Annual Progress Report (APR)

East Ayrshire Council
Comhairle Siorrachd Àir an Ear

2024 Air Quality Annual Progress Report (APR) for East Ayrshire Council

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

Local Air Quality Management

October 2024

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Executive Summary: Air Quality in Our Area

Air Quality in East Ayrshire

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Short-term increases in levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality.

Air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas. The annual mortality of human-made air pollution in the UK is roughly equivalent to between 28,000 and 36,000 deaths every year. It is estimated that between 2017 and 2025 the total cost to the NHS and social care system of air pollutants (fine particulate matter and nitrogen dioxide), for which there is more robust evidence for an association, will be £1.6 billion.

East Ayrshire is one of 32 Council areas designated in Scotland. The area shares borders with Dumfries and Galloway, East Renfrewshire, North Ayrshire, South Ayrshire and South Lanarkshire.

Situated in south west Scotland, East Ayrshire has a varied natural environment, a rich and high profile cultural heritage, a proud industrial history and a range of activities, recreation and hospitality, which attract residents and visitors alike.

East Ayrshire is strategically located between the M77 corridor from Glasgow and the M74 from Glasgow to the north of England. Kilmarnock is 20 minutes by car from Glasgow and 40 minutes from Glasgow Airport. It is also only 15 minutes from Prestwick Airport, which has much to offer in terms of business and leisure travellers, and its freight operation.

The Council area is approximately 490 square miles and boasts a variety of charming inland landscapes and waterways. Approximately 37% of the Council area falls within the Local Landscape Area (LLA)/ Sensitive Landscape Character Areas (SLCAs), there are 20 Sites of Special Scientific Interest (SSSI), and 4 internationally important designated nature conservation sites, namely Airds Moss and Merrick Kells Special Areas of

Conservation (SAC) and the Muirkirk and North Lowther Uplands Special Protection Area (SPA) are 2 reserves in East Ayrshire managed by the Scottish Wildlife Trust (SWT), Knockshinnoch and Dalmellington Moss, and one Local Nature Reserve (LNR) in the Council area, Catrine Voes and Woodlands, which includes a series of reservoirs, broad leaved woodland and scrubland as well as archaeological and cultural interest.

The Council area is a mixture of rural and urban environments, with approximately 120,600 people residing there (2020 estimated census statistic), thus it is the 16th most habituated local authority in Scotland of the 32 unitary council areas. The largest urban area is the town of Kilmarnock where approximately 47,040 people live, followed by Cumnock with approximately 8,830 people residing there. Other population centres across the Council area are Stewarton, Darvel and Hurlford.

The main source of pollution in the Council area is from road traffic emissions originating from the extensive road network, with heavily trafficked locations in the urban, northern areas of the Council district, particularly Kilmarnock, contributing significantly.

Additionally, car ownership in households in East Ayrshire is higher than the national average; in 2022, 15% of the population reported not having access to a car in East Ayrshire compared to 20% for Scotland respectively, as reported by the Scottish Government Road Vehicles Statistics. It is noted that major congestion does not occur often in the Council area, excluding the densely populated area of Kilmarnock, with the majority of the vehicles starting and/or ending journeys elsewhere and are therefore through-flow traffic, with the Department for Transport reporting that 698.4 million vehicle miles were travelled on roads in East Ayrshire in 2023.

General pollution sources in East Ayrshire include commercial, industrial, and domestic sources all contributing to pollutant concentrations in the area. Specific sources include:

- General increase in the number of road vehicles and volume of journeys travelled
- Tyre and break-wear dust (non-tailpipe emissions) forming an increasing proportion of total vehicular particulate emissions
- Transboundary migration of pollutants
- Increased biomass combustion from log burners and incorrectly operated biomass boilers

• A disparity between laboratory and real-world emissions from vehicle engines, although real driving conditions are now part of vehicle emission assessments

• Topography and spatial planning of urban areas creating street canyons, which can trap air pollution close to ground level

• Limited integration of air quality with other policies related to climate change and planning, although progress is being made

East Ayrshire Council's Environmental Health Service have an established relationship with the Planning Department given air quality is a material consideration in planning processes, thus applicants must ensure that developments or installations will improve air quality, or, have a minimum impact on air quality.

Planning officers require applicants to engage in pre-planning discussions with the Environmental Health Service, seeking to improve awareness and understanding of upcoming developments in the Council area and limit planning refusals on air quality grounds.

East Ayrshire Council's Environmental Health Team have an established relationship with the Transport Department, where changes in traffic flow are considered and new developments are reviewed for the impact on air quality. Road improvements introduced by the Transport Department have had positive impact on air quality in the Council area, for example implementation of smart traffic lights.

East Ayrshire Council have a sound relationship with Scottish Environment Protection Agency (SEPA) and Transport Scotland as well as neighbouring local authorities, often acting as joint consultees or working on an ad-hoc basis. The Council often undertakes pre-planning discussions with SEPA when air quality issues arise during planning processes to agree a response to the application.

Due to East Ayrshire Council's consistent years of no reported exceedances of the annual mean NO_2 Air Quality Standard (AQS) of 40µg/m^3, the area is considered to have good air quality. As a result of this, there are no declared Air Quality Management Areas (AQMAs) within the Council area.

The Council continues to review its monitoring network, having reduced the number of deployed tubes in 2022 monitoring year, removing seven tubes (DT45, DT46, DT52,

DT53, DT54, DT55, and DT57) compared to 2021 due to consistently low concentrations reported in those locations and alternate sites located within reasonable proximity.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

Within East Ayrshire Council, since the initiation of the passive monitoring network, there has been only two sites (DT45 and DT56) that have exceeded the AQS annual mean objective of 40µg/m^3 for NO_2 in 2017, of which have since fallen significantly below the AQS. As a result, there are currently no designated Air Quality Management Areas (AQMAs) therefore an Air Quality Action Plan (AQAP) is not required. Additionally, there are currently no plans to produce an Air Quality Strategy for the area.

The air quality across East Ayrshire is considered good, with air quality in 2023 displaying complete compliance with the AQS and following the same trend for previous years of monitoring. The Council continue to monitor and assess the results for the coming year within the NO_2 diffusion tube network.

As part of the East Ayrshire Council's commitment to reduce the impacts of, and tackle climate change, the Council continues to progress and aim to hit net-zero carbon emissions by 2030 and by 2045 for wider communities across the area. In 2021, East Ayrshire Council developed the Climate Change Strategy, setting out various actions within four core themes (Energy, Transport, Waste and Natural Environment), to reduce CO2 emissions, of which also have shared benefits in improving air quality through reducing both NO_2 and PM emissions.

East Ayrshire Council is developing and has implemented the following measures as part of the strategy:

- Implementation of publicly accessible and Council fleet Electric Vehicle (EV) charging points;
- Adoption more frequent circular economy approaches to minimise waste and emissions released from landfill sites;
- Promotion of active transportation methods to limit vehicular usage and associated emissions;
- Enhanced community resilience through encouraging businesses, third sector organisations and charities to adopt sustainable procurement policies and

encourage people to grow their own produce in community allotments to cut food miles; and,
- Building greener communities that consider appropriate planting strategies, conserving and expanding natural habitats to offset pollutant emissions.

In support of the Climate Change Strategy, East Ayrshire Council have committed to support the Council's Net Zero Action Plan, as well as adopting the Net Zero Public Sector Building 2021 standard where possible, and agreed to improve the fabric of existing housing stock with the emphasis being on energy efficiency.

East Ayrshire Council actively encourages developers at the pre-planning and planning stages to install electric charging points or consider suitable infrastructure to allow for future cost efficient installations.

East Ayrshire Council confirms the collaborative relationship with neighbouring local authorities South Ayrshire Council via the Ayrshire Roads Alliance. Through this collaboration they have partnered with an experienced commercial supplier enhance its programme of publicly funded and managed charging points for Electric Vehicles (EV) across the area.

The Ayrshire Roads Alliance (ARA) has also produced an Electric Vehicle Infrastructure Strategy (EVIS) and action plan for East Ayrshire that will: develop a widespread EV charging network to support communities, businesses and visitors using EVs; identify and provide solutions where no off-road parking exists; and work on solutions to improve air quality.

Aligned with Scottish Government climate change targets, East Ayrshire Council are required to ensure that new fleet vehicles (i.e., cars and vans) are zero-emission from 2025, with all new Heavy Goods Vehicles (HGVs) reaching the same target by 2030. The Council have produced a Transformation Strategy to assist with the phase-out of petrol/diesel powered fleet vehicles and have been replacing fleet vehicles since February 2019 supported by their collaborative relationship with Transport Scotland.

East Ayrshire Council has encouraged active travel across the area and subsequent reduction in vehicular usage, through its established Clean Green awards and this years ‘Journey to Jupiter’ initiative in primary schools. Journey to Jupiter, an active travel initiative funded by the Climate Change Fund involves Early Years Centres and schools. The aim of the project is to get young people walking to school, in a bid reduce carbon emissions in East Ayrshire, while also decreasing congestion at school gates and

promoting active travel. The latest round of this project ran from 26 September until 14 June 2024. All the centres and schools participating earned S-Miles to send a rocket all the way to Jupiter. 724724 S-miles were covered by the participating schools exceeding the target for the year and preventing around 200MT of CO2 being released into the atmosphere. 64% of children walk/cycle to school in East Ayrshire, which is higher than the Scottish average of 53.7%.

East Ayrshire Council has established a collaborative relationship with the bicycle mechanic business 'CycleStation' (Home ⋆ Cycle Station) who host free sessions for locals to check that their bikes are safe and make minor maintenance adjustments to get them on the road. The company also provide a recycling bike service to limit waste, breakdown and recovery service and community outreach projects for schools to teach bicycle maintenance and cycling proficiency. CycleStation also offer an innovative bike sharing service with a bike hire fleet to encourage active transportation. In addition, All Ability bikes (LDAW All Ability Bikes | East Ayrshire Council News (east-ayrshire.gov.uk)) launched an initiative in 2022 and has continued into 2023 at Cumnock Juniors Football Park and offer children, young people and adults who have a physical or learning disability, or have impaired balance, the chance to fully participate in the fun and freedom of cycling.

East Ayrshire Council has maintained to promote the Kilmarnock Active Travel Hub (Kilmarnock Active Travel Hub :: Active Travel Hub Portal (athubnetwork.co.uk)), an innovative service that encouraged sustainable travel such as walking, cycling, and public transport, throughout the area and launched in 2017. The Hub run events and activities to engage the local public as well as tourists, promoting 'Cycle to Work' schemes with support offered on developing a workplace pool bike initiative and advice on funding, training and active travel awards available to workplaces.

East Ayrshire Council have been improving existing active travel walking and cycling routes as well as building new multi-use routes that connect local communities. In Kilmarnock the 'Kilmarnock Green Infinity Loop' Kilmarnock Infinity Loop | East Ayrshire Leisure Trust) is being developed which will encompass 26km of active travel routes, green infrastructure and signage across the town by 2025. This route will also provide connections to the wider path network including the Core Path Network and the National Cycle Network.

East Ayrshire Council are committed to further reducing air pollution emissions through enhancing its active transportation availability in East Ayrshire as well as creating enjoyable and fair environments for locals and visitors by producing a draft ‘Active Travel Strategy’ that went through consultation in October 2021 and cabinet review in June 2022. The document seeks to work in conjunction with the established Climate Change Strategy and be a companion document for the Local Transport Strategy. The Strategy identifies three key aims and five core objectives to encourage active travel in East Ayrshire: Safety, Leisure and Tourism, Developments, Connectivity, and Workplaces and Schools, as well as providing the basis for an Active Travel Action Plan (ATAP) that focuses on: Routes, Infrastructure, Policy, Education and Campaigns. The ATAP would be implemented for a 10-year period, with proposed items funded by grants.

East Ayrshire Council requests that new, sizeable developments provide a Travel Plan in support of the planning application, to mitigate against air pollution impacts during and post construction. Where developments include biomass, East Ayrshire Council screens proposals and request the applicant(s) to undertake dispersion modelling including flue height sensitivity, with low flue heights in urban areas proving problematic.

It is acknowledged that the preference of the Environmental Health Service is that biomass should not be used in urban areas connected to the gas grid, aligned with Scottish Government guidance. It is noted that in specific circumstances, a formal objection may be considered where grounds support. Plans likely to encourage air quality nuisance complaints are likely for refusal, such as poorly sited log burners and certain types of biomass boilers. Applications for biomass boilers that replace oil or coal installations, and which may lead to an improvement in air quality, will be considered favourable. However, screening using the biomass-screening tool is to be completed, and if necessary, the applicant will be required to undertake dispersion modelling for the application. Similar screening processes are also required for new installations off the gas grid.

Furthermore, where biomass burners are proposed in planning applications, East Ayrshire Council have supported the transition and decisional use of geothermal wells and technology such as Ground Source Heat Pumps (GSHPs) for mixed use housing, retail and leisure development. East Ayrshire Council also assess micro-location of biomass burners, for example close to trees and ground hollows, which can lead to localised nuisance issues. Applicants are required to include a planning statement of best practice

operation, with actions allowing applicants to mitigate air quality impacts before development proceeds.

Local Priorities and Challenges

East Ayrshire Council is committed to addressing challenges in the air quality sector, adhering to statutory monitoring and reporting requirements whilst seeking improvements that benefit wider climate change as well as promoting sustainable, economic development. The principal challenges and barriers to implementation of initiatives that East Ayrshire Council anticipates facing are funding and resource availability.

East Ayrshire Council acknowledges that the advancement towards and uptake of biomass based renewable technologies to mitigate climate change broadly are likely to deteriorate air quality specifically. It is recognised that historic UK road taxation policies were biased in favour of climate change and has recently encouraged procurement of diesel vehicles comparative to petrol, thus increasing concentrations of PM and NOx emissions. However, this increasing trend is in decline, with East Ayrshire Council focussed on purchasing EVs for fleet, anticipating having an all-electric fleet of cars and small vans by 2023. Therefore, seeking to improve air quality for the area and promote sustainable travel, aligned with its Climate Change Strategy.

However, procurement of such vehicle volumes is beyond Council control to an extent, with financing a legitimate concern. East Ayrshire Council have also identified a priority with regards to upscaling the differential parking charges to further encourage vehicle use with cleaner fuels, seeking to discourage Council employees vehicle usage in town centres and associated car parks instead promoting alternative forms of active travel such as cycling and public transport, as well as encouraging walking for short journeys. East Ayrshire Council also acknowledge the challenges faced with the proposed enhancement of the EV charging network across the area with regards to secured funding, time constraints, and resource availability.

East Ayrshire Council are prioritising and expect the following measures to be completed over the course of the next reporting year:

- EV Charging Infrastructure – The collaborative relationship between the Council and neighbouring local authorities South Ayrshire Council and North Ayrshire Council to enhance the programme of EV charging points across the area had been successful in the 2023 monitoring year

- EV Council Fleet – Improvement in the adoption of EVs as Council fleet across the area, to reduce vehicular emissions and overall pollutant concentrations.
- Net-Zero Housing – Provision of 18 net-zero homes in Bonnyton, Kilmarnock and approval for the development of additional net-zero homes in Bellvue Gardens, Kilmarnock.

Progress on the following measures has been slower than expected due to:

- EV Council Fleet – Extensive costs, funding requirements, resource availability and load carrying requirements have slowed progress on larger van fleet replacement by electric vehicles;
- Active Travel Strategy – Extensive consultation periods with stakeholders and wider public body as well as confirmation with regards to the definitive final design and items for development;
- EV Charging Points – Requirement for an infrastructure strategy and increased funding to implement a greater volume of EV charging points

How to Get Involved

Given the main source of air pollution within East Ayrshire is from transport sources, the public can support the reduction in air pollutant(s) release and improve air quality within the District by participating in active travel.

