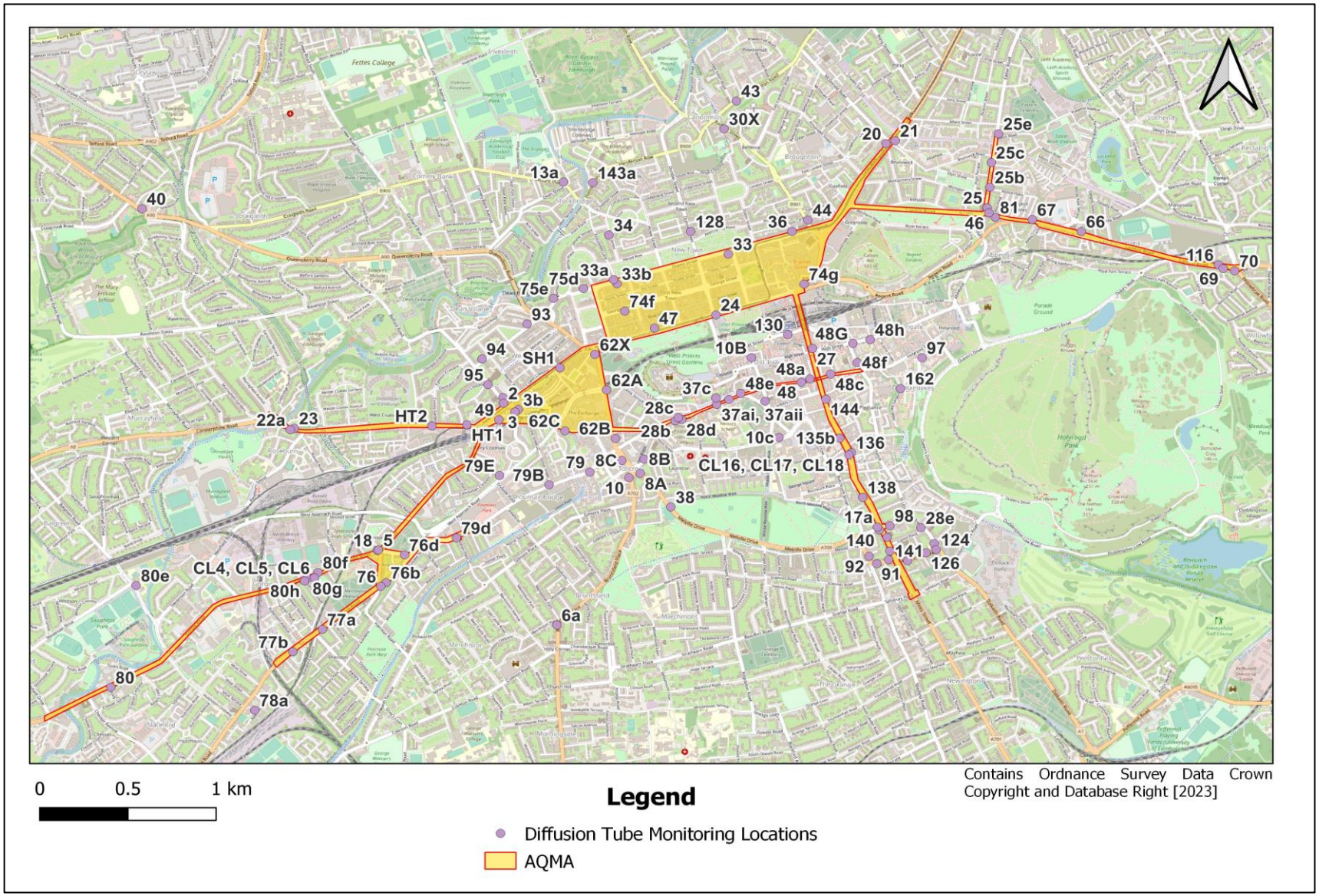


Figure D.3 – Diffusion Tube Locations: Glasgow Road AQMA