East Ayrshire Council have progressed additional public engagement work in 2023 through the below schemes, although the engagement schemes from 2021 are still active:

- The collaborative relationship between local public, stakeholders and the Council with regards to consultation on the East Ayrshire 'Active Travel Strategy' to improve accessibility to and encourage uptake of active transportation modes, although still in development;
- The educational initiative 'Journey to Jupiter' seeks to encourage the uptake of active transportation methods by school children and parent/guardians whilst educating them on the importance of a healthy lifestyle and aligning with objectives embedded in Climate Change Strategy;
- The collaborative relationship with neighbouring local authorities South Ayrshire Council to enhance the programme of charging points for EVs across the districts, resulting in 146 more EV charging points scheduled to be implemented;
- Investment into phasing out petrol/diesel powered Council fleet vehicles and purchasing EVs; and,
- Established relationships with local active transport business All-Ability Bikes and CycleStation to host free bike workshops for locals to ensure bikes are safe and road worthy as well as endorsement of the innovative bike sharing service further encouraging active transport and supporting the establishment of a greener, cleaner area. The following measures are possible alternatives to private travel and

actions that everyone can complete that would contribute to improving air quality within the area:

- Use public transport where available – This reduces the number of private vehicles in operation reducing pollutant concentration through the volume of vehicles and limits congestion;
- Walk or cycle if your journey allows – From choosing to walk or cycle for your journey the number of vehicles is reduced and also there is the added health benefits through exercise;
- Car/lift sharing – Where a number of individuals are making similar journeys, such as travelling to work or to school car sharing reduces the volume of vehicles on the road and therefore the amount of emissions being released. This can be promoted via travel plans through the workplace and within schools;
- Alternative fuel / more efficient vehicles – Choosing a vehicle that meets the specific needs of the owner, fully electric, hybrid fuel and more fuel efficient cars are available, and all have different levels benefits by reducing the amount of emissions being released; and
- Asking employers, schools or colleges about the possibility of developing a green travel plan

Additional information on air quality monitoring data, details on the main pollutants associated with air quality, alongside an air quality/pollution control email service available on the East Ayrshire website Air pollution · East Ayrshire Council (east-ayrshire.gov.uk)

- Active Travel Strategy, walk or cycle if this is viable. This helps limit the number or vehicles or the road and has many health benefits
- Using public transport if possible instead of driving. If it is necessary to drive, consider changing to a low polluting vehicle or using an electric vehicle, this helps limit congestion and reduces the number or private vehicles on the road (you can find more information on charging points at Charge Place Scotland)
- If you do drive, do not leave your engine idling any longer than necessary. In addition to polluting the air and producing greenhouse gases you could be served with a fixed penalty notice and make sure your car is well maintained
- Car/lift sharing, if to school/work/recreation activates etc. if you are going to the same location at the same time
- Avoiding garden bonfires – instead utilise your household bin for paper, plastics, cans and garden waste, or use your local recycling centre
- Report badly polluting business this includes buses or lorries
- Using electric powered lawn and garden equipment instead of petrol.

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1 Local Air Quality Management

This report provides an overview of air quality in East Ayrshire Council during 2023. 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 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 East Ayrshire 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 publish and implement an Air Quality Action Plan (AQAP) within the shortest possible time and no later than 12 months of the date of AQMA Designation Order. The AQAP must set out measures the local authority intends to put in place in pursuit of the objectives within the shortest possible time Measures should be provided with milestones and a final date for completion. The action plan itself should have a timescale for completion and for revocation of the AQMA. Where measures to reduce air pollution may require a longer timescale an action plan shall be reviewed and republished within five years of initial publication and then five-yearly thereafter.

East Ayrshire Council does not have any declared AQMAs. Due to the improvement in air quality within East Ayrshire Council area, the Council has no plans to declare an AQMA. Measures to mitigate and improve air quality have been undertaken consistently for numerous years and various measures have been enhanced and expanded, with new, improved measures continually being added (Table 2.2). East Ayrshire Council Environmental Health has significant involvement in planning processes, which ensures that air quality is a paramount consideration when new developments are planned. The Council acknowledge this approach is functioning and has enabled improvements in local air quality.

East Ayrshire Council has two Smoke Control Areas (SCAs) in operation, Grange Estate, Kilmarnock, and Crossdene Estate, Crosshouse, both of which have improved air quality in these areas (Figure 1).

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 East Ayrshire 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.

East Ayrshire Council agreed to submit a 'Local Development Plan 2' (LDP2) for its area in December 2022 to the Scottish Government's Planning and Environmental Appeals Division (DPEA), which encompasses air quality policies and strategies primarily informed by the wording of the Draft National Planning Framework 4 (NPF4). On 22 February 2024, East Ayrshire Council agreed to accept all the recommendations of the Examination into Local Development Plan 2 and agreed to adopt the Plan, as modified. On 4 March 2024, the Council notified Scottish Ministers of its intention to adopt the Plan and it was approved in June 2024. LDP2 replaces the East Ayrshire Local Development Plan (LDP1) 2017 and the Minerals Local Development Plan (MLDP) 2020. LDP2 covers the whole of the East Ayrshire Council area and sets out the Council's planning policy framework for all matters.

Air quality is embedded in the local plan 'East Ayrshire Local Development Plan 2' Examples of modifications detailed in the plan in relation to Climate Change include mitigating the impacts of climate change through the delivery of net zero and low carbon infrastructure. Information should demonstrate what measures will be put in place to address the climate emergency Infrastructure should be located in accessible locations and minimise the need to travel by unsustainable modes.

Modifications for air quality stated that all developers will be required to ensure their proposals have minimal adverse impact on air quality and should have regard to the mitigation hierarchy to address any impacts of their development.

- All developers will be required to ensure that their proposals have minimal adverse impact on air quality;

- Air quality assessments will be required for any proposed development which the Council considers may significantly impact upon air quality, either on its own, or cumulatively;
- Air quality mitigation measures may be required through planning conditions;
- Development that will have a significant adverse impact on air quality will not be supported; and
- This policy will be implemented in an ongoing manner over the period of 2022-2033

2.2.2 Transport – Low Emission Zones

Local authorities working with Transport Scotland and SEPA will look at opportunities to promote zero-carbon city centres within the existing LEZs structure.

East Ayrshire Council has no Low Emission Zones established within the Local Authority area. However, the Council is committed to increasing availability of active transportation throughout the area to promote healthy lifestyles and reduce air pollution, having continued to endorse the Active Travel Hub in Kilmarnock that encourages cycling, walking, adoption of public transportation and car sharing as well as ensuring all new developments provide a Travel Plan during planning processes. The Council are also developing an 'Active Travel Strategy' in partnership with Ayrshire Roads Alliance (ARA), which will work in conjunction with the established Climate Change Strategy and be a companion document for the Local Transport Strategy. The Active Travel Strategy identifies three key aims and five core objectives to encourage active travel in East Ayrshire: Safety, Leisure and Tourism, Developments, Connectivity, and Workplaces and Schools, as well as providing the basis for an Active Travel Action Plan (ATAP) that focuses on:

• Routes –new or improved Active Travel routes suggested by those responding to the engagement;

• Infrastructure – physical interventions that aim to increase rates of active travel – improving safety and/or accessibility;

• Policy – identifying ways in which adoption of specific policy measures may be able to encourage active travel;

• Education – identifying ways to achieve positive behaviour change among all road users with respect to active travel; and

• Campaigns – which may include specific initiatives such as bike loans, active travel tourism, and bike-to-work schemes.

The ATAP would be implemented for a 10-year period, with proposed items funded by grants. It has been confirmed that a second stage of stakeholder engagement on the draft Strategy is required to identify opportunities for emphasis and development of the core themes and items suggested for implementation. Overall, East Ayrshire Council are committed to improving air quality within the area by actions that also support the core themes of the Climate Change Strategy.

2.2.3 Climate Change and Air Quality

East Ayrshire Council are commitment to effective coordination between climate change and air quality policies and documentation to deliver co-benefits. The Council has an established Energy Strategy and Carbon Management Programme as well as a Climate Change Strategy (Climate change strategy · East Ayrshire Council (east-ayrshire.gov.uk)), with air quality a core consideration of the documentations, thus air quality policies and associated sustainable development are recognised as integral outcomes. East Ayrshire Council have a recognised vision statement, with the "committed to reducing its Carbon Emissions and will put CO2 emissions reduction at the core of its business activities."

The Council has also produced a 'State of the Environment Report' which details considerations of climate change and air quality, as well as alternate geographical items and concepts such as geology and soils, landscape and ecology, water environments, cultural heritage, population and human health, noise and material assets. The 'State of the Environment Report' was updated in 2024 for the Local Development Plan 2 (LDP2) under the requirements of the Environmental Assessment (Scotland) Act 2005. A Strategic Environmental Assessment (SEA) addresses the effects that LDP2 is likely to have on the environment. The overarching aim of the SEA process is to protect, and where possible, enhance the environment of East Ayrshire.

East Ayrshire Council is committed to addressing air quality concerns at the planning stage, as discussed, however it is acknowledged that a balance is required between measures seen to positively influence climate change yet deteriorate air quality. Biomass combustion has been identified by the Council as a topic blending the two environmental sectors, climate change and air quality, with East Ayrshire Council's Environmental Health preference to align with Scottish Government advice regarding the limitation and/or eradication of biomass usage in urban areas where mains gas is available. The Council

seek to establish a common goal with all development parties in East Ayrshire; improve air quality subsequently inducing improvement in climate change status.

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

In order to ensure that 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. East Ayrshire Council has taken forward a number of measures within the action plan during the current reporting year of 2023 in pursuit of improving local air quality and meeting the air quality objectives within the shortest possible time. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can also be found in the East Ayrshire Climate Change Strategy, Local Development Plan, and Transport Strategy documentation as well as previous APRs submitted.

East Ayrshire Council continues to use its monitoring network to review air quality is at a safe level, and to ensure that all residents have access to safe levels of air quality. The review and removal of monitoring locations in areas of relevant public exposure as consequence of the Council identifying continuous low NO_2 concentration recordings highlights a proactive nature which ensures that the Council are frequently reviewing monitoring locations and are able to identify areas that may/may not be of potential concern at the nearest possible opportunity so that, if required, effective mitigation measures can be implemented. This ensures that compliant levels of air quality are available to all of its residents.

East Ayrshire Council confirms the collaborative relationship with neighbouring local authorities South Ayrshire Council via the Ayrshire Roads Alliance. This has allowed collaboration with an experienced commercial supplier through a concession contract to enhance its programme of publicly funded and managed charging points for Electrical Vehicles (EV) across the area. Currently there are 65 publicly accessible EV charging points in 36 locations across East Ayrshire. Approximately 99% of Ayrshire properties without off-street parking to be within a 10-minute drive of an EV charging point.

Ayrshire Roads Alliance (ARA) has also produced an Electric Vehicle Infrastructure Strategy (EVIS) and action plan for East Ayrshire that will: develop a widespread EV charging network to support communities, businesses and visitors using EVs; identify and

provide solutions where no off-road parking exists; and work on solutions to improve air quality.

Draft supplementary planning guidance for Energy and EV Charging has been prepared in 2024 in support of LDP2. This Supplementary Guidance sets out in detail the Council's approach to renewable energy developments and electric vehicle charging infrastructure, and provides further information on the criteria against which associated developments will be assessed. As the drive for renewable energy intensifies, a clear and robust policy approach for the development of renewable energy capacity in East Ayrshire is essential. In order to achieve the Scottish Government's targets, the East Ayrshire Local Development Plan 2 (LDP2) supports a wide range of renewable energy development and aims to ensure that East Ayrshire plays its part in tackling the climate emergency and reducing greenhouse gas emissions.

Aligned with Scottish Government climate change targets, East Ayrshire Council are required to ensure that new fleet vehicles (i.e., cars and vans) are zero-emission from 2025, with all new Heavy Goods Vehicles (HGVs) reaching the same target by 2030. The Council have produced a Transformation Strategy (East Ayrshire Performs Summary Report (east-ayrshire.gov.uk)) to assist with the phase-out of petrol/diesel powered fleet vehicles and have been replacing fleet vehicles since February 2019 supported by their collaborative relationship with Transport Scotland and intend to make sure that all new fleet cars and vans should be zero emission from 2025, with all new HGVs reaching the same target by 2030. 101 of East Ayrshire Fleet cars and small vans are now electric and East Ayrshire is on track for having a fully electric fleet.

High cost and load carrying requirements mean that larger van fleet is not yet ready to be replaced by entirely electric vehicles. However, 72 of these vans have been replaced with the most efficient Euro 6 engine standard before being replaced by electric vans from 2026.

These moves are improving air quality for the local area by reducing vehicles emitting pollutants via tail-pipe emissions and succeeding in acquiring a net-zero Council fleet adhering to the Climate Change Strategy objectives in advance of the target date.

East Ayrshire Council has encouraged active travel across the area and subsequent reduction in vehicular usage, through its established Clean Green awards and this years ‘Journey to Jupiter’ Journey to Jupiter · East Ayrshire Council (east-ayrshire.gov.uk)

initiative in primary schools. Journey to Jupiter, an active travel initiative funded by the Climate Change Fund involves Early Years Centres and schools. The aim of the project is to get young people walking to school, in a bid to reduce carbon emissions in East Ayrshire, while also decreasing congestion at school gates and promoting active travel. The latest round of this project ran from 26 September until 14 June 2024. All the centres and schools participating earned S-Miles to send a rocket all the way to Jupiter. 724724 S-miles were covered by the participating schools exceeding the target for the year and preventing around 200MT of CO2 being released into the atmosphere. 64% of children walk/cycle to school in East Ayrshire, which is higher than the Scottish average of 53.7%.

Reducing vehicle emissions and contribution to air quality by promoting the area as an enabler of active travel and focussing on education of future generations, a core objective of the Council's Climate Change Strategy to improve air quality.

The Council has established a collaborative relationship with the bicycle mechanic business 'CycleStation' who host free sessions for locals to check that their bikes are safe and make minor maintenance adjustments to get them on the road. The company also provide a recycling bike service to limit waste, breakdown and recovery service and community outreach projects for schools to teach bicycle maintenance and cycling proficiency. CycleStation also offer an innovative bike sharing service with a bike hire fleet to encourage active transportation. The scheme replicates notable cycle sharing schemes found in large metropolitan areas (e.g., Santander Cycles, Mobike, Lime) and compliments the areas extensive cycling routes. It also attempts to promote alternative and accessible forms of travel between neighbouring towns and cities across Ayrshire regions to help its residents lead active lifestyles and limit vehicular emissions. The relationship between East Ayrshire Council and CycleStation promotes the benefits of active transport on air quality compared to vehicle use and encourages locals to support the establishment of a greener, cleaner area. In addition, All-Ability Bikes launched an initiative in 2022 at Cumnock Juniors Football Park and offer children, young people and adults who have a physical or learning disability, or have impaired balance, the chance to fully participate in the fun and freedom of cycling.

East Ayrshire Council has maintained to promote the Kilmarnock Active Travel Hub, an innovative service that encouraged sustainable travel such as walking, cycling, and public transport, throughout the area and launched in 2017. The initiative is a partnership project

between Sustrans Scotland and East Ayrshire Council, funded by Smarter Choices Smarter Places, which is Paths for All's programme to increase active and sustainable travel throughout Scotland. The programme is also grant-funded by Transport Scotland.

The Hub run events and activities to engage the local public as well as tourists, promoting 'Cycle to Work' schemes with support offered on developing a workplace pool bike initiative and advice on funding, training and active travel awards available to workplaces. Thus, attempting to promote alternative and accessible forms of travel across East Ayrshire region to help its residents and workers lead active lifestyles and limit vehicular emissions contributing to air pollution.

East Ayrshire Council have been improving existing active travel walking and cycling routes as well as building new multi-use routes that connect local communities and make commuting to school, work and for leisure and tourism via walking, running, cycling, horse-riding much safer and more enjoyable for people irrespective of age and ability. In Kilmarnock, the 'Kilmarnock Green Infinity Loop' is being developed which will encompass 26km of active travel routes, green infrastructure and signage across the town by 2025. This route will also provide connections to the wider path network including the Core Path Network and the National Cycle Network. Thus, highlighting the Council's commitment to improve local air quality within the area by focussing investment into active transportation facilities and helping its residents lead active lifestyles and limit vehicular emissions.

The Council are committed to further reducing air pollution emissions through enhancing its active transportation availability in East Ayrshire as well as creating enjoyable and fair environments for locals and visitors by producing a draft 'Active Travel Strategy' that went through consultation in October 2021 and cabinet review in June 2022. The document seeks to work in conjunction with the established Climate Change Strategy and be a companion document for the Local Transport Strategy. The Strategy identifies three key aims and five core objectives to encourage active travel in East Ayrshire: Safety, Leisure and Tourism, Developments, Connectivity, and Workplaces and Schools, as well as providing the basis for an Active Travel Action Plan (ATAP) that focuses on:

- Routes –new or improved Active Travel routes suggested by those responding to the engagement;
- Infrastructure – physical interventions that aim to increase rates of active travel – improving safety and/or accessibility;

• Policy – identifying ways in which adoption of specific policy measures may be able to positively encourage active travel

• Education – identifying ways to achieve positive behaviour change among all road users with respect to active travel

• Campaigns – which may include specific initiatives such as bike loans, active travel tourism, and bike-to-work schemes.

The ATAP would be implemented for a 10-year period, with proposed items funded by grants. It has been confirmed that a second stage of stakeholder engagement on the draft Strategy is required to identify opportunities for emphasis and development of the core themes and items suggested for implementation. Overall, East Ayrshire Council are East Ayrshire Council committed to improving air quality within the area by actions that also support the core themes of the Climate Change Strategy.

East Ayrshire Council requests that new, sizeable developments provide a Travel Plan in support of the planning application, to mitigate against air pollution impacts during and post construction. Where developments include biomass, the Council screens proposals and request the applicant(s) to undertake dispersion modelling including flue height sensitivity, with low flue heights in urban areas proving problematic. Although, the screening process has since successfully mitigated air quality impacts.

Furthermore, where biomass burners are proposed in planning applications, the Council have supported the transition and decisional use of geothermal wells and technology such as Ground Source Heat Pumps (GSHPs) for mixed-use housing, retail and leisure development. Thus, seeking technological advancements and adaptations in planning applications to improve air quality in the local area. These modern technologies for air quality improvements are exemplified by the development at the old Johnnie Walker whiskey bottling plant in Kilmarnock.

East Ayrshire Council also assess micro-location of biomass burners, for example close to trees and ground hollows, which can lead to localised nuisance issues. Applicants are required to include a planning statement of best practice operation, with actions allowing applicants to mitigate air quality impacts before development proceeds, preventing problems and encouraging sustainable development with a focus on air quality.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/ Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
1	Walking and Cycling Networks	Alternative to Private Vehicle Use/Promoting Travel Alternatives	-	Ongoing	Safer Communities	2014	Provision of safe cycle lanes and pedestrian routes (Both dedicated and dual use) including East Ayrshire Strategic Cycle Network linked to National Cycle Network and East Ayrshire Core Paths Plan. EAC now has 40 km of cycle lanes (2014 year). Improved walking facilities between Kilmarnock bus and railway stations. Former railway lines have been converted to footpaths and cycle lanes Bring unadopted footways controlled by EAC up to an adoptable standard. Require developers to provide cycle facilities and links to the public network and/or the EAC Cycle Network as part of their developments (where appropriate).	-
2	Active Travel	Alternative to Private Vehicle Use/Promoting Travel Alternatives	-	Ongoing	Safer Communities, Economy and Skills	-	Council has established an Active Travel Hub in Kilmarnock to promote cycling and walking as an alternative to the car. Promote cycling through advertising, leaflets and maps to encourage cycling as an alternative to short car journeys and promote the health benefits of cycling. As part of this initiative, the Council is introducing a Pool Bike Scheme to promote business cycle use and complement the Cycle to Work Scheme. Develop and adopt an EAC Travel Plan to encourage staff to use sustainable modes of transport in their work related travel. The Active Travel Officer will work with employers to promote cycling and walking as an alternative to commute by car. Requirement for the adoption of Travel Plans at – 19 all significant new retail, commercial and residential developments. In the selection of locations for future development, preference will be given to areas that are, or have the potential to be, well integrated with walking, cycling and public transport networks.	-

Measure No.	Measure	Category	Expected/ Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implement ation
3	Active Travel Hub	Alternative to Private Vehicles Use/Promoting Travel Alternatives	-	Ongoing	Safer Communities Economy and Skills	-	The Council has established an Active Travel Hub in Kilmarnock to promote cycling and walking as an alternative to the car. Promote cycling through advertising, leaflets and maps to encourage cycling as an alternative to short car journeys and promote the health benefits of cycling. As part of this initiative, the Council is introducing a Pool Bike Scheme to promote business cycle use and complement the Cycle to Work Scheme. Develop and adopt an EAC Travel Plan to encourage staff to use sustainable modes of transport in their work related travel. The Active Travel Officer will work with employers to promote cycling and walking as an alternative to commute by car. Requirement for the adoption of Travel Plans at all significant new retail, commercial and residential developments. In the selection of locations for future development, preference will be given to areas that are, or have the potential to be, well integrated with walking, cycling and public transport networks	-
4	Active Transportation and Education – School Initiative Journey to Jupiter	Alternative to Private Vehicle Use/Promoting Low Emission Transport/Promoting Travel Alternatives/Transport Planning and Infrastructure/ Public Information	-	Ongoing	East Ayrshire Council and Schools – Funded by Climate Change Fund	-	East Ayrshire Council has encouraged active travel across the area and subsequent reduction in vehicular usage, through its established ‘Journey to Jupiter’ initiative in primary schools. The scheme is funded by the Climate Change Fund. Participating schools are able to send the from Earth to Jupiter. Schoolchildren are encouraged to collect S-Miles as part of Active Traveller Crews through various active transportation methods such as walking, cycling, scooting to school, parking and striding, and walking the S-Miles Circuit at school. In 2023, the scheme prevented usage of approximately 200MT of carbon being emitted to the atmosphere.	-

Measure No.	Measure	Category	Expected/ Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implement ation
5	Active Transportation	Alternative to Private Vehicle Use/ Promoting Low Emission Transport/ Promoting Travel Alternatives	2025	Planned	East Ayrshire Council	2025	In Kilmarnock, the 'Kilmarnock Green Infinity Loop' is being developed which will encompass 26km of active travel routes, green infrastructure and signage across the town by 2025. This route will also provide connections to the wider path network including the Core Path Network and the National Cycle Network	Development and infrastructure plan
6	Smoke Control Areas	Policy guidance and development control	-	Adopted	Economy and Skills	-	East Ayrshire has two smoke control areas the Grange Estate, Kilmarnock and the Crossdene Estate, Crosshouse. Reduces smoke emissions in residential areas.	-
7	Net Zero Housing – Refurbishment	Planning and Infrastructure	2027 – 2028	Planned	East Ayrshire Council - £93.6 million over 5 years to improve the fabric of existing housing stock with the emphasis being on energy efficiency	2027 - 2028	East Ayrshire Council - £93.6 million over 5 years to improve the fabric of existing housing stock with the emphasis being on energy efficiency.	-
8	Community Renewable Energy (CoRE)	Community Renewable Energy	2034	Operational and Ongoing	East Ayrshire Council and Strathclyde University	2034	Community Renewable Energy (CoRE) Centre of Excellence: With an academic and business Centre of Excellence at Knockroon as the center piece of an ambitious 15 year scheme.	-
9	Idling Awareness	Public Information	-	Ongoing	-	Not Funded	Raise awareness of idling vehicles, air quality and health to promote a change in behaviour, at events such as clean air day	-
10	Environmental Permits	Environmental Permits	-	Ongoing	SEPA	-	Environmental Permits are issued by SEPA but in consultation with Environmental Health as joint consultees.	
11	Low energy street/ building lighting, reducing energy usage	Promote Low Emission Plant	-	Ongoing	Safer Communities - Governance	-	Reducing electricity consumption from the national grid therefore reducing emissions. Raising energy awareness with Council staff and the public. Remit to deliver on delivery of the energy effectiveness savings set out in the Council Transformation Strategy.	-

3 Air Quality Monitoring Data & Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how local concentrations of the main air pollutants compare with the objectives.

East Ayrshire Council undertook automatic (continuous) monitoring at one site during 2023. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at Home page | Scottish Air Quality

Maps showing the location of the monitoring sites are provided in Figure 2. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

East Ayrshire Council undertook non- automatic (passive) monitoring of NO_2 at 19 sites during 2023. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Figure 2 – 9. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3 at automatic monitoring sites. Also illustrated in Chart A.1 in Appendix A.

Table A.4 in Appendix A compares the adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3 at non-automatic monitoring sites. Also illustrated in Chart A.2 in Appendix A.

For diffusion tubes, the full 2023 dataset of monthly mean values is provided in Appendix B. All passive monitoring sites within the East Ayrshire Council continue to report annual mean NO_2 concentrations below the AQS, therefore all passive monitoring sites are compliant and not expected to exceed or be an area of concern. Due to the low monitored concentrations, fall-off with distance correction was not required.

Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year

3.2.2 Particulate Matter (PM_{10})

Table A.6 n Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 18µg/m^3. Also illustrated in Chart A.3 in Appendix A.

Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50µg/m^3, not to be exceeded more than seven times per year.

3.2.3 Particulate Matter (PM2.5)

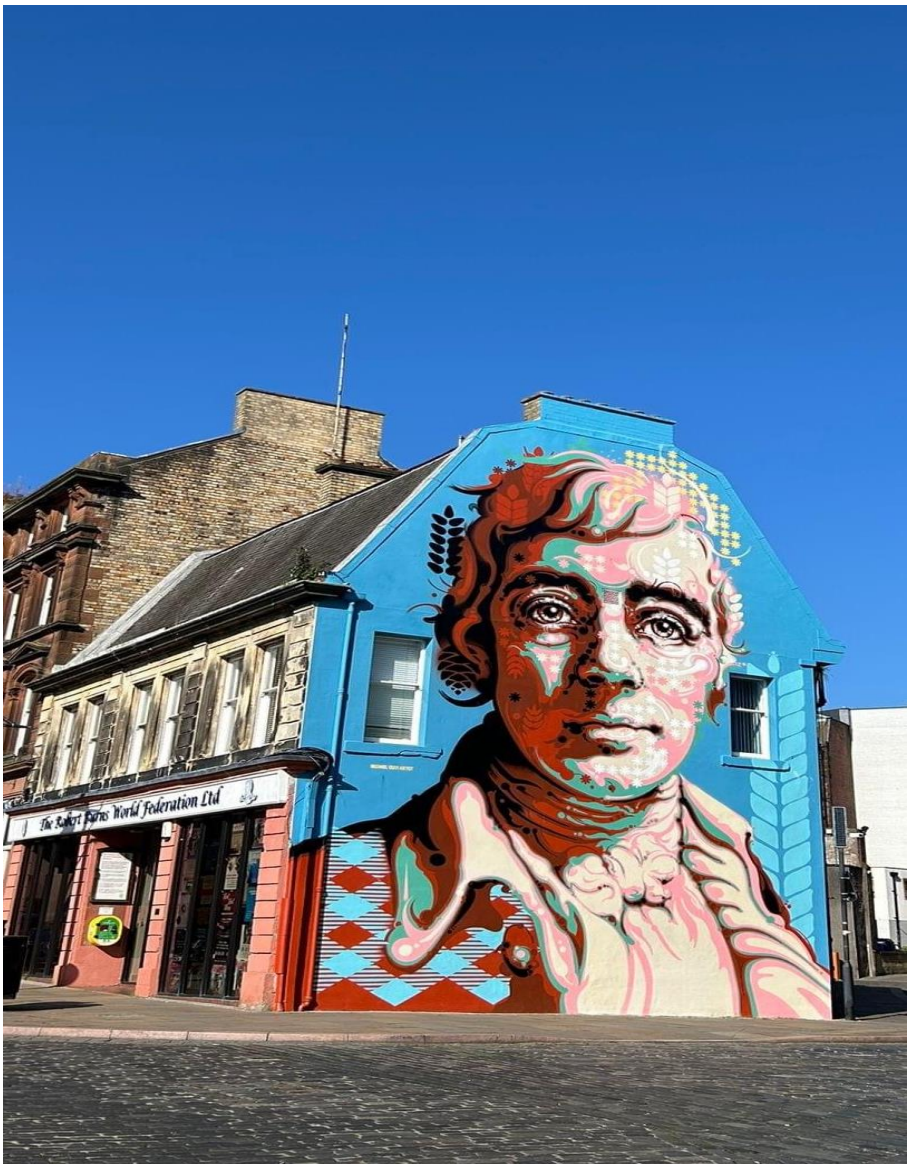
Table A.8 in Appendix A compares the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years with the air quality objective of 10µg/m^3. Also illustrated in Chart A.4 in Appendix A.

3.2.4 Sulphur Dioxide (SO_2)

Sulphur Dioxide (SO_2) is not monitored in East Ayrshire Council. Historic monitoring discontinued in 2005, reported concentrations significantly below AQS and source assessments concluded that no exceedances of AQS were likely for SO_2 due to the reduction in domestic coal usage and industrial sources.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

Alternate pollutants included in the Regulations for the purpose of Local Air Quality Management (LAQM) in Scotland were not monitored by East Ayrshire Council in 2023.



4 New Local Developments

East Ayrshire Council has identified two potential new sources relating to air quality within the reporting year of 2023.

Egger Ltd, Barony Road, Auchinleck, (Planning Application No: 21/0616/PP) is in the pre-planning stage for construction of lamination plant at their chipboard factory, which will allow the production of finished worktops and other similar products for the construction industry. The development proposes potential installation of a 35.5MW biomass combined heat and power plant at the chipboard plant to generate electricity and hot gas.

It was noted in the 2022 East Ayrshire APR that the Halo Development (Planning Application No: 17/0865/PPP) had an Air Quality Impact Assessment outstanding and Environmental Health hoped to receive this but documentation is still outstanding thus it will be reviewed in the 2025 APR.

4.1 Road Traffic Sources

East Ayrshire Council confirms that Stagecoach Buses are currently renovating there bus station at Green Street, Kilmarnock, KA1 1JU. This is to ease congestion and make room for more electric vehicles (EVs) and charging point. This was expected to finished in 2022 by due to outside factors is now due for completion at the start of 2025.

This renovation is a significant step in the transition to cleaner, more sustainable public transport and promote greener energy; the electric buses produce zero tailpipe emission. Thus significantly reducing pollution at the bus garage and on the bus routes, having a positive impact on air quality within the Local Authority area.

4.2 Other Transport Sources

East Ayrshire Council confirms that there are no new or newly identified Other Transport Sources, since the 2023 APR, which may have a significant impact on air quality within the Local Authority area. There are no new petrol stations that have opened in 2023.