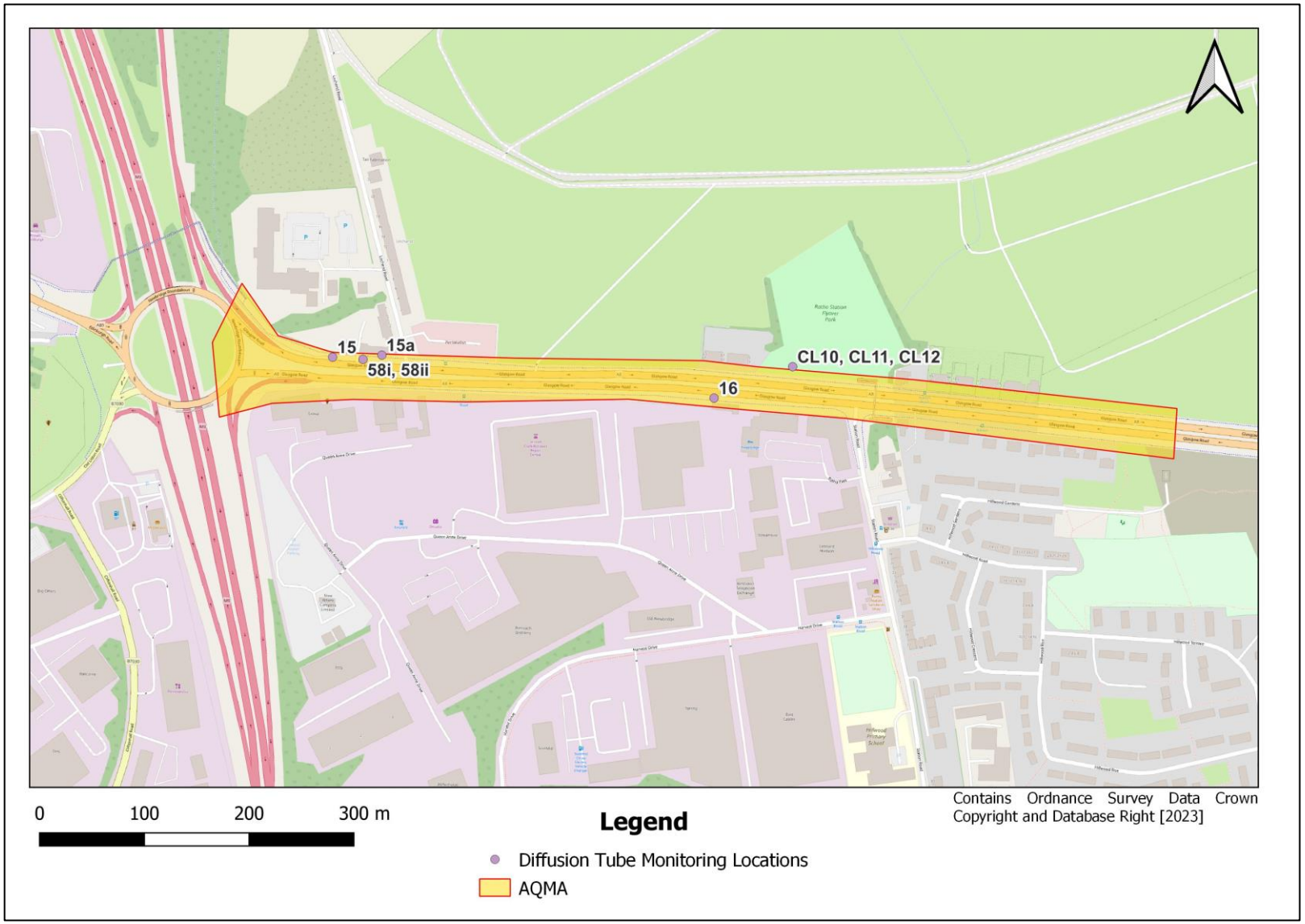


Figure D.4 – Diffusion Tube Locations: Inverleith Row AQMA

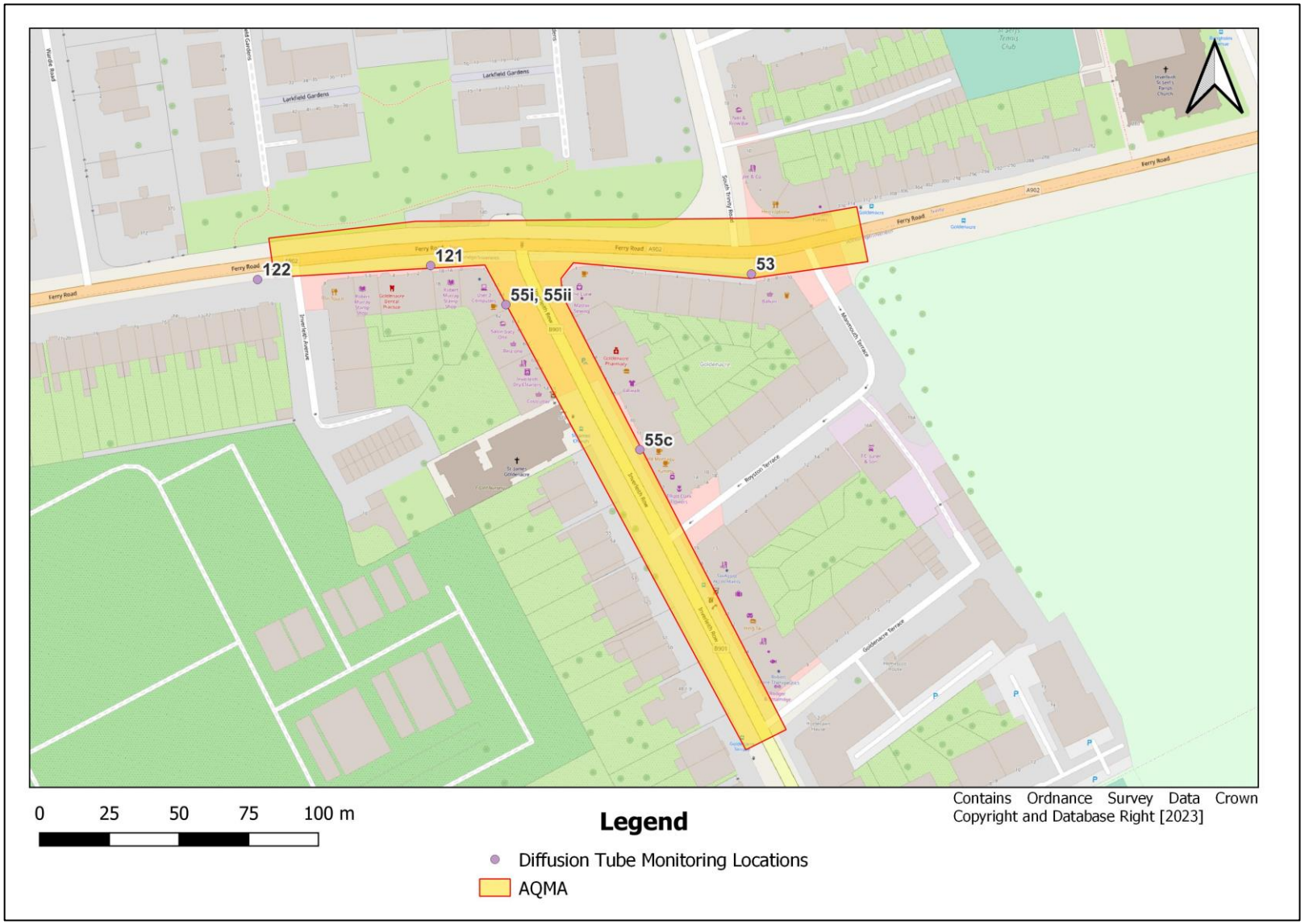


Figure D.5 – Diffusion Tube Locations: Great Junction Street and Salamander Street AQMAs