4.3 Industrial Sources

SEPA have notified of two new Waste Management Licences in 2023 namely:

- Waste - Material Recovery Facility & Civic Amenity Site, Garlaff Waste Management Facility, Skares Road, Cumnock, KA18 2RB
- Waste Storage and Treatment Site, Kilmarnock Depot, Unit B4 Southcraig Avenue, Rowallan Business Park, Kilmarnock, KA3 6BQ

These are both existing installations with new licences where emissions may change.

4.4 Commercial and Domestic Sources

East Ayrshire Council confirms that there are no new or newly identified Commercial and Domestic Sources, since the 2023 APR, which may have a significant impact on air quality within the Local Authority area

4.5 New Developments with Fugitive or Uncontrolled Sources

East Ayrshire Council confirms that there is no New Development with Fugitive or Uncontrolled Sources, which has been submitted since the 2023 APR, with the potential to have a significant effect on air quality. However, there remains to be the existing proposed installation of a 35.5MW biomass combined heat and power plant at the chipboard plant at Egger Ltd, Barony Road, Auchinleck (Planning Application No: 21/0616/PP).

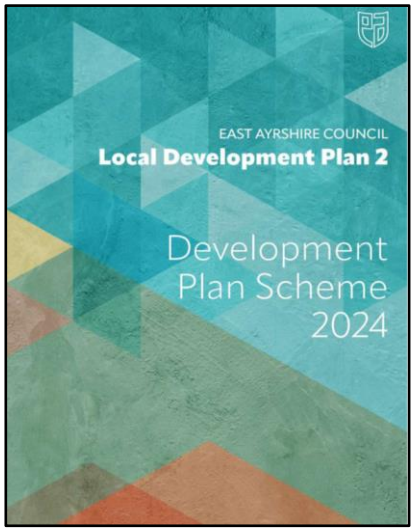
East Ayrshire Council Environmental Health review retrospective planning applications for mainly rural biomass boilers that are small scale for heating farmhouses, cottages and drying floors on farms. Such works are screened out using the biomass-screening tool or addressed by requesting the flue heights are raised to ensure adequate dispersion. Most applications have capped flues and Environmental Health request these to be removed to allow adequate dispersion of flue gases and to prevent a potential build-up of gases within the appliance. This follows guidance from The Chartered Institution of Building Services Engineers, Biomass Heating Document CIBSE AM15:2014.

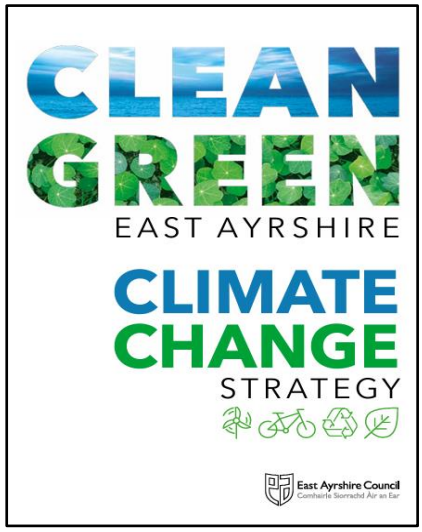
Quarries

All quarry or construction developments require a Dust Management Plan (DMP) to be submitted in conjunction with the application, which refers to the Institute of Air Quality Management (IAQM) guidance. The DMP must be approved by the Local Authority prior to commencement of operation.

Dareduff by Dunlop Quarry, Neilston Road, Uplawmoor (Planning Application No: 19/0262/PP), was granted planning permission on 19th July 2024, with conditions still being considered and discharged. Prior to planning permission approval, East Ayrshire Council Environmental Health and the applicant's agent had a pre-planning discussion to agree the Air Quality Assessment (AQA) methodology required to be undertaken in conjunction with the application. The AQA concluded that the potential dust impact on sensitive receptors would be negligible, and that fine particulate matter does not pose a significant impact, with AQS not exceeded. To ensure this, the applicant submitted an updated DMP.

A planning application for the extension of an existing quarry, Garpel Quarry, Sorn Road, Muirkirk (Planning Application No: 20/0496/PP) was approved on 20th February 2023. Air quality concerns arising from the expansion project were addressed at the original planning application and covered in previous air quality reports, concluding that air quality impacts were not significant. The extension was covered in the original AQA document submitted to East Ayrshire Council.





East Ayrshire Council will continue to consider the Council Strategic Plan, Local Development Plan and Climate Change Strategy when assessing all applications to ensure they meet the needs of the community whilst considering the local environment and air quality.

5 Planning Applications

East Ayrshire Council Environmental Health refer to various guidance and strategy documents when assessing air quality impacts from proposed new developments through planning applications.

Guidance/strategy documents include:

• Climate Change Strategy

• Local Development Plans

• Transport Plans

• Environmental Protection Scotland (EPS) and Royal Town Planning Institute (RTPI) Scotland: Delivering Cleaner Air for Scotland – Development and Planning Management

• Environmental Protection United Kingdom (EPUK)/IAQM: Land-Use Planning and Development Control

East Ayrshire Council has identified several large scale planning applications within the reporting year of 2023 with the potential to impact local air quality.

Dareduff by Dunlop Quarry, Neilston Road, Uplawmoor (Planning Application No: 19/0262/PP), was granted planning permission on19th July 2024, with conditions still being considered and discharged. Prior to planning permission approval, East Ayrshire Council Environmental Health and the applicant's agent had a pre-planning discussion to agree the Air Quality Assessment (AQA) methodology required to be undertaken in conjunction with the application. The AQA concluded that the potential dust impact on sensitive receptors would be negligible, and that fine particulate matter does not pose a significant impact, with AQS not exceeded. To ensure this, the applicant submitted an updated DMP.

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The Egger Ltd, Barony Road, Auchinleck, development (Planning Application No: 21/0616/PP) will involve construction of lamination plant at their chipboard factory, which will allow the production of finished worktops and other similar products for the construction industry. The development proposes potential installation of a 35.5MW biomass combined heat and power plant at the chipboard plant to generate electricity and hot gas. The Council consulted with the Scottish Environment Protection Agency (SEPA) and provided the following planning consultation response:

"Local Air Quality Management comes under the responsibility of Environmental Health and as such any development which may have an effect on local air quality has to be assessed for impact on local air quality. Due to the size of the Combined Heat and Power Plant (CHP Plant) (>20MW) the biomass boiler falls under the remit of SEPA and will be assessed as a PPC Permit Variation Application (PPC Part A).

SEPA PPC Permit Variation Application: To operate the proposed CHP plant the operator must apply for a variation of the permit to include the operation of the CHP Plant. In doing so, they must demonstrate to SEPA's satisfaction that the activities carried out will be operated in such a way that all the appropriate preventative measures are taken against pollution, in particular through application of the best available techniques, and that no significant pollution is caused. This includes meeting the stringent emission limits set under European legislation, which must be adhered to. In addition, the application must demonstrate, with detailed modelling, that there will be no significant impact on the environment or on human health. This will result in a more technical and comprehensive submission than that provided at the planning stage. Given the size of the proposed CHP plant, it will also require to comply with the requirements of the Medium Combustion Plant Directive.

Where SEPA determines at planning that a development is potentially consentable or where planning permission is granted, this does not guarantee that a PPC Permit will be varied to include the new activity. SEPA's subsequent determination of the variation application is to a greater depth and cannot be started until such time that a valid PPC application has been received. SEPA will, therefore, only comment in general terms on generic topics at the planning stage rather than provide specific comments on any aspect of the proposed development. In addition, the details of the installation, as well as the regulation and guidance governing such installations, may be subject to changes between the planning application and the PPC Permit application.

Upon receipt of a valid PPC application by SEPA, there will be a process of statutory consultation, and East Ayrshire Council will be further consulted at this point. Environmental Health have, therefore, no objection in principle to the application and will consult with SEPA at the time when Egger applies for a variation of their present permit to include the CHP Plant. Also, in general terms, this permission does not exempt the applicant, or those responsible for the future management of this facility, from the powers of nuisance control currently available to the local authority under sections 79 and section 80 of the Environmental Protection Act 1990. All users of the development should take the best practicable means at all times to minimise pollution being emitted from the development and impacting adversely on nearby properties or receptors."

In addition to the above, an air quality modelling statement will be expected to be submitted by the applicant in advance of any modelling work being carried out as part of an Air Quality Impact Assessment (AQIA) to support a planning application, detailing relevant modelling parameters to be agreed by Environmental Health and SEPA. It is also worth noting that a previous planning application at Egger (Planning Application No: 21/0137/PP) for a new emissions stack, new extraction and cleaning process, would lead to reduced overall emissions from the plant.

It was noted in the 2022 East Ayrshire APR that the Halo Development (Planning Application No: 17/0865/PPP) had an Air Quality Impact Assessment outstanding and Environmental Health hoped to receive this but documentation is still outstanding thus it will be reviewed in the 2025 APR.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

Monitoring, both passive and automatic, in East Ayrshire Council area during 2023 has not identified any new exceedances of the AQS for any pollutant (see Appendix A).

Automatic monitor, St Marnock Street in Kilmarnock, reported an annual mean NO_2 concentration of 18.2µg/m^3 for 2023, which is 21.8µg/m^3 below/ the AQS of 40µg/m^3 (see Table A.3; Chart A.1). As such, this is the 10th consecutive year whereby the reported concentration is below 30µg/m^3, highlighting the significant achievement and commitment of East Ayrshire Council to implement air quality measures that ensure maintained compliance with AQS.

Table A.5 highlights that there were no hourly means greater than 200µg/m^3 reported at the automatic station St Marnock Street in Kilmarnock during 2023 monitoring year, therefore, the Council have achieved an 10th successive year without any hourly mean NO_2 exceedances.

Diffusion tube NO_2 monitoring conducted in 2023 reported a maximum concentration of 29.2µg/m^3 at site DT2, 10.8µg/m^3 below the AQS of 40µg/m^3. All remaining NO_2 diffusion tubes in the LAQM area of East Ayrshire reported concentrations below 26.3µg/m^3, thus lower than the 40µg/m^3 AQS and identifying a reduced risk to human health. The maximum NO_2 concentration reported from a diffusion tube in 2023 was 2.9µg/m^3 higher than recorded in monitoring year 2022.

PM_{10} monitoring at the automatic monitor on St Marnock Street in Kilmarnock reported an annual mean of 10.5µg/m^3 , significantly below the AQS of 18µg/m^3 by 7.5µg/m^3 (see Table A.6; Chart A.3). As such, this is the 9th consecutive year whereby the reported concentration is below the 18µg/m^3 AQS, highlighting the significant achievement and commitment of East Ayrshire Council to implement air quality measures that ensure East Ayrshire Council maintained compliance with AQS. There are no reported exceedances in 2023 of the 50 µg/m^3 PM_{10} daily mean (Table A.7).

$PM_{2.5}$ monitoring at the automatic monitor on St Marnock Street in Kilmarnock reported an annual mean of 5.5µg/m^3, significantly below the AQS of 10µg/m^3 by 4.5µg/m^3 (see Table A.8, Chart A.4). Thus, reinforcing the significant achievement and commitment of East

Ayrshire Council to implement air quality measures that ensure maintained compliance with AQS.

6.2 Conclusions relating to New Local Developments

The air quality impact from proposed developments will be assessed when the relevant air quality modelling and assessments are submitted for review. The following criteria have been considered for any proposed new development:

- Road traffic sources;
- Other transport sources;
- Industrial sources;
- Commercial and domestic sources; and
- New developments with fugitive or uncontrolled sources.

Planning applications boding sources that have potential to impact local air quality will be screened using appropriate guidance, including but not limited to: LAQM.TG(22), EPUK/IAQM, and the RTPI Scotland. Where screening outcomes indicate likelihood of significant air quality issues, the applicant will be asked to submit a detailed assessment inclusive of modelling.

6.3 Proposed Actions

Monitoring in East Ayrshire Council area during 2023 has not identified any new exceedances of the AQS for any pollutant. Automatic monitoring at St Marnock Street, Kilmarnock, will continue into 2024 monitoring year for NO_2, PM_{10} and $PM_{2.5}$ to ascertain whether pollutant concentrations are incurring a downwards trajectory and to affirm that compliance with AQS is maintained in East Ayrshire.

The automatic station will also continue to act as a resource enabling regional data collection for Scottish Statistics. The automatic monitor will be upgraded in 2024 to continue with this aim.

The Council will maintain its passive NO_2 monitoring network, continuing to review the extent of it and locations of deployed tubes to determine whether tube relocation is required to provide better spatiotemporal coverage or whether de-commission is necessary in areas where monitoring has reported concentrations significantly below AQS, thus posing a significantly reduced risk to human health.

East Ayrshire Council is committed to using its passive monitoring network of NO_2 diffusion tubes as a screening tool in support of AQAs, where locations within East Ayrshire are subject to substantial change, for example, increased traffic flows.

The AQMesh automatic monitor is likely to be moved during 2024 monitoring period as air quality concerns received by East Ayrshire Council from local residents at Barony Campus have been refuted. The Environmental Health Service are looking to study a new initiative at local Primary Schools called “School Street” to better understand the positive impact this may have on local air quality.

The School Street initiative is a road outside a school with a temporary restriction on motorised traffic at school drop-off and pick-up times. The restriction applies to school traffic and through traffic. The result is a safer, healthier and pleasant environment for everyone. School Street schemes offer a proactive solution for school communities to tackle air pollution, poor health and road danger reduction. A School Street scheme will encourage a healthier lifestyle and active travel to school for families and lead to a better environment for everyone. Currently there are five schools trialling the scheme in East Ayrshire.

The AQMesh gas and particulate monitor will determine pollutant concentrations in the area to show the impacts of the project. As the instrument is relatively mobile, it is hoped that it will be deployed to several schools across the year.

East Ayrshire Council are also committed to complete air quality measures delayed during the 2023 monitoring year.

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)
A3	St Marnock Street, Kilmarnock	Roadside	242742	637705	NO_2; PM_{10}; $PM_{2.5}$	NO	Chemiluminescent; BAM (until Jul 2016) FIDAS (Aug 2016 onwards)	0	3.18; 3.54	2.13; 2.30
A4	Holmhead Road, Cumnock	Roadside	256229	620539	NO_2; PM_{10} $PM_{2.5}$	NO	AQMesh (implemented 2019 until October 2021)	0	1.40	2.50; 2.50
A5	Barony Campus, Cumnock	Other	256096	620950	NO_2; PM_{10} $PM_{2.5}$	NO	AQMesh (Implemented October 2021 onwards)	0	N/A	2.50; 2.50

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.