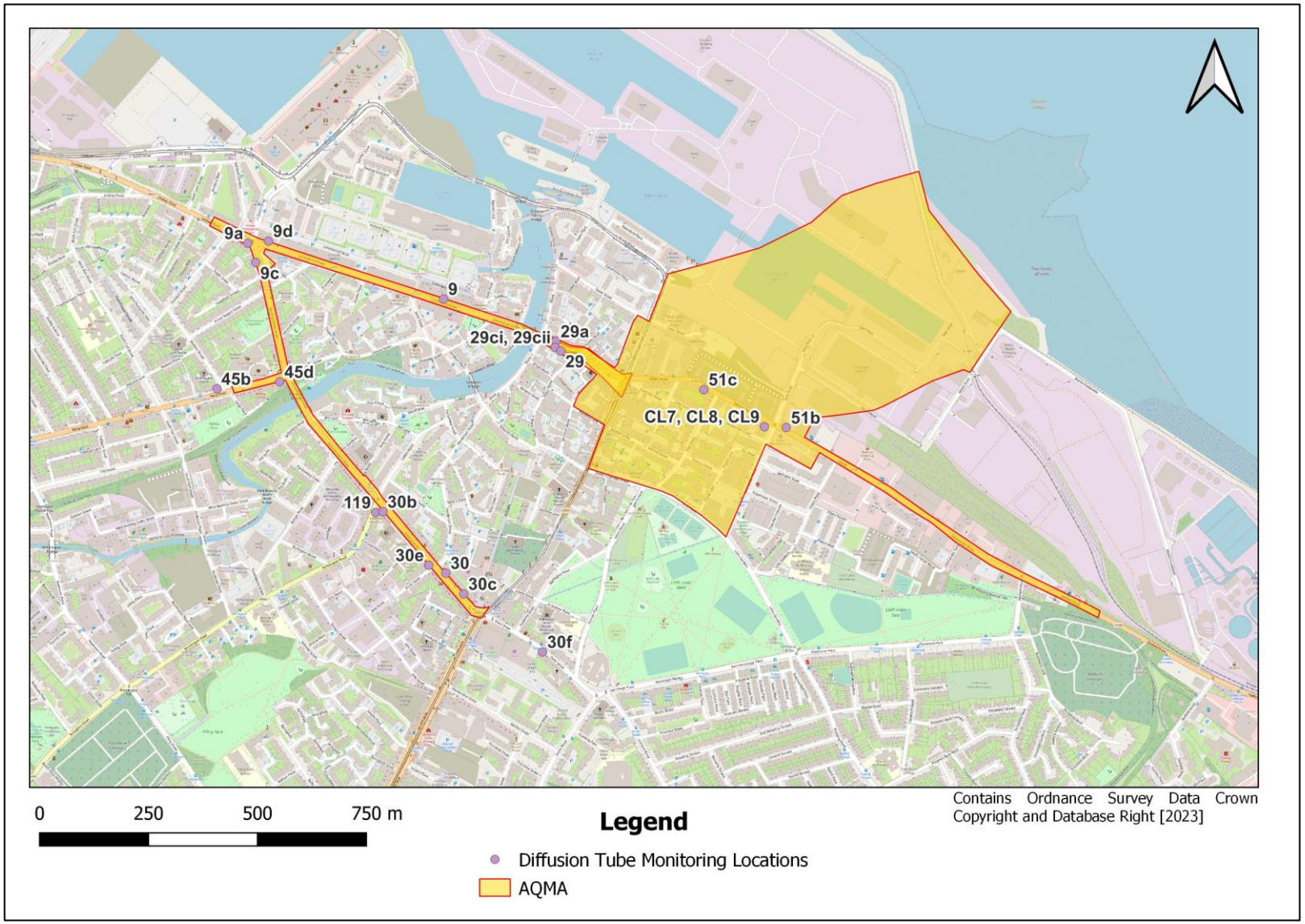


Figure D.6 – Diffusion Tube Locations: St John's Road

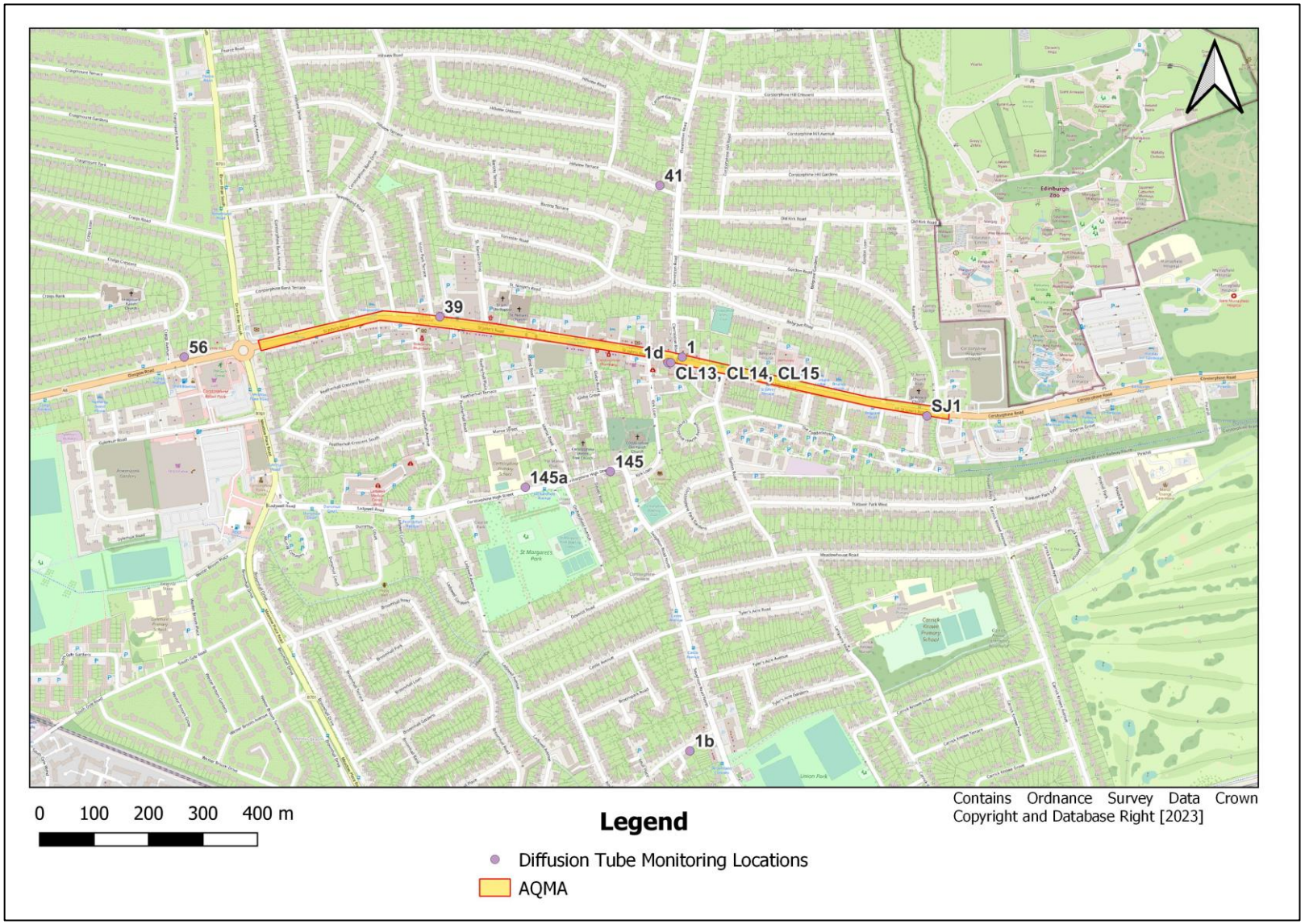
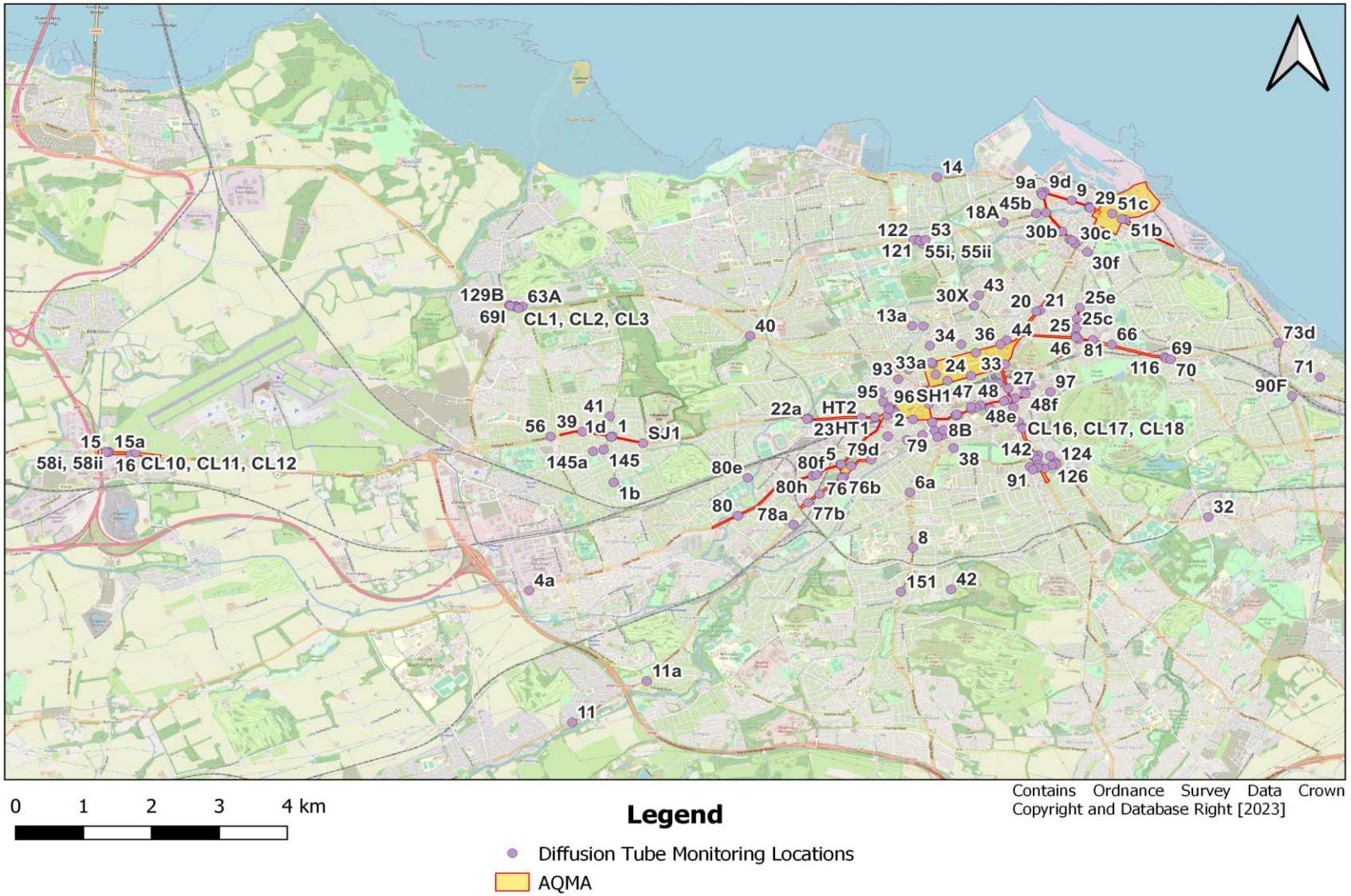


Figure D.7 – Diffusion Tube Locations: Overview



Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA 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
APR	Air quality Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
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
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

End