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?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube co-located with Continuous Analyser?	Tube Height (m)
DT1	Fowlds Street, Kilmarnock	Roadside	242805	637620	NO_2	No	2.6	0.4	No	3.0
DT2	8 John Finnie Street Kilmarnock	Roadside	242715	638135	NO_2	No	0.2	3.4	No	3.0
DT3	23 Lainshaw Street, Stewarton	Roadside	241901	645818	NO_2	No	2.4	0.7	No	3.0
DT4	40 Main Street, Newmilns	Roadside	253601	637310	NO_2	No	0.6	2.5	No	3.0
DT6	8A Kilmarnock Road, Mauchline	Roadside	249826	627335	NO_2	No	2.3	0.4	No	3.0
DT7	Ochiltree Junction at Main Street and A70	Roadside	250714	621170	NO_2	No	10.0	1.0	No	3.0
DT9	Townhead/ Glaisnock Street Cumnock	Roadside	256889	620133	NO_2	No	10.0	1.0	No	2.8
DT11	96 John Finnie Street, Kilmarnock	Roadside	242656	637874	NO_2	No	3.7	0.5	No	3.0
DT12	74 John Finnie Street, Kilmarnock	Roadside	242668	637929	NO_2	No	3.0	0.7	No	3.0
DT14	95/97 John Finnie Street, Kilmarnock	Roadside	242619	637773	NO_2	No	0.6	3.0	No	3.0
DT15	16 George Street Kilmarnock	Roadside	242776	638159	NO_2	No	0.9	1.6	No	3.0
DT17	23/25 Loudon Road Newmilns	Roadside	253204	637237	NO_2	No	0.5	1.5	No	3.0
DT24	5/7 Earl Grey Street Mauchline	Roadside	249894	627233	NO_2	No	0.7	3.6	No	3.0
DT27	King Street/ Saint Marnock Street, Kilmarnock	Kerbside	242771	637714	NO_2	No	2.1	0.5	No	3.0
DT32	Kay Park Kilmarnock	Urban Background	243302	638259	NO_2	No	N/A	N/A	No	3.0
DT33	Howard Park, Kilmarnock	Urban Background	242581	637409	NO_2	No	N/A	N/A	No	3.0
DT44A DT44B DT44C	St Marnock Street Monitoring Site	Roadside	242742	637705	NO_2	No	0.0	3.2	Yes	2.1

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.

Table A.3 – Annual Mean NO_2 Monitoring Results: Automatic Monitoring (µg/m^3)

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
A3	Roadside	Automatic	90.7	90.7	24	19	20.3	19.2	18.2
A4	Roadside	Automatic	N/a	N/A	14	16	19	Relocated	Relocated
A5	Other	Automatic	90	90	-	-	12	12	12

Notes:

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

NO_2 annual means exceeding 60µg/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.TG22 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%).

Chart A.1 - Trends in Annual Mean NO_2 Concentrations – Automatic Sites

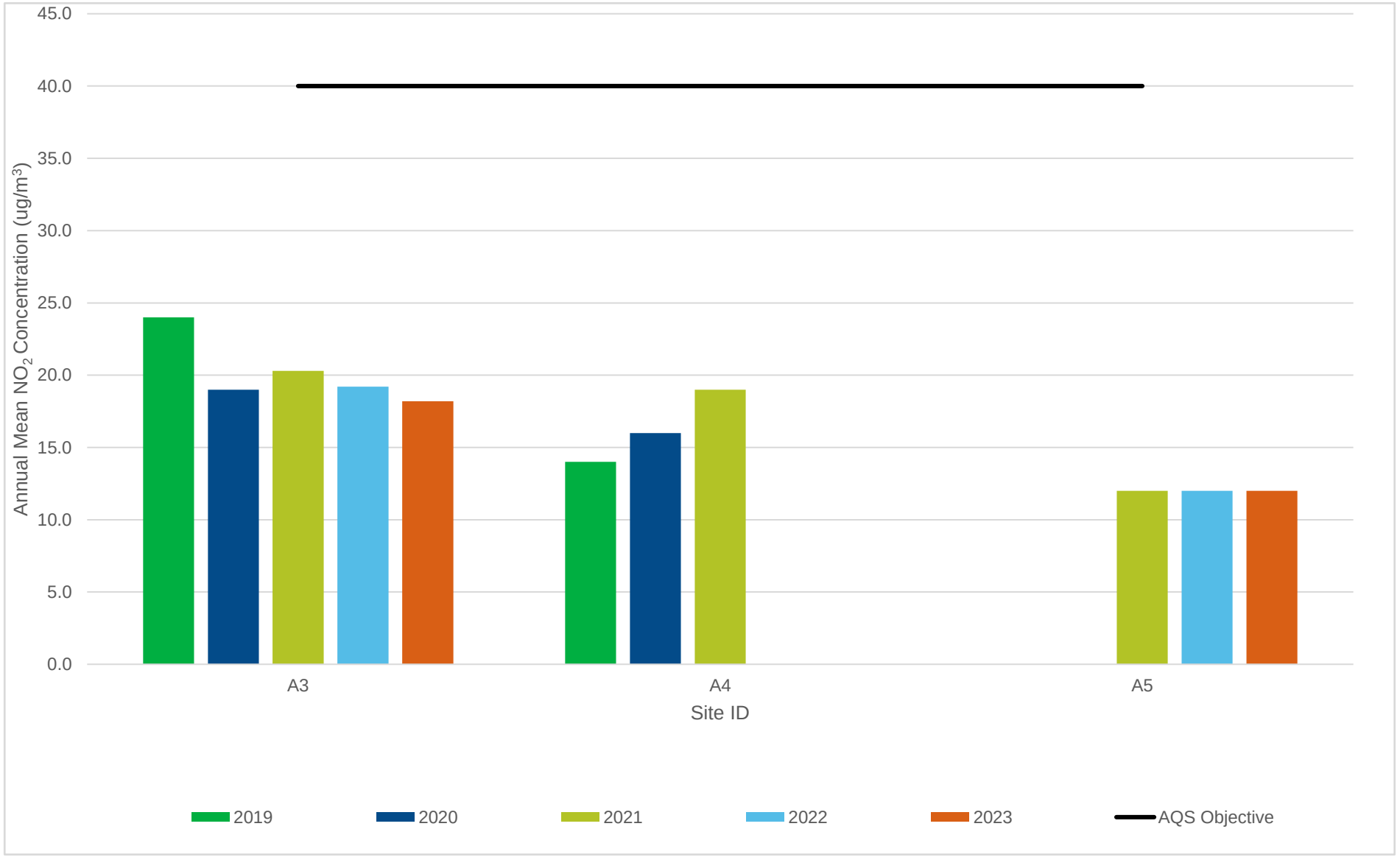


Table A.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2022 (%) (2)	2019	2020	2021	2022	2023
DT1	242805	637620	Roadside	83.3	84.0	23.9	14.5	20.4	23.0	18.6
DT2	242715	638135	Roadside	58.3	59.5	26.5	15.6	18.6	26.3	29.2
DT3	241901	645818	Roadside	83.3	84.0	22.8	15.1	17.9	21.9	17.1
DT4	253601	637310	Roadside	83.3	84.0	21.2	15.4	15.7	16.1	15.0
DT6	249826	627335	Roadside	83.3	84.0	21.7	13.5	14.8	16.2	14.9
DT7	250714	621170	Roadside	66.6	76.6	-	-	-	12.6	10.2
DT9	256889	620133	Roadside	66.6	67.8	-	-	-	9.4	9.0
DT11	242656	637874	Roadside	83.3	84.0	22.3	15.3	17.2	22.2	17.7
DT12	242668	637929	Roadside	83.3	84.0	25.5	18.8	20.3	23.7	18.4
DT14	242619	637773	Roadside	83.3	84.0	28.0	20.5	24.8	26.1	20.8
DT15	242776	638159	Roadside	66.6	68.9	25.7	19.9	23.1	25.4	23.7
DT17	253204	637237	Roadside	83.3	84.0	21.3	14.8	17.4	18.8	17.1
DT24	249894	627233	Roadside	83.3	84.0	23.7	15.7	21.6	22.5	18.9
DT27	242771	637714	Kerbside	83.3	84.0	25.8	15.8	23.0	25.6	20.1
DT32	243302	638259	Urban Background	83.3	84.0	11.3	8.0	8.7	8.5	8.3
DT33	242581	637409	Urban Background	83.3	84.0	13.2	8.2	9.0	8.5	8.8
DT44A, DT44B, DT44C	242742	637705	Roadside	83.3	84.0	22.0	16.8	19.8	20.4	17.2

Notes:

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22. See Appendix C for details.

Diffusion tube data has been bias adjusted

There are no exceedances of the NO_2 annual mean objective of 40µg/m^3

(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%).

Chart A.2 - Trends in Annual Mean NO_2 Concentrations – Non-Automatic Sites

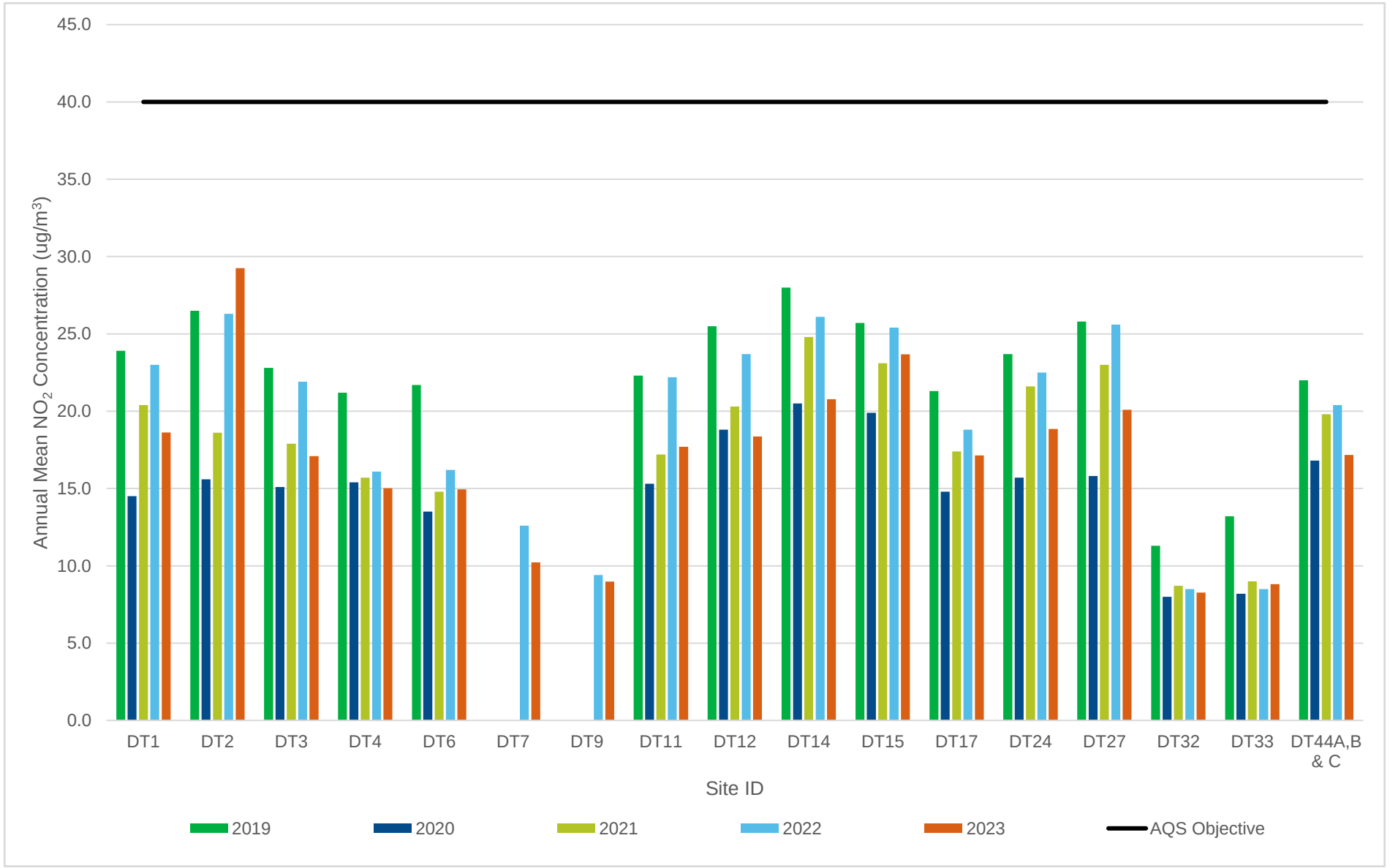


Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
A3	Roadside	Automatic	90.7	90.7	0	0	0	0	0
A4	Roadside	Automatic	N/A	N/A	0	0	0	Relocated	Relocated
A5	Other	Automatic	90	90	-	-	0	1	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%).

Table A.6 – Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
A3	Roadside	100	100	12.4	11.1	10.8	11.4	10.5
A4	Roadside	N/A	N/A	9	9	N/A (3)	Relocated	Relocated
A5	Other	85.3	85.3	-	-	12.0 (4)	13.0	12

Notes:

Exceedances of the PM_{10} annual mean objective of 18 $\mu g/m^3$ 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.

(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%).

(3) Due to technical issues with the AQMesh Monitor no PM_{10} data was obtained for this site.

(4) Due to the short period of monitoring (< 25%), no annualisation was carried out at this site and the results are indicative only.

Chart A.3 - Trends in Annual Mean PM_{10} Concentrations

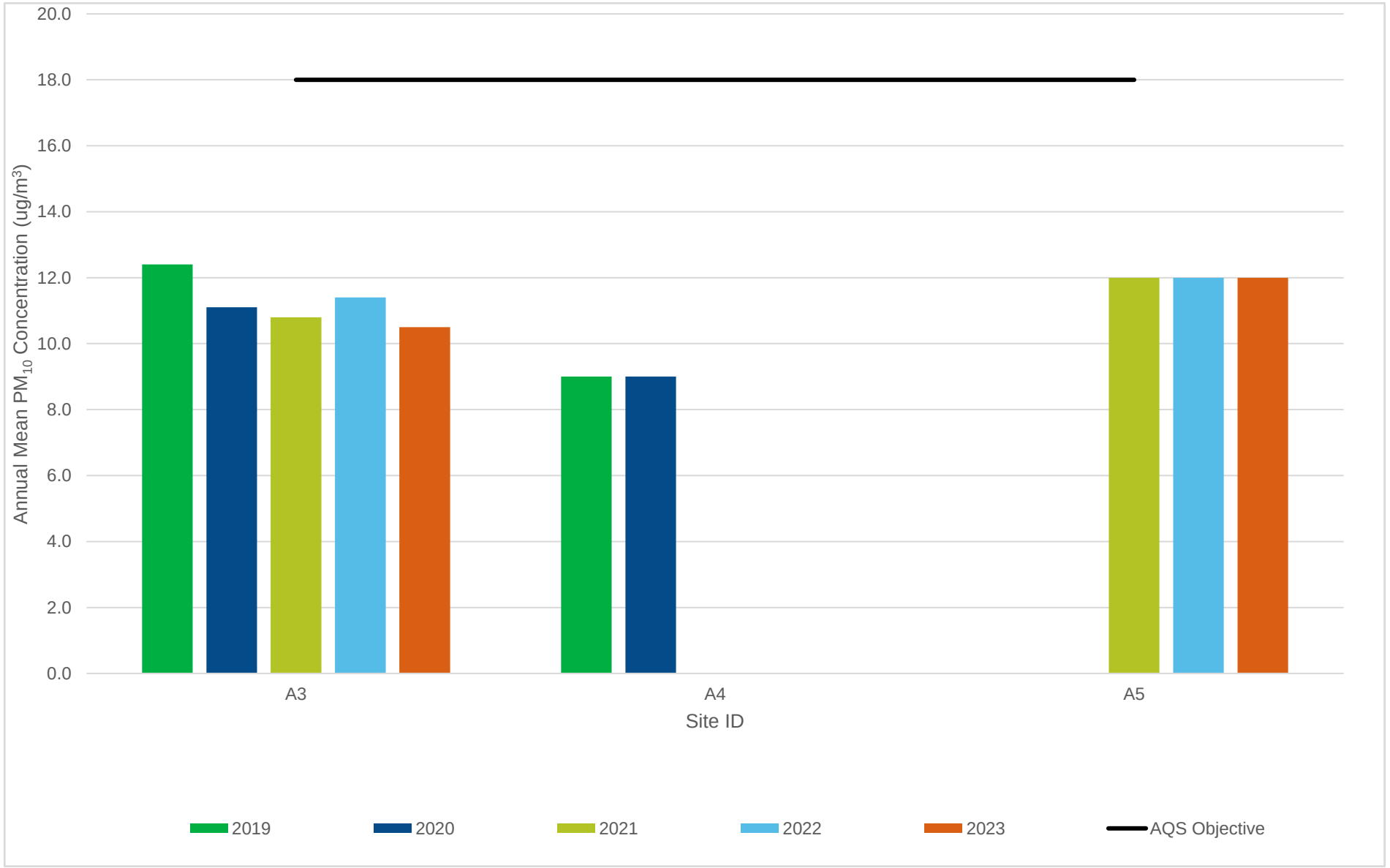


Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
A3	Roadside	100	100	2	0	0	0	0
A4	Roadside	N/A	N/A	1	0	N/A (3)	Relocated	Relocated
A5	Other	85.3	85.3	-	-	0 (4)	2	1

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%).

(3) Due to technical issues with the AQMesh Monitor, no PM_{10} data was obtained for this site.

(4) Due to the short period of monitoring (< 25%), no annualisation was carried out at this site and the results are indicative only.

Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
A3	Roadside	100	100	7	6.1	5.9	5.5	5.5
A4	Roadside	N/A	N/A	8	5	N/A (3)	Relocated	Relocated
A5	Other	90.1	90.1	-	-	5 (4)	7	7

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.

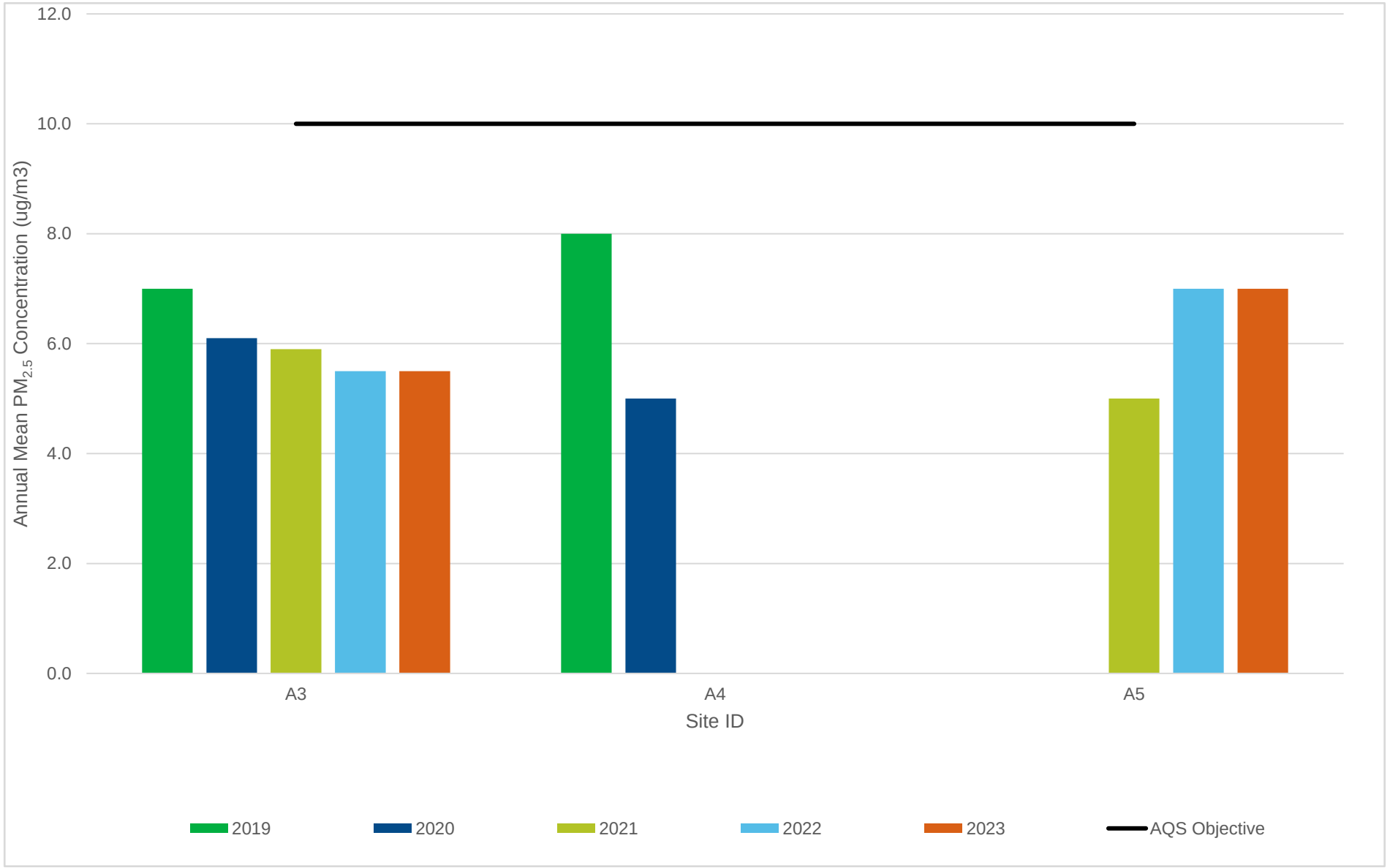
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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%).

(3) Due to technical issues with the AQMesh Monitor, no PM_{10} data was obtained for this site.

(4) Due to the short period of monitoring (< 25%), no annualisation was carried out at this site and the results are indicative only.

Chart A.4 - Trends in Annual Mean $PM_{2.5}$ Concentrations



Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO_2 2023 Monthly Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted & Annualised	Comment
DT1	242805	637620	30.5	-	-	17.9	14.7	21.1	9.5	10.1	17.2	20.5	20.3	1.6	16.3	18.6	
DT2	242715	638135	59.8	-	-	21.5	-	-	-	12.0	21.4	31.9	42.2	1.6	27.2	29.2	
DT3	241901	645818	27.5	-	-	14.7	15.3	19.8	7.7	10.3	13.5	18.7	20.8	1.6	15.0	17.1	
DT4	253601	637310	26.7	-	-	11.8	11.0	16.4	7.5	10.0	8.8	16.0	21.9	1.6	13.2	15.0	
DT6	249826	627335	21.3	-	-	17.5	13.4	20.2	8.0	5.6	13.2	13.9	16.4	1.6	13.1	14.9	
DT7	250714	621170	-	-	-	9.4	8.7	8.4	5.7	6.2	9.1	10.0	12.0	11.2	9.0	10.2	
DT9	256889	620133	14.0	-	-	7.4	5.7	8.0	5.5	3.9	8.5	-	-	1.6	6.8	9.0	
DT11	242656	637874	23.4	-	-	17.7	12.0	19.3	10.8	12.4	15.1	15.9	27.1	1.6	15.5	17.7	
DT12	242668	637929	26.4	-	-	12.7	12.3	23.6	14.2	13.6	14.3	20.1	22.3	1.6	16.1	18.4	
DT14	242619	637773	33.0	-	-	18.1	12.8	22.0	19.1	17.8	13.1	19.4	25.3	1.6	18.2	20.8	
DT15	242776	638159	35.7	-	-	-	-	24.0	17.1	15.9	21.1	21.1	24.2	1.6	20.1	23.7	
DT17	253204	637237	27.3	-	-	12.6	11.1	14.3	11.7	14.0	15.6	19.6	22.5	1.6	15.0	17.1	
DT24	249894	627233	27.8	-	-	14.2	15.7	24.4	13.3	12.5	9.7	22.2	24.0	1.6	16.5	18.9	
DT27	242771	637714	29.5	-	-	16.1	14.0	26.0	7.4	17.9	19.3	20.6	23.8	1.6	17.6	20.1	
DT32	243302	638259	17.0	-	-	6.2	4.4	6.1	1.8	1.7	5.7	5.9	11.9	11.8	7.3	8.3	
DT33	242581	637409	12.3	-	-	7.0	4.6	12.0	3.4	1.7	7.1	12.5	15.1	1.6	7.7	8.8	
DT44A	242742	637705	31.7	-	-	14.2	14.5	19.1	12.3	13.0	13.3	16.9	18.9	1.6.	-	-	Triplicate Site with DT44B and DT44C - Annual data provided for DT44C only
DT44B	242742	637705	29.9	-	-	12.9	9.0	18.1	10.6	13.6	14.6	16.7	24.8	1.6	-	-	Triplicate Site with DT44A and DT44C - Annual data provided for DT44C only
DT44C	242742	637705	27.0	-	-	13.8	11.3	15.4	13.5	13.7	12.8	15.3	20.2	1.6	15.1	17.2	Triplicate Site with DT44A and DT44B Annual data provided for DT44C only

Notes:

There are no exceedances of the NO_2 annual mean objective of 40µg/m^3.

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within East Ayrshire Council During 2023

East Ayrshire Council has not identified any new sources relating to air quality within the reporting year of 2023.

QA/QC of Diffusion Tube Monitoring

East Ayrshire Council's diffusion tubes in 2023 were supplied and analysed by Glasgow Scientific Services (GSS), using the 20% Triethanolamine (TEA) in water preparation method. GSS laboratory is UKAS accredited, participating in the Workplace AIR-PT Scheme for NO_2 tube analysis and the Monthly Field Inter-Comparison Exercise managed by Bureau Veritas UK Ltd. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance.

East Ayrshire Council deploys NO_2 diffusion tubes throughout the area on an approximately monthly basis. Post a four to five-week exposure period, the tubes are replaced and collected tubes are sent to the GSS laboratory for analysis alongside documentation collating recorded exposure times and dates. The Council also sends one unexposed tube (a blank) with each batch to ensure that there has been no contamination while in transit or storage.

Monitoring in 2023 throughout East Ayrshire was not completed in adherence with the 2023 Diffusion Tube Monitoring Calendar, therefore changeovers conducted in January, February, March and June were not in line with Defra guidance. As such, there is a degree of certainty surrounding the monitoring results provided.

Diffusion Tube Annualisation

TG22 states that annualisation is required for any site, which has a data capture of less than 75%, but greater than 25%, or has 3 months of data collected for the monitoring year in line with the Diffusion Tube Monitoring Calendar. Diffusion tube site DT2, DT9 & DT15 required annualisation due to insufficient data capture in 2023. The sites reported data

capture of 58.3% & 66.6% during the 2022 monitoring period in line with the Diffusion Tube Monitoring Calendar, which therefore required annualisation.

Annualisation was completed using the Diffusion Tube Data Processing Tool using continuous monitoring station at Irvine High Street, North Ayrshire. The continuous background monitoring sites were suitable to use as they all had >85% data capture and therefore could be used for annualisation. Table C.1 presents the annualisation summary, taken from the 'Diffusion Tube Data Processing Tool'.

Table C.1 - Annualisation summary (concentrations presented in µg/m3)

Diffusion Tube ID	Annualisation Factor Marnock Street	Annualisation Factor Irvine High Street	Average Annualisation Factor	Raw Data Simple Annual Mean	Annualised Data Simple Annual Mean
DT2	0.9578	0.9286	0.9432	27.2	25.7
DT9	1.1310	1.1786	1.1548	6.8	7.9
DT15	1.0565	1.0120	1.0343	20.1	20.8

Diffusion Tube Bias Adjustment Factors

East Ayrshire Council have applied a local bias adjustment factor of 1.14 to the 2023 monitoring data. A summary of bias adjustment factors used by East Ayrshire Council over the past five years is presented in Table C.2.

Table C.2 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	Local	-	1.14
2022	Local	-	1.26
2021	Local	-	1.06
2020	National	03/21	0.96
2019	National	03/20	0.86

Table C.3 – Local Bias Adjustment Calculations

	Local Bias Adjustment Input
Periods used to calculate bias	9
Bias Factor A	-
Bias Factor B	-
Diffusion Tube Mean (µg/m^3)	15.4
Mean CV (Precision)	7.3%
Automatic Mean (µg/m^3)	17.7
Data Capture	97%
Adjusted Tube Mean (µg/m^3)	-

A single local bias adjustment factor has been used to bias adjust the 2023 diffusion tube results as there was**:**

- East Ayrshire Council co-location site had 'good' overall precision for the diffusion tubes, 'good' overall data capture and also had high quality chemiluminescence results (i.e.to national AURN standards);
- A reduced number of sites used for national bias adjustment were located in Scotland, compared to previous years;
- Local bias adjustment factor is deemed more representative for East Ayrshire.

NO_2 Fall-off with Distance from the Road

No diffusion tube NO_2 monitoring locations within East Ayrshire Council required distance correction during 2023.

QA/QC of Automatic Monitoring

East Ayrshire Council outsources the maintenance and data management of automatic monitoring data at St Marnock Street in Kilmarnock to AECOM and Ricardo respectively, with both also undertaking the Local Site Operative (LSO) duties involving routine servicing and provision for emergency callouts as required.

East Ayrshire Council would undertake LSO duties where necessary, often concerning instrumentation faults detected, with rectification support provided via email or telephone call from AECOM and Ricardo. AECOM will attend site post consultation with East Ayrshire Council if issues are unable to be rectified.

The automatic station, St Marnock Street in Kilmarnock, is covered by a service contract provided by AECOM and servicing of the instrumentation is conducted every 6 months by an engineer in accordance with the manufacturer's instructions and warranty conditions. AECOM, alongside Ricardo, also provide an emergency call out response to cover breakdowns.

The site is audited biannually by Ricardo on behalf of the Scottish Government, as part of the Scottish Air Quality Network. A site visit is conducted each month by the Environmental Health Team at East Ayrshire Council or AECOM to the automatic monitoring location to undertake routine filter changes, inlet cleaning, and undertake a manual calibration as recommended by Ricardo and aligned with the instruction manual technique.

Zero and span checks, which are compared to the automatic daily calibrations. The monitor is calibrated using on site calibration gases, which involves feeding zero air gas, followed by a span gas containing a known concentration of NO_2 through the NOX analyser, with the measured concentration recorded for rescaling. A correction factor is then applied based on the analyser's response. Regular site visits to the monitoring station highlight 'best practice' and allow for the identification and rectification of faults that may occur. Data is stored in both raw and corrected form and Ricardo analyses and corrects it where necessary, alongside East Ayrshire Council, with a monthly data validation assessment conducted.

Copies of the calibration reports, calibration gas logs and engineers are retained on file. These can be obtained by contacting the Environmental Health at the Council. Data is examined by Ricardo and East Ayrshire Council on a daily basis to ensure faults are reported and to screen out erroneous and unusual measurements, with increased concentrations, defined by peaks, investigated further in accordance with guidance.TG22 and equivalent to processes used at UK National Network monitoring sites (i.e. Automatic Urban and Rural Network (AURN)).

This gives a high degree of confidence in the data obtained for reliable concentrations at the automatic site as well as processes to ensure minimisation of data loss and achieve the required data capture. Every 3-months the data is ratified by Ricardo, which involves a critical review of all information relating to a particular data set in order to verify, amend or reject the data ensuring it is reliable and consistent. Post data ratification, Ricardo present the final data set to be used in 'Review and Assessment Processes.'

The data presented in the report has been ratified by Ricardo and East Ayrshire Council. Data is available upon request to the Environmental Health Team or via the Scottish Air Quality Website.

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

2023 statistics for PM_{10} and $PM_{2.5}$ that have been corrected using factors (PM_{10} divided by 0.909 and $PM_{2.5}$ multiplied by 1.06) identified by the “Scottish Government Equivalence Study To Investigate Particulate Matter Monitoring In Scotland Using The Fidas 200.”

Automatic Monitoring Annualisation

All automatic monitoring locations within East Ayrshire Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations within East Ayrshire Council required distance correction during 2023.

Figure 1 - Map of Smoke Free Zones

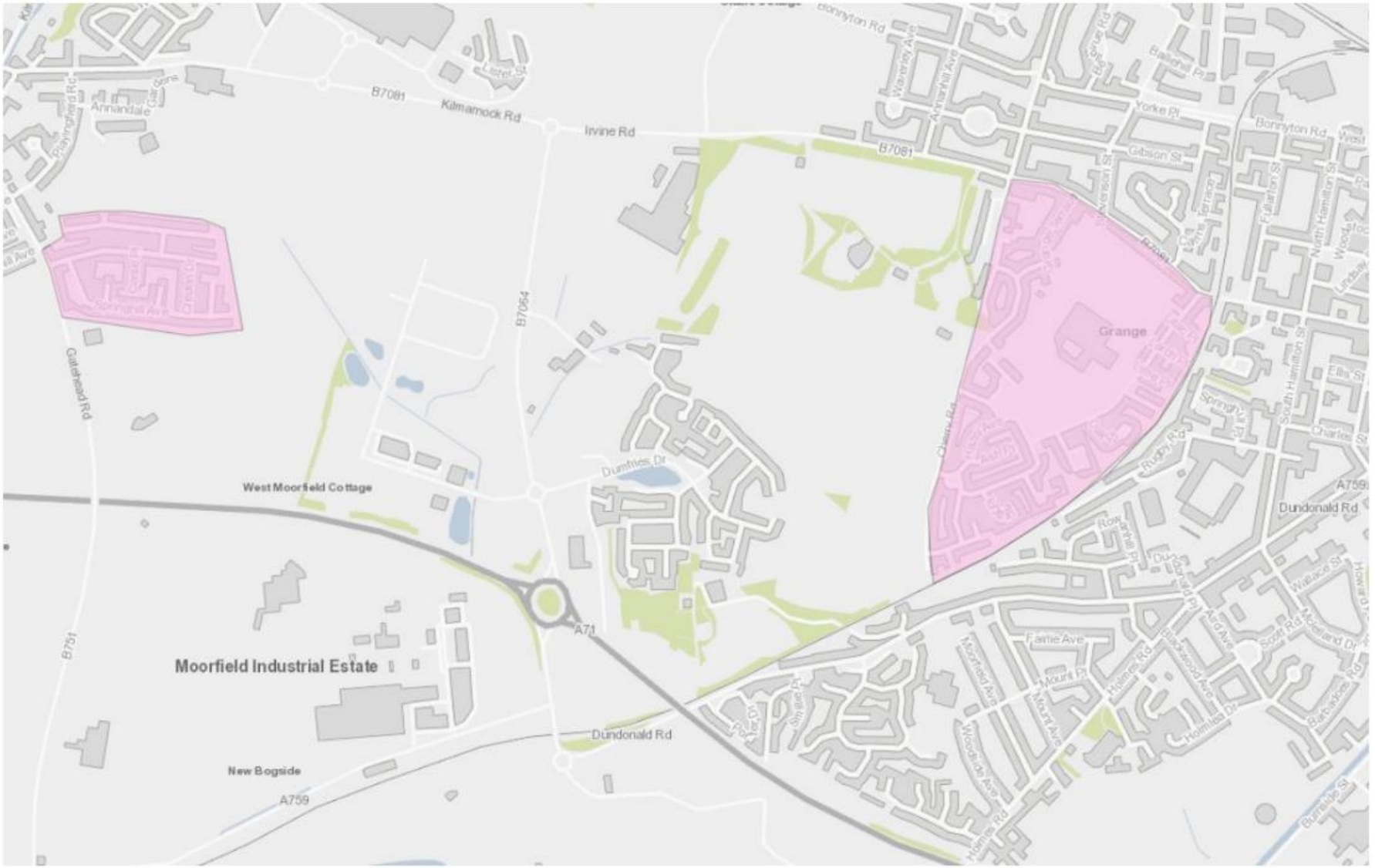


Figure 2 - Map of all Sites East Ayrshire

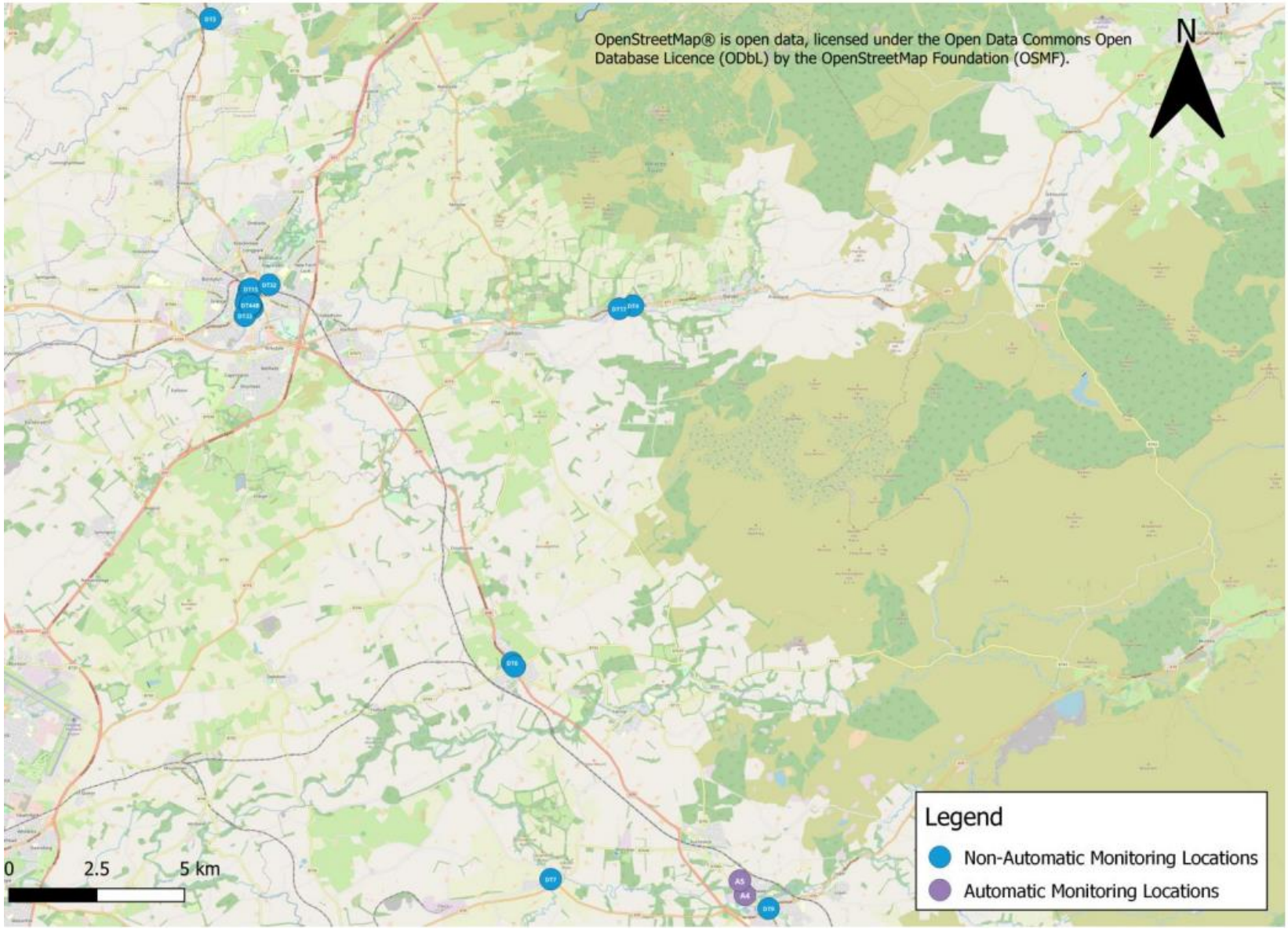


Figure 3 - Map of Automated Sites in East Ayrshire

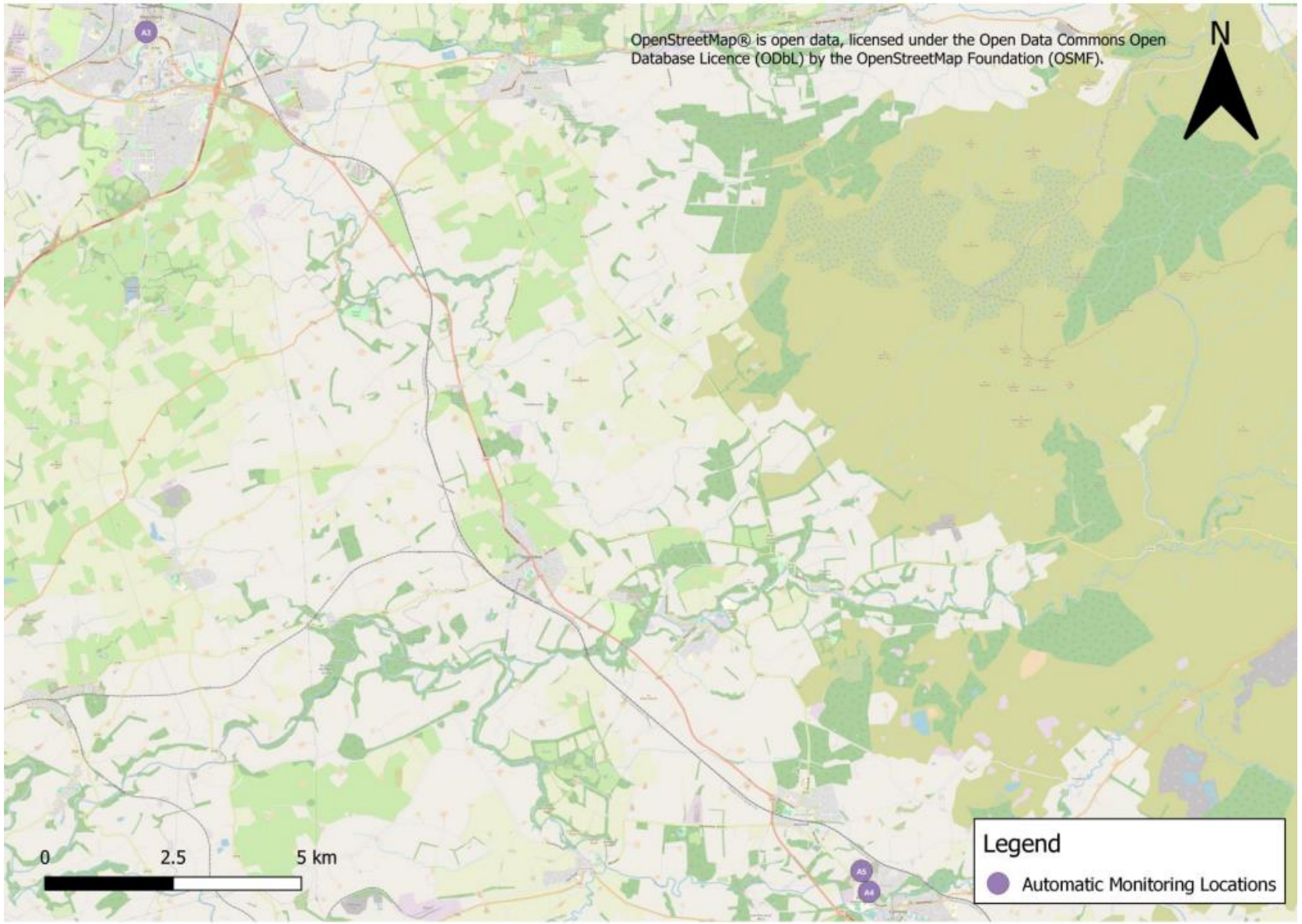


Figure 4 - Map of all Non-Automated sites in East Ayrshire

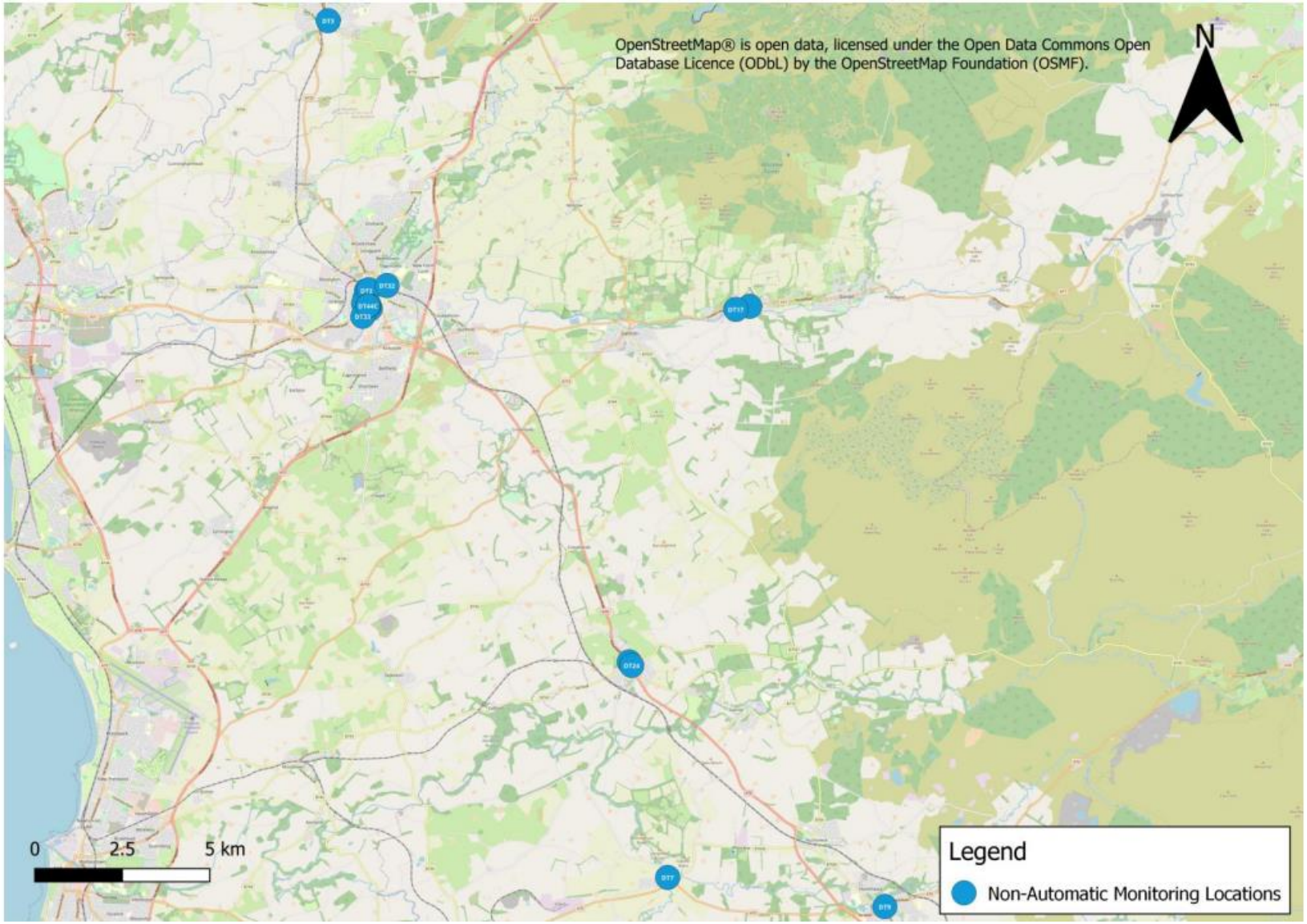


Figure 5 - Map of Non - Automated Sites – Kilmarnock

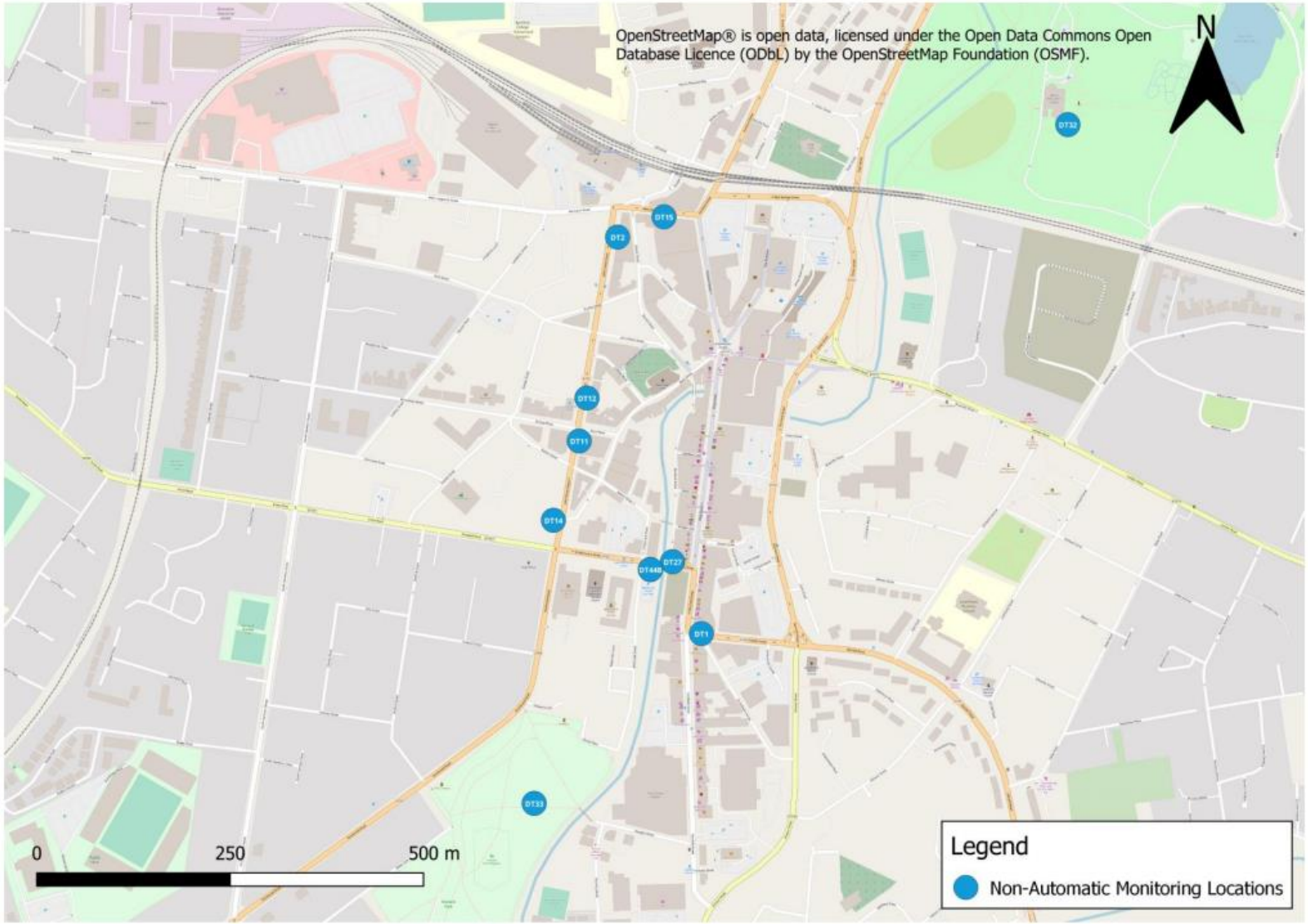


Figure 6 - Map of Non-Automatic Sites - Ochiltree and Cumnock

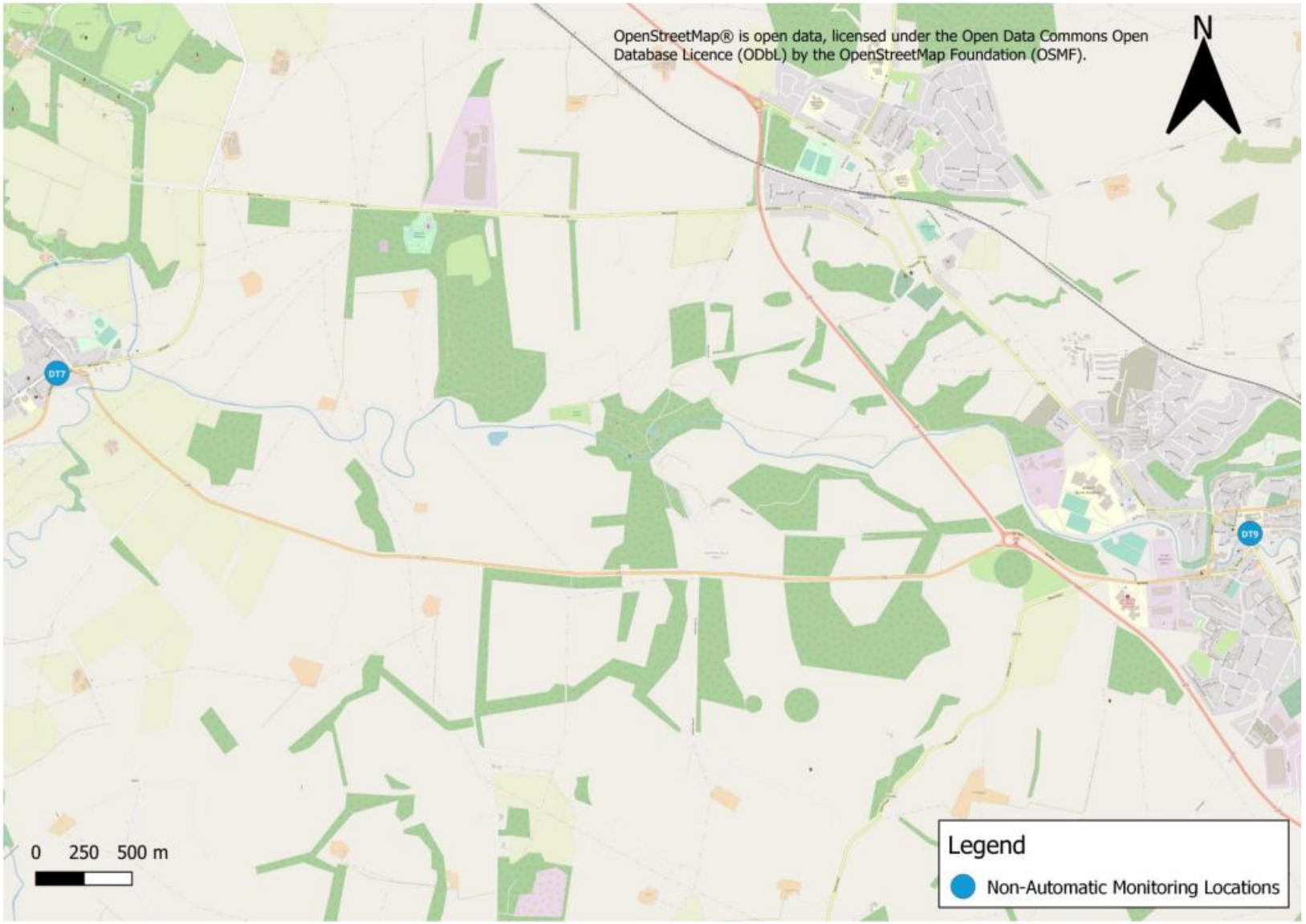


Figure 7 - Map of Non-Automatic Sites – Mauchline

Figure 8 - Map of Non-Automatic Sites - Newmilns

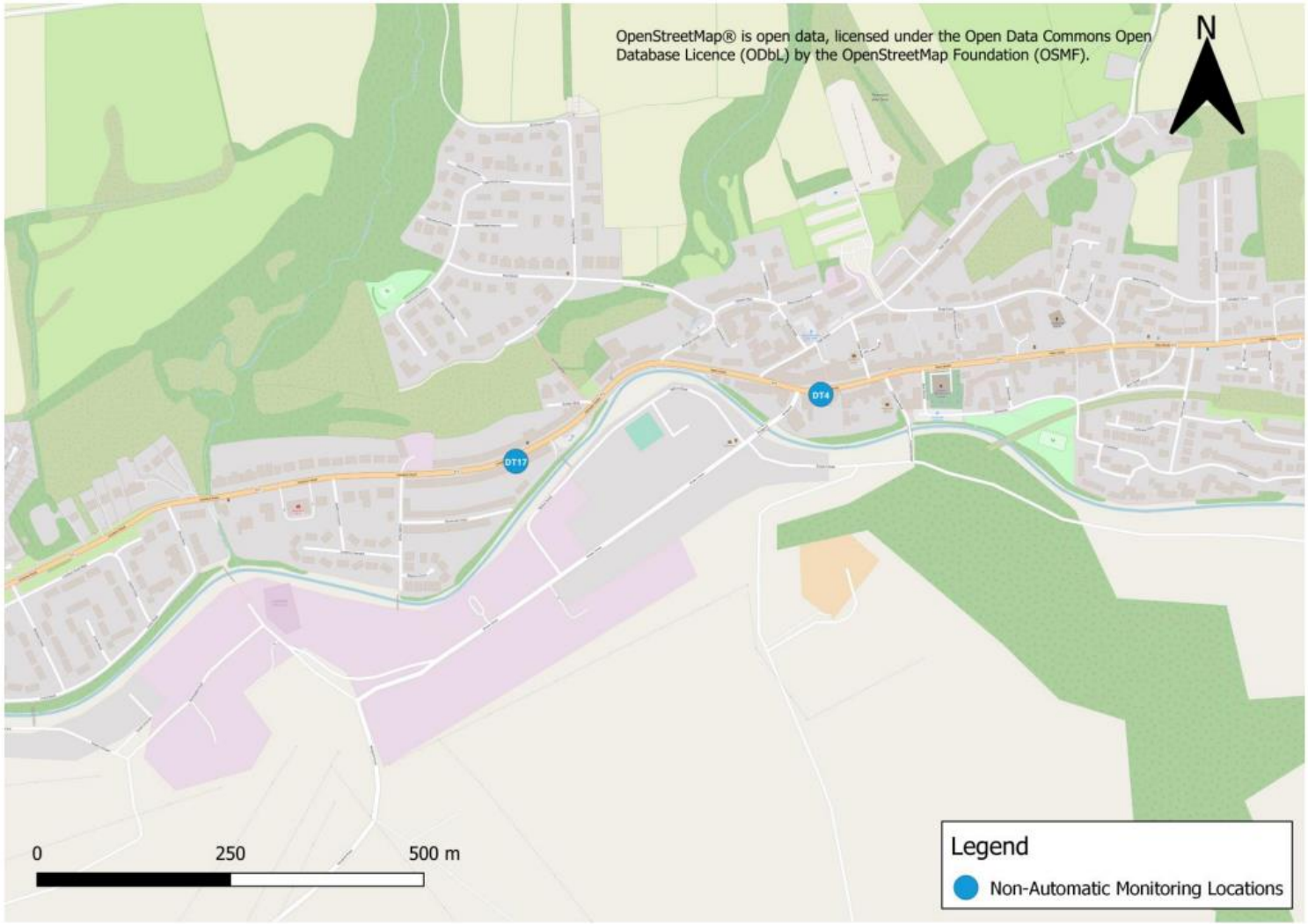
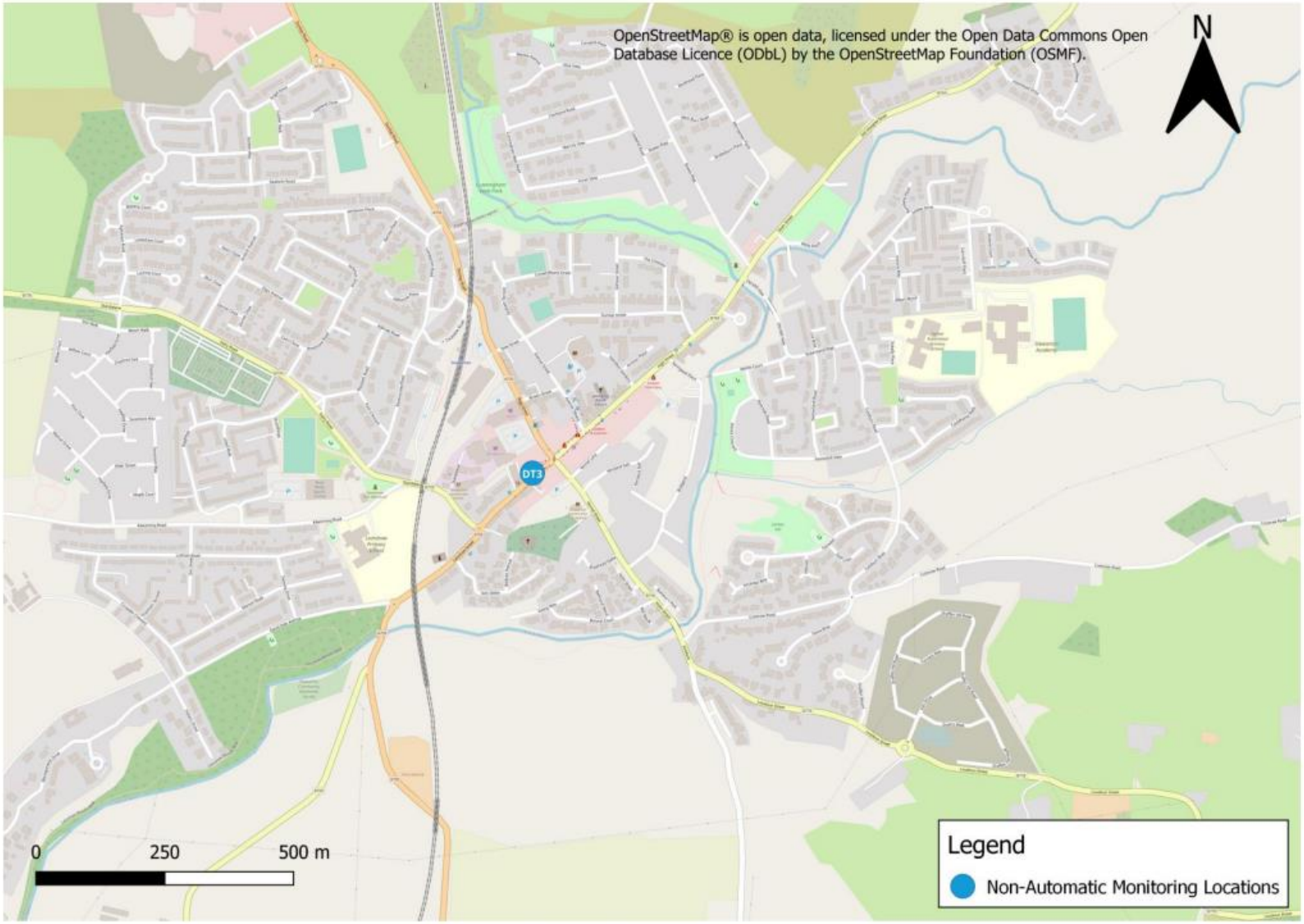


Figure 9 - Map Non-Automatic Site - Stewarton



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
ARA	Ayrshire Road Alliance
APR	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
DT	Diffusion Tube
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

References

1. Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

3. Defra. Air quality appraisal: damage cost guidance, January 2023

4. Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